

Measuring Professional Identity: A Review of the Literature and a Multilevel Confirmatory
Factor Analysis of Professional Identity Constructs

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Abstract

This article contributes to the study of professions by forwarding a strategy for measuring professional identity guided by institutional logics. We review conceptual and measurement strategies used previously in the study of professional identity to articulate a multidimensional and multilevel approach. The application of institutional logics makes clear the importance of beliefs as well as belonging and attachment in the study of professional identity, and at the same time, the project contributes to institutional logics a more thorough explication of professional identity. Providing an exemplary case, we report a multilevel confirmatory factor analysis of measures of professional identity constructs from a national sample of physicians ($N = 887$) nested in diverse practice organizations ($J = 488$), which demonstrated the empirical independence of belonging, attachment, and beliefs across multiple levels of analysis. We discuss the implications of the approach for important theoretical questions at the intersection of identity, organizations, and institutions (e.g., the “professional-bureaucratic” conflict and the multiplicity of targets of identification). We also make recommendations for operationalizing a multidimensional, multilevel conceptualization of professional identity.

Keywords: professional identity, institutional logics, multilevel confirmatory factor analysis

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As institutionalized occupations (Abbott, 1988), professions have a profound influence on organized activities and society broadly (Brock, Leblebici, & Muzio, 2014; Scott, 2008), *and* on the careers and identities of incumbents. Traditional studies of professions emphasized long periods of training and socialization (Moore, 1970; Parsons, 1951) as a source of distinctive and functional occupational identities. More recent studies of professional identity have emphasized, for example, the contested nature of profession (Cheney & Ashcraft, 2007; Gorman & Sandefur, 2011), the negotiation of professional identity in communication (Ibarra, 1999; Pratt, Rockmann, & Kaufmann, 2006), prestige and gender (Ashcraft, 2000; Hinze, 1999), and the role that identity plays in managerial control (Alvesson & Willmont, 2002). Professional identity offers a site for understanding the interaction between work and identity more broadly (Alvesson, Ashcraft, & Thomas, 2008; Tracy & Geist-Martin, 2014) and its consequences for the people and organizations served by professionals (Ashley & Empson, 2012; Gunz & Gunz, 2007; Korica & Molloy, 2010). Previous research has signaled that professional identity is one among many types of identity present in workplaces (Ashforth, Harrison, & Corley, 2008; Scott, 1997; Scott et al., 1999; Scott & Fontenot, 1999; Scott & Stephens, 2009), and that it may be fundamentally different from group or organizational identity (Lammers, Atouba, & Carlson, 2013; Vough, 2012). However, the connections between the identities of those holding professional positions and macro organizational and extra-organizational phenomena have not been worked out (Ashforth, Rogers, & Corley, 2011; Thornton, Ocasio, & Lounsbury, 2012). This piece illuminates this relationship by articulating and testing a measurement approach aimed at understanding the expression of institutional logics in professional identity.

Understanding and being able to measure the institutional character of professional identity is important, because doing so speaks to questions at the heart of what it means to be a professional (Ashforth et al., 2011; Scott, 2008). Guidance provided herein for the operationalization of professional identity as institutional provided herein should prove especially useful given the state of the field. Ashforth et al. (2008) criticized work on occupational and professional identity as “sporadic” (p. 351), especially compared to work on organizational identity (see also, Gorman & Sandefur, 2011). With few exceptions, the quantitative study of professional identity, building on work from the 1970s and 1980s (for a review see Wallace, 1993), has tended to focus on professional commitment and its variants without exploring the complex dynamics of professional identity revealed in other research. Methodological and theoretical innovations are needed (cf. innovative approaches in Bunderson, Lofstrom, & Van de Ven, 2000; Chan et al., 2012; Suddaby, Gendron, & Lam, 2009).

A move in the direction of connecting professional identity and institutional orders is found in recent work on institutional logics. Building on Friedland and Alford (1991) and Thornton (2004), Thornton, Ocasio, and Lounsbury (2012) posited sources of identity as one of the “building blocks [that] specify the organizing principles that shape individual and organizational preferences” (p. 54) in institutional orders. Identity, they argued, conveys behavioral repertoires for individuals, including knowledge of “who they are, their logics of action, how they act, their vocabularies of motive, and what language is salient” (p. 54). For example, in the institutional order of the family, reputation is seen as a source of identity, and for the corporation, bureaucratic roles are. Thornton et al. observed that professional identities are characterized by group affiliations as well as roles that are defined in part by other roles, so, for example, physicians’ identities are sustained in part by the enactment of roles by nurses, patients,

technicians, and administrators. In the institutional order of the profession, they stipulated that sources of identity include “association with quality of craft and personal reputation” (p. 56).

Although the connection between identity and institutional order via logics laid out by Thornton et al. (2012) seems theoretically straightforward, the actual observable nature of identity and how it connects to the logic of an institutional order remains underspecified. For example, the mechanisms by which group membership contributes to the identity of professionals seems tenuous. In the case of physicians in professional associations for example, only about fifteen percent of practicing physicians in the United States belong to the American Medical Association (Collier, 2011). The means by which the Association signals to physicians aspects of their identity is unclear. Despite the rise of group practices, most physicians actually see patients individually, and their interactions with one another will have uneven effects on identity. Recent research suggests that professional identity may be more closely related to activities—including interacting with patients—than simple membership (Lammers et al., 2013; Vough, 2012). The theoretical view that work roles contribute to identity depends for support on observational studies of interaction or measures of perceived aspects of the roles that members of various professions fill in their work. Thus may more careful explication and operationalization of measures contribute to our understanding of professional identity.

In an effort to operationalize these complexities and capture the institutional in identity, we suggest integrating generic approaches to occupational identity with direct observation of specific professional identities. The literature on identity and identification in organizational settings (e.g., as reviewed by Ashforth et al., 2008), strongly suggests that at least two phenomena are at work in identity formation and maintenance: belonging and attachment, and this theorizing is also reflected in the institutional logics conception of identity (Thornton &

Ocasio, 2008; Thornton et al., 2012). Per the review that follows below, belonging refers to being a member of a social group. Attachment is a broad label for diverse scholarship operationalizing a sense of oneness with others in the group and the group itself, commitment to the group, and valuing the group such that separation from it has a cost.

Belonging and attachment are generic in the sense that they can be applied to any profession, occupation, group, or organization. But to connect belonging and attachment to the institutional, we argue, requires the substantive content of beliefs about particular realms of work. The content of beliefs is particular to specific professions and develops based on how those professions are actually currently institutionalized (McKenna, 2006). In other words, we argue that to connect professional identity to institutional logics requires measures of belonging, attachment, *and* beliefs. The belonging and attachment obtain character when specific beliefs are associated with them. That is what makes logics more than abstractions but consequential aspects of professional identity.

Additionally, because professionals are organizationally situated, a reliable approach to understanding their identities should also take differences in workplaces into account. For many years, scholars of the professions have noticed that different professional groups face various levels of control and conflict (Chreim, Williams, & Hinings, 2007; Scott, 1965, 2008).

Professionals with similar beliefs about their profession may elect to work in similar organizations (Schneider, 1987). Similar organizational forms may socialize professionals in similar ways (Von Nordenflycht, 2010). Professions and therefore professional identity are intuitional in part, because of the organization of professionals in particular organizational forms (McKenna, 2006; Scott, Ruef, Mendel, & Caronna, 2000). For example, the work of physicians in hospital and medical clinics is institutionalized in part because these organizational forms are

influenced by the legal frameworks and economic systems prevailing in the field of medicine.

The useful measurement of professional identity, we believe, should include belonging, attachment, belief, and organization.

The article offers a theory-driven methodological contribution, namely, a more nuanced approach to the quantitative measurement of professional identity. We explicate and test the independence of belonging, attachment, and belief controlling for organization. The contributions include (a) an approach to measuring professional identity, (b) grounded in an extensive review of the literature focus on past measurement of professional identity constructs, (c) and an empirical demonstration of the feasibility of the approach in the context of physicians' professional identity. These insights should be particularly valuable in the study of professionals such as physicians where field level changes in medicine (e.g., legal reform, reorganization, and increased market pressures) have important implications for physicians' professional identity and their work (Apker, Propp, & Zabava Ford, 2005; Barbour, 2007 #3098; Pratt et al., 2006; Scott et al., 2000).

We begin by reviewing the literature on professional identity, emphasizing the ways belonging, attachment, and belief have been measured in previous scholarship. Second, we further explicate work on institutional logics (Thornton & Ocasio, 2008; Thornton et al., 2012) to conceptualize and operationalize professional identity as at least some degree institutional (Lammers, 2011; Lammers & Barbour, 2006). We report a test of this conceptualization through a multilevel confirmatory factor analysis (Muthén, 1994) of multiple measures of professional identity constructs of physicians practicing in a variety of organizations and locations, which offers support for our multidimensional, multilevel approach. We discuss the implications of this approach for addressing theoretical and methodological problems in the study of professional

identity including the “professional-bureaucratic conflict,” (Gunz & Gunz, 2007, p. 853) and the multiplicity of targets of identification (Scott, 1997; Vough, 2012). For example, research on the professional-bureaucratic conflict has tended to assume that being a member of a profession would be associated with holding beliefs consistent with the logics of the profession and that being more attached to the profession would coincide with the intensification of the conviction with which professionals hold such beliefs (Wallace, 1993, 1995). However, we argue that inconsistencies in research on the professional-bureaucratic conflict may be explained by the fact that being a professional (even a strongly committed one) may have (for some) little to do with the beliefs held about the profession. We conclude with recommendations for the study of professional identity. We now turn to a review of previous measurement approaches.

Belonging and Attachment in Measures of Professional Identity

The diversity in the conceptualization of professional identity, related constructs, and measurement strategies (e.g., occupational and career identity, commitment, identification) reflects its complexity. First, **belonging**, or simple membership, has tended to be assumed in studies of professional identity. That is, the bulk of studies that focus on some aspect of being a professional tend to focus on a single profession or occupation. However, the studies that do contrast occupations use belonging to make inferences about identity and its consequences in organizing. That might include sampling different professional or occupational groups within an organization or network: For example, Hassan and Rohrbaugh (2011) compared professional, managerial, and clerical public sector employees in New York State agencies and found that relationships between organizational climate and organizational commitment varied depending on the occupation to which participants belonged. Relatedly, researchers have also used samples from multiple organizations to capture multiple professions to generalize across them (e.g.,

corporate law, human resource management, and computer programming in McAulay, Zeitz, & Blau, 2006). Researchers have also focused on comparisons using occupational subgroups to operationalize belonging. For example, in healthcare, research has compared specialists and primary care physicians (e.g., Landon, Reschovsky, & Blumenthal, 2003). However, most studies of professional identity take belonging as a given (i.e., by focusing on a single occupational group or profession) and measure aspects of attachment instead.

Whereas belonging reflects a simple recognition of membership in a social category, measures of **attachment** reflect individuals' perceptions of the intensity of their connection to that category. Measures of attachment are most common in studies of professional identity. Indeed, scholarship has demonstrated at length the importance of conceptual distinctions among measures of what we are calling attachment by sorting out related concepts like commitment and identification (Ashforth et al., 2008; Mael & Ashforth, 1992; Meyer, Allen, & Smith, 1993; Miller, Allen, Casey, & Johnson, 2000; Scott, Corman, & Cheney, 1998). We group them, because they share an interest in capturing that sense of connection with a collective that varies in intensity. The diverse approaches to the measurement of attachment have included behavioral, instrumental, and affective measures (see Meyer et al., 1993, for a discussion of the instrumental/affective distinction).

Studies of professional identity have employed measures of the frequency of specific professional behaviors as indicative of attachment (i.e., attending professional meetings, reading professional publications). Hall's (1968) classic measures of professionalism included profession as referent with items like "I systematically read the professional journals" (p. 113, refined by Snizek, 1972), and it has been have been adopted to assess "professional identification" (Goetz, Morrow, & McElroy, 1991). Russo's (1998) study of journalists measured membership in a

professional society as one indicator of a “professional orientation” (p. 83). Scott et al. (2000) used the proportion of physicians enrolled in the American Medical Association (AMA) as an indicator of attachment to document at an institutional level the decline of a “logic of professional dominance” (p. 315).

Instrumental measures of attachment have included a willingness to stay in an occupation despite inducements to leave. The work developing Becker’s (1960) theory of side-bets offers an early example of this measurement approach. Ritzer and Trice’s (1969) work that has been developed especially by Aranya and colleagues (e.g., Aranya & Ferris, 1984) measured commitment by asking how likely individuals would be to change professions (and organizations) given various inducements (i.e., no, slight, or large increases in pay, freedom, status, responsibility, and opportunity to get ahead). Those who would refuse to leave despite inducements could be described as committed—attached.

Blau (1985) took a similar approach in his study of nurses’ career commitment, measuring it with items like “If I had all the money needed, I would still work in nursing,” (p. 283). Blau’s (1988) study of employees at newspaper and insurance companies refined the same measure defining “career commitment” as “one’s attitude toward one’s profession or vocation” (p. 289). Blau, Paul, and St. John’s (1993) multidimensional measure of work commitment included measures of the appeal of a particular job, workplace, occupation, and work generally with an 11-item measure of occupational commitment that built on Blau (1985, see also Blau & Lunz, 1998; Blau, Surges Tatum, & Ward-Cook, 2003; Chang, 1999).

On the other hand, affective measures assess feelings about a profession such as pride, shared values, and caring. Many affective measures of professional identity have been based on existing measures of organizational commitment or identification replacing “organization” with

“profession” or “occupation.” Aryana, Pollock, and Amernic (1981) adopted Porter et al.’s (1974) measure of organizational commitment using items such as “I find that my values and the profession’s values are very similar” (p. 280), and the use of Porter et al.’s work are most common (e.g., Morrow & Wirth, 1989; Thompson & Van de Ven, 2002; Wallace, 1995). Meyer et al.’s (1993) three component measure of occupational commitment was similarly based on their previous work on organizational commitment (Meyer & Allen, 1991). Other examples include adoptions of Cheney’s (1983) measure of organizational identification based on rhetorical theory (e.g., Russo, 1998; Scott, 1997; Scott et al., 1999), and adoptions of Mael and Ashforth’s (1992) social-identity-theory-based measure of organizational identification (e.g., Bamber & Iyer, 2007; Hekman, Steensma, Bigley, & Hereford, 2009).

Belonging and attachment are useful for many reasons. That individuals belong to a social group is often of interest in and of itself (e.g., studies of particular professional groups like physicians), and as a form of data, belonging is easily available making it essential in studies using archival data (e.g., Scott et al., 2000). Measures of attachment are empirically related to theoretically and pragmatically important outcomes (Ashforth et al., 2008). They can be useful for disentangling multiple targets of identification (Scott et al., 1999). They have drawn on and were thus commensurate with work on attachment to organizations. Indeed, measures of organizational commitment and identification have been adopted for the study of professions and occupations so widely in part because of the rigor of the research aimed at measures of the organizational variants. Likewise, studies measuring professional attachment have often also included measures of organizational attachment (Wallace, 1993), and measurement similarity has made for straightforward comparisons.

However, as proxies, belonging and attachment might be criticized as offering only

indirect indicators. That is, belonging and attachment should not be taken as equivalent to the acceptance of a particular set of beliefs implicated in a profession. Belonging does not determine attachment, and belonging and attachment do not determine beliefs. For example, it is reasonable that a group of physicians may feel strongly attached to the profession (i.e., care about it, feel one with it), but hold different beliefs about the appropriate practice and organization of medicine. Indeed, the weakness of deterministic assumptions about relationships among belonging, attachment, and belief may explain why behavioral measures of professional identity have proved so problematic (Morrow, 1993; Russo, 1998). Their meaning is not always clear or comparable from occupation to occupation (Blau, 1988).

Relatedly, because studies tend to focus on single occupations and do not measure differences between occupations, the distinctive character of a particular occupation and the phenomena of interest may be obscured. That obfuscation is particularly problematic in research where there is an interest in the actual negotiation and enactment of professional identity. Studies across professions can partial out profession specific variation, but they can be resource and expertise intensive. Measuring the within-profession variation on beliefs related to the profession can at least redress in part the assumption that a group of professionals—even a group who feels equivalently attached to the profession—all believe alike.

Beliefs about Professions in Measures of Professional Identity

Put simply, the measurement of beliefs is key to capturing variation in professional identity. The earliest studies of professionals addressed the problem directly. Gouldner's (1957) seminal study of professors compared the work experiences of two groups—cosmopolitans and locals—defined by scores on a composite of loyalty to the employing organization, commitment to specialized role skills, and outer reference group orientation. An outer orientation meant that

an individual drew on his or her profession for values, beliefs, standards of judgment, and intellectual stimulation. The measure was grounded in concerns specific to higher education at that time. For example, a cosmopolitan tended to agree the “many recent investigations of communism” had “inhibited campus life” (p. 304). Implicit in Gouldner’s study was the recognition that professionals have varying beliefs about being a professional. Moreover, these beliefs are particular to and the contemporary situation of the profession, and they consist of evaluations of what is good, legitimate, and appropriate.

Examples of measures of such beliefs in research since Gouldner’s (1957) work are rarer than measures of attachment or belonging. Research has measured the degree to which professionals believe in the necessity of generic aspects of professionalism (e.g., autonomy and regulation only by other professionals, Hall, 1968) *and* (even more rarely) whether or not they subscribe to ideas specific to a particular profession at a particular time. For example, Morrow and Wirth (1989) assessed not only the commitment of professional and scientific university employees but also the beliefs that “continuing professional development is necessary for professional growth,” and that “conducting research is a good professional development activity” (p. 45). Bunderson, et al. (2000) measured physicians’ perceptions of the actual state of their work against what they thought it should be to gauge physicians’ beliefs in different forms organizing in healthcare (see also, Bunderson, 2001). Gendron, Suddaby, and Lam (2006) measured commitment to independence among auditors, not assessing their commitment to the profession as a social entity per se, but to the *idea* that auditors should be independent and that independence should be part of auditing as a profession (see also Suddaby et al., 2009). Not only does the measurement of such beliefs capture important variation in professional identity not tapped by belonging or attachment, but also we argue based on institutional logics that

measuring beliefs is key to understanding professional identity as institutional. We now turn to a more thorough explication of the theoretical rationale for our model of professional identity informed by institutional logics.

Institutional Logics and Professional Identity

The concept of institutional logics is distinctively suited to the study of professional identity, because it provides resources for understanding the interplay of institutional and organizational structures *and* the communicative enactment and individual negotiation of professional identity and identification. That is, professional identity is distinctive among the sorts of identity experienced at work because of its extra-organizational character (Ashforth et al., 2011; Lammers & Garcia, 2014). It is by definition multilevel involving the individual, the organization, and the institutional. Institutional logics provides a framework for accounting for this distinctiveness in ways commensurate with the identity project at large in organizational studies (Thornton et al., 2012). The notion of a logic captures the existence of ideas of what it is (or should be) to be a “professional” that are independent from but of course related to, enacted in, and shaped by the day-to-day action of individual professionals in particular organizations.

The general idea of a logic refers to a system or mode of reasoning that links several propositions or facts to dictate rational action. Friedland and Alford (1991) asserted that “society is composed of multiple institutional logics which are available to individuals and organizations as the basis for action,” (p. 253). Thornton and Ocasio (2008) developed the idea, observing that institutional logics provide a conceptual link between “individual agency and cognition and socially constructed practices and rule structures” (p. 101). Reflected in, for example, professional standards, rules, policy, and laws, institutional logics offer alternative sources of rationality; they are “more than strategies or logics of actions...they are sources of legitimacy

and provide a sense of order and ontological security” (p. 108). This approach suggests that it is possible to capture, at least in part, the institutional character of professional identity by measuring individuals’ understandings of and reactions to institutional logics.

Drawing on Friedland and Alford (1991), Thornton and Ocasio (2008) argued that an institution has a “central logic that guides its organizing principles and provides social actors with vocabularies of motive and a sense of self (i.e., identity)” (p. 101). That is, according to an institutional logics approach, institutions exert influence on individuals and organizations in part through identity and identification. The institutionalization of a professional identity may be conceptualized as the emergence, establishment, and sedimentation of what it means to hold a particular position or engage in a particular activity in the context of the larger, generic notion of profession (i.e., profession as an institutional order, Thornton et al., 2012): “As collective identities become institutionalized, they develop their own distinct institutional logic, and these logics prevail within the social group” (Thornton & Ocasio, 2008, p. 111).

To reiterate the argument in the framing, an institutional-logics-guided conceptualization of individual professional identity involves belonging in a social group, attachment to it, *and* beliefs about the logics relevant to the group. Arguing of collective identity in general, Thornton et al. (2008; 2012) stipulated that identity reflects in part individuals’ recognition that they are part of a group: They belong. Citing social identity theory (Tajfel & Turner, 1986), they argued that a sense of membership in a group is a prerequisite to forming identity. They also conceptualize it as a precursor to identifying with institutional logics. At the same time, they also acknowledged that “social actors have a hierarchy of identities and roles with varying levels of commitment (emotional and cognitive)” (Thornton et al., 2012, p. 86). Belonging is prerequisite, and attachment varies.

However, identification *also* engenders beliefs and behavior that varies in consistency with the prevailing logics of the collective. According to Thornton and Ocasio (2008):

Identification with the respective institutional logic occurs directly, as the identification with the collective is *equivalent to the identification with the institutional logic* prevailing in the collective, whether they are organizational forms, market competitors, or professional associations, or any other social grouping. (p. 111, emphasis added)

In their terms, the institutionalization of collective identities, which would include professional identity, reflects in part the fact they have prevailing logics to which individual members orient or with which they identify. This conceptualization provides a powerful way of thinking about professional identity, but it might be complicated. Our approach builds on this theorizing by recognizing that “identification with the institutional logics” will necessarily vary from individual to individual, organization to organization, and profession to profession. That is, professionals hold beliefs about the logics of their profession that per institutional logics reflect but are not determined by belonging or attachment per se.

Markoczy (1997) argued persuasively that beliefs may be measured directly and that holding a particular social position (e.g., being a physician) is not a substitute for holding particular beliefs stereotypical of that position. She defined beliefs as “concepts and perceived relationships between things and concepts that individuals hold to be true” (p. 1230) and noted that “beliefs do not have to be justified or true to affect decisions” (p. 1230). Wicker (1969) critiqued the unreliable relationship between beliefs and behavior, and Mischel and Shoda (1995) argued that beliefs and behaviors are more highly correlated within specific settings. Although it may be difficult to predict a behavior on the basis of a self-reported beliefs across wide variety of settings, within settings the correlation between beliefs and associated behaviors is stronger.

With its highly socialized norms of conduct, an established professional setting may be such place where beliefs and behaviors are consistent.

We conceptualize beliefs about institutional logics as established (that is, slow-changing) rule-like propositions about the legitimacy of conduct. They may be articulated as statements of what *should* be. They are extra-organizational in that they apply in and across multiple settings. The communication about and of such beliefs aligns and sustains diverse organizations and individuals into the relatively stable human arrangements we recognize as institutions (Lammers, 2011; Lammers & Barbour, 2006). Not just belonging or attachment but the actual beliefs that professionals hold influence and are influenced by professional action. Indeed, holding, acting on, sharing, and revising beliefs about the nature of work is at the core of what it is to be a professional (Scott, 2008).

According to the foregoing review of measurement approaches and the explication of institutional logics, belonging, attachment, and belief reflect distinct aspects of professional identity that vary at the individual and organizational level. A multidimensional, multilevel measurement of professional identity may reflect these complexities with more fidelity, which is important because of the variability inherent in institutions in identity and identification: The degree to which individuals identify with occupations and professions and adopt prevailing logics varies (Fiol, Pratt, & O'Connor, 2009; Pratt et al., 2006). Sectors of human activity involve multiple competing institutional logics even if particular logics are prevailing (Revers, 2014; Seo & Creed, 2002). The degree to which particular occupations are professionalized varies (Greenwood, Suddaby, & Hinings, 2002; Wilensky, 1964), and professionalization occurs through differing institutional, organizational, and individual processes (McKenna, 2006). Most fundamentally, identification is itself not uniform (Scott et al., 1998; Scott & Stephens, 2009;

Vough, 2012).

In sum, studies that use belonging or attachment as a proxy for beliefs may compound problems of conceptualization and operationalization by assuming that particular beliefs and behaviors will be determined by belonging or attachment. However, the solution is not to abandon otherwise useful measures of belonging or attachment. Per the review of measurement approaches and the theorizing so far, belonging *is* a prerequisite to identification with institutional logics (Thornton & Ocasio, 2008); measures of attachment *are* essential indicators of professional identity (Thornton et al., 2012) with proven utility (Ashforth et al., 2008). The conceptualization and operationalization of professional identity may be improved by attending to belonging, attachment, *and* beliefs, and evidence is needed to demonstrate the empirical distinctiveness and efficacy of conceptualizing and operationalizing professional identity as comprised of not only belonging and attachment but also beliefs. Per our conceptualization, we hypothesized that *belonging, attachment, and belief are empirically distinct* (H1). However, we expect these aspects to be related, and so we also asked, *how are measures of belonging, attachment, and belief related* (RQ1)?

Our argument thus far also makes clear that professional identity implicates multiple levels of analysis. Our approach to professional identity reflects an interest in the ways that extra-organizational factors such as institutional logics play out in organizations where professionals are carriers of institutional logics. Organizations mediate the influences of those logics in professional identity in the sense that institutional logics have direct and indirect relationships with professional identity constructs. That is, our interest in the organization-profession relationship also reflects the notion that professional work is influenced by the particular communicative circumstances and organizational contexts in which it takes place.

Professionals are both independent of and dependent upon the organizations in which they work (Ashforth et al., 2011; Scott, 2008). Scholars of professional identity have recognized more generally that identities are situated in discursive processes that are context-bound (Alvesson et al., 2008; Scott & Stephens, 2009) where professionals experience, for example, different forms of professional and managerial supervision (Scott, 1965). Moreover, that context is itself an institutional matter of enduring and extra organizational legitimacy, norms, and control mechanisms (Thornton et al., 2012). Therefore, we asked, *how do measures of professional identity vary at the organizational level* (RQ2)? The variation of professional identity constructs at the organizational and individual level should indicate the degree to which they are influenced by organizational context.

Methods

To model multiple aspects of professional identity, we drew on a multilevel dataset of physicians ($N = 887$) nested in practices ($J = 488$). Physicians work in various organizational settings (e.g., in large group practices, clinics, or hospitals, or as solo-practitioners) and are known to hold varied beliefs about how professional work and healthcare should be organized (Hoff, 2001). Since the 1980s, medical organizations in the United States have undergone waves of mergers and reorganizations producing ever larger and more privately held firms (Scott et al., 2000). Organizational forms with rhetorically loaded names (Hacker & Marmor, 1999) such as “health maintenance organizations” and more recently “accountable care organizations” could be described as the entry of market logics into medicine (Scott et al., 2000). The results of successive waves of healthcare reform have been mixed for patients, providers, and payers (Bodenheimer & Grumbach, 2012), and the implications of changes in the healthcare for professionals has stoked interest in the (in)commensurability of organizational and professional

identities (Fiol et al., 2009; Lammers & Barbour, 2009; Timmermans & Berg, 2003).

Sample

As part of a larger study of physicians' reactions to variations in the organizational arrangements of their work (Barbour & Lammers, 2007), we conducted a survey of physicians in three different major metropolitan areas in the United States. To capture institutional variation, metropolitan areas with similar populations were selected for sampling based on health maintenance organization (HMO) penetration (Hadley & Mitchell, 1999), which refers to the percent of people enrolled in HMOs in a given region. We selected metropolitan areas in higher (53.5%), middling (25.1%), and lower (18.5%) penetration. Community medical association directories provided the sample frame. Being a member of such local associations was the norm among physician where the small costs of membership (often paid by physicians' employers) was expected and facilitated patient referrals. One thousand participants were randomly selected in each area, and they were recruited in three waves per established survey procedures (Dillman, Smyth, & Melani Christian, 2008). Archival data provided information about the organization in which they practiced and information for comparing respondents and non-respondents.

Questionnaire

In a forty-four-item questionnaire, we fielded six measures of professional identity. The measures of professional identity reflected attachment to the profession (i.e., AMA membership, professional commitment) and beliefs about being a physician (belief in autonomy, self-regulation, the economics of managed care, managed care organizing). We included for comparison a well-established, seven-item measure of the *experience of autonomy* (Hadley, Mitchell, Sulmasy, & Bloche, 1999). We adopted a six-item measure of *professional commitment* (Porter et al., 1974), a four-item measure of *belief in physician self-regulation* (e.g.,

“Physicians’ work is something only someone trained in the field can evaluate”), and a four-item measure of *belief in physician autonomy* (e.g., “Individual physicians should make their own decisions in regard to what is to be done in their work”) used reliably in previous research (Hoff, 2000). We used archival data to record participants’ *AMA membership*. We developed two measures of beliefs regarding competing institutional logics specific to healthcare at the time (Scott et al., 2000): *belief in the economics of managed care* (A free market is the best way to finance healthcare; The profit motive makes healthcare more efficient; Competition among healthcare providers makes for a weaker healthcare system, reverse coded; The profit motive degrades the quality of health services, reverse coded) and *belief in managed care organizing* (My practice improves when I am responsible to a health plan; physicians should be regarded as team members rather than as team captains in health services; A large organization provides better medical services than a small one; Solo practices are inefficient methods of delivering services; There is nothing wrong with paying managers of medical practices more than the physicians they manage; Physicians who have business sense make better practitioners; Well-informed management practices lead to the best medicine).

To develop these items, we conducted a review of widely circulating discourses (e.g., journalist’s accounts, physician testimonials), the scholarly literature, and interviews with practicing physicians (see a similar approach in Gendron, Suddaby, & Qu, 2009; Suddaby et al., 2009). The data were collected in 1999-2000 as the healthcare sector struggled to reign in costs through “managed care” (Lammers & Geist, 1997; Scott et al., 2000). The profession of medicine has struggled to make sense of what many construed as the invasion of market imperatives into professional work (Mechanic, 2000, 2001). Grounding the items in circulating, competing ideas about how medicine should be organized was essential. Specific to the

exigencies physicians' faced at the time, the measures were distinctive to that time; although, they are still relevant in the advent of continuing healthcare reform. The measures assessed physicians' beliefs about market and managerial institutional logics in the practice of medicine (Scott et al., 2000): (a) beliefs indicating that medicine should be managed rationally by business-minded managers, and (b) beliefs that medical services would be best managed if sold in a market place. Practicing physicians reviewed initial drafts (one practicing in a hospital setting and one in a private practice) and confirmed that they were relevant and fitting.

Analysis Strategy

Multilevel confirmatory factor analysis (MCFA) is useful in cases involving nested or hierarchical data (Hox, 2010; Muthén, 1994) and especially useful for scholars of organizational phenomena (e.g., Chan et al., 2012). MCFA is fitting when modeling measures of institutions at the cognitive level, because investigating imbedded institutional variation benefits from the study of individuals nested within multiple organizations. In this case, physicians were nested within practices. Standard confirmatory factor analysis ignores the fact that the variation may be explained in part by the nesting of physicians in organization and the fact that physicians in the sample practice together.

Conducting a MCFA involves modeling covariance structures at multiple levels of analysis decomposing the data into a within groups component (e.g., first or individual level) and a between groups component (e.g., second, group, organization, or practice level). In other words, the overall relationships in the data may be conceived of as comprised of distinct models at the individual level of analysis and the group level of analysis (Hox, 2010, p. 297). Treating the levels as distinct allows for the analysis of the separate covariance structures at different levels of analysis simultaneously. Ignoring this nesting is problematic conceptually and

analytically, because using a single-level approach with multilevel data involves atomistic (incorrectly assuming that the relationships between variables observed at the individual level apply at the organizational level) or ecological fallacies (incorrectly assuming that aggregated variables are meaningful at the individual level) (Klein & Kozlowski, 2000). Ignoring the nesting makes for less accurate estimates of effects and the uncertainty of those effects (Raudenbush & Bryk, 2002).

The first step in such an analysis involves conducting a conventional factor analysis of raw data (i.e., the total covariance matrix, S_T) to explore the fit of proposed model to the data (Muthén, 1994). Doing so would help establish the feasibility of models and suggest potential refinements, but if the data are nested, this model may not be correct because it ignores the fact that the variation may be explained in part by the organizational level (i.e., the physicians' practice together). Such an exploratory first step may be useful, but it may not always be necessary, and unless the model is computationally intense, it is also advisable to “start with the within part either by specifying a saturated model for the between part, or by analyzing only the pooled within matrix” (Hox, 2010, p. 300).

However, before analyzing the within or between covariance structures, the researcher should calculate intraclass correlations (ICCs, Raudenbush & Bryk, 2002, p. 36) for each of the items under study to get a sense of degree to which the nesting of the data may have influenced participants' responses (Muthén, 1994). Low ICCs would suggest that MCFA may not be necessary and indicate traditional CFA instead because of the lack of variation at in this case the practice level of analysis. A rule of thumb of 0.05 or higher as a cutoff for multilevel analysis has been suggested (Dyer, Hanges, & Hall, 2005, p. 155). If most of the items under investigation have ICCs higher than 0.05, then multilevel approaches are necessary to account for the

contribution to the variation in the items due not just to the characteristics of the individual participants but also their shared experience in the same organizational context.

The next steps involve the researcher modeling a series of covariance matrixes that decompose the variance at each level of analysis (Hox, 2010 discussed four approaches—full maximum likelihood estimation, weighted least squares estimation, direct but separate estimation of within and between matrixes, and pseudobalanced or MUML estimation). The researcher tests a model of the pooled-within covariance matrix (S_{PW}). This matrix contains the individual level data corrected for the between structure. This step considers the structure at the individual level. If the structure is the same at the second level or if modeling at the higher levels is not possible or necessary, this model is useful in that it accounts for the hierarchical nature of the data (Hox, 2010). The researcher also tests a model of the structure using the between groups covariance matrix (S_B). S_B is a function of the between-group covariance matrix and the within-group structure scaled by an indicator of group size (Muthén, 1994, p. 384). This step provides initial information about the between structure. Finally, the researcher uses the information developed so far to conduct a multilevel confirmatory factor analysis modeling the within and between structures simultaneously.

Following Hox's (2010) recommendations, maximum likelihood estimation was used to construct models in Mplus 7.2. The analysis focused on the individual level leaving measurement structure unspecified at the organizational level. The principal goal in the analysis was to establish that modeling multiple, distinct aspects of physician professional identity provided a robust fit to the data to demonstrate the independence of measures of professional identity.

Our focus was the structure at the individual level of analysis; however, it was still

necessary to account for the nesting to accurately model the contribution of the organizational level to the measures of professional identity. The data were unbalanced (i.e., group sizes varied), making the modeling of between covariance structures difficult. A sufficient number of groups were available but there was insufficient representation within each group, and the number of individuals within each group varied widely. This imbalance is due in part to uneven responses within practices but more importantly to the diversity of practice sizes and types. Physicians practice alone, in small partnership practices, small and large group practices, and hospitals settings. It is not surprising that the groups' sizes varied. *That variation is not a problem of the data; it is a characteristic of the population of interest.* Therefore, we retained all data, and focused on the pooled-within covariance matrix (S_{PW}) per Muthén (1994) who argued, "Since the S_{pw} analysis is not distorted by the between covariation, it is expected to give a better model fit than the S_T analysis, and it is, therefore, the preferred way to explore the individual-level variation" (p. 388). The practices with one physician contributed information to the between practice variation but not the within practice variation.

Results

After adjusting the sample for undeliverable responses (i.e., due to death, change of occupation, or a move out of state), the rate of cooperation was 38.7%. Low and decreasing response rates are a concern in studies of health care professionals (Cho, Johnson, & VanGeest, 2013) especially among physicians who face well-documented time pressures. The design incorporated best practices to encourage participation, and this rate of cooperation was consistent with similar designs (Drummond, O'Leary, O'Neill, Burns, & Sharp, 2014) though slightly lower than is typical (Cho et al., 2013). The relatively low rate should encourage caution in reading the results, and consistent with the best practices of survey research, we made use of all available

archival data to compare respondents and non-respondents. Respondents were less likely to practice primary care than specialist care ($w = .04, p = .03, df = 2$) and more likely to come from a region with higher health maintenance penetration ($w = .13, p < .01, df = 2$), but *not* more or less likely to belong to the AMA, be board certified, or to be male or female. It may be that exposure to managed care encouraged differential response. Greater affected participants may have seen the topic of the survey as more relevant to them. However, the value of the data (i.e., a useful window on physicians practicing in multiple organizational settings in multiple metropolitan areas) should outweigh this limitation. Still, the results should be read with these differences in mind.

Questionnaires where organizational data were unavailable were removed, and multiple imputation using the expectation maximization algorithm (Schafer & Graham, 2002) was used to replace a small amount of missing data (less than 1%). The final data set consisted of 887 physicians nested in 488 practices. The value of a multilevel approach was confirmed by calculating ICCs for each measure (see Table 1), which indicate the degree to which measures vary at the organizational level (i.e., the degree to which each measure may be influenced by local organizing).

To address hypothesis 1, which predicted that the measures of professional identity would be empirically independent but related, we compared the theoretical measurement model against nested comparison models, moving from a two-factor structure (all items except for those assessing experienced autonomy comprising one latent variable) to a six-factor structure (professional commitment; beliefs in autonomy, self-regulation, the economics of managed care, and managed care organizing; and experienced autonomy). We used the standardized root mean squared residual (SRMR < 0.08) and the root mean squared error of approximation (RMSEA $<$

0.05) as indicators of fit appropriate for large samples and complex models (Brown, 2006). We also examined modification indexes for specific areas of misfit. The principal model fit the data well (see Table 2) without major specific areas of misfit.

The comparison models systematically combined measures to assess aspects of distinctiveness suggested by our theorizing of professional identity. Chi-squared difference tests were used to compare the nested models. The first cluster of comparison models combined the measure of professional commitment and each measure of belief. The first cluster contained four models that each fit the data significantly less well than the principal model. The first cluster provided evidence of the distinctiveness of attachment and belief approaches to the measurement of professional identity. The second and third clusters combined the generic measures of professional belief (self-regulation and autonomy) and the measures specific to the profession of medicine at the time (economics of managed care and managed care organizing). The fourth and fifth models combined the respective measures of generic and specific beliefs. These comparison models were also a significantly poorer fit to the data than the principal model, providing support for hypothesis 1. The second and third clusters indicated the distinctiveness of the generic and specific measures of professional beliefs, and the fourth and fifth demonstrated the distinctiveness of the measures themselves within each approach. The sixth model, included for reference, combined all professional identity measures leaving only experienced autonomy separate, and not surprisingly, it performed worst of all. The model that kept the items distinct significantly improved the fit of the items and the constructs. These results support hypothesis 1, meaning that the data were most consistent with our conceptualization of professional identity.

Research question 1 focused on the relationships between the measures. In examining the matrix of correlations between the measures (see Table 1), we emphasize two findings. First, the

measures of attachment were only weakly related to the measures of belief if related at all.

Professional commitment was not significantly related to belief in autonomy ($r = 0.05$) or belief in self-regulation ($r = 0.06$) and only weakly related to belief in managed care organizing ($r = 0.07$) and belief in the economics of managed care ($r = 0.12$). Consistent with the problems with behavioral indicators in previous research, AMA membership was only weakly related to professional commitment ($r = 0.13$) and the belief measures ($r = 0.12, 0.08, -0.09, -0.12$). These results along with the model comparisons substantiate the distinctiveness of measures of attachment and belief in the study of professional identity. The support the contention that we should not presume that attachment reflect particular patterns of belief, and that belonging, attachment, and belief are related but independent.

Second, consistent with literature arguing that professional and organizational identities may be commensurate (Wallace, 1993), professional commitment as our measure of attachment was positively related to the belief in managed care organizing and economics. Professional commitment was not incommensurate with beliefs about local organizing per se. Although professional commitment was commensurate with belief in managed care organizing, beliefs about the ascendancy of the rights of the professional to be autonomous and regulated by other professionals and AMA membership were not. Belief in self-regulation and belief and autonomy were strongly negatively related to belief in managed care organizing, perhaps reflecting contradictory profession-grounded and organization-grounded institutional logics for work. AMA membership was negatively related to belief in managed care organizing and economics. These two results taken together reiterate the contradictory findings so common in studies of the “organization-profession” or “professional-bureaucratic conflict” (Gunz & Gunz, 2007, p. 853). However, they also reveal that understanding the conflicts between organizational and

professional identities depends on measuring beliefs *not* merely attachments—examining the beliefs implied by competing institutional logics.

Research question 2 focused on the degree to which measures of professional identity varied at the organizational level. Intraclass correlation coefficients (ICCs, Hox, 2010) provided a useful indicator of the ratio of individual-level and organizational-level variance (see Table 1), and the degree to which indicators of professional identity had an organizational-level component. That is, the ICC is an indicator of the degree to which physicians in the same practice setting reacted similarly to a given measure. We conducted comparisons among the ICCs using an F-test for the difference in variances (Fleiss, Levin, & Paik, 2003).

The analysis highlights a key finding: Not all measures of professional identity varied significantly at the organization level, and those that did vary at the organization level did so to differing degrees. That is, for some measures being in the same organization had little effect whereas for others it had a middling or strong effect. Belief in self-regulation ($ICC = 0.02$) and professional commitment ($ICC = 0.05$) varied little at the organizational level, and although the variance of professional commitment was statistically different from zero, the organizational-level variance component of belief in self-regulation was not. They both varied significantly less than the other measures at the organizational-level. Belief in autonomy varied at the organizational level proportionately more ($ICC = 0.10$), but not as much as AMA membership ($ICC = 0.16$), belief in the economics of managed care ($ICC = 0.17$), or belief in managed care organizing ($ICC = 0.22$). They had the relatively higher organizational-level variance components with belief in managed care organizing significantly higher than the others. Included for comparison, actual experience of autonomy had the highest organizational variance component ($ICC = 0.27$). Although they are limited to physicians, the results suggests the need

to conceptualize and measure professional identity at multiple levels of analysis, because of the differences in the organizational-level variance components. Before discussing the implications of these results, we take care to acknowledge the limitation of these data.

Limitations

These data have value as an exemplary case of the measurement approach for which we have advocated; however, they are not without limitations that merit attention before considering the implications of the analysis. First, the data focus on a particular profession. As we argued in the review, belonging often is a hidden constant. The case of physicians practicing during the rise of managed care is a useful and important one, but care should be taken in generalizing the results. For example, as we discuss in the framing and discussion to follow, variation in professionalization likely has important effects on the variables measured and the degree to which they varied at the organizational level of analysis (McKenna, 2006). Second, the data are themselves imperfect. The response rate would have ideally been higher as discussed above. They are also incomplete in that they focused on theoretically important aspects professional identity, but not all important aspects of professional identity such as the client-centered nature of professional work especially important in medicine. Relatedly, the measurement of beliefs reflected relevant institutional logics, but they should not be taken as measuring institutional logics.

Third, professionals may not necessarily always be nested in organizations as typically conceived; however, we would argue that even the solo practitioner without any staff involves aspects of organizing (e.g., billing, contracting, hospital privileges, professional associations, referral networks). Taking a broad view of organizing means the truly, completely isolated professional is rare indeed. Such variation in settings where professionals work underscores that

we should not ignore the organizational arrangements within which professional work occurs. That includes variation in the size, formality, and intensity of organizing activity. Although this analysis only examines professional identity constructs measured at the individual-level of analysis, it does control for the nesting of professionals in organizations. Finally, it is likely, as these data make clear, that some but not *all* aspects of professional identity are multilevel. These limitations underscore the need for more nuanced approaches to the measurement of professional identity. Indeed, these data, despite these limitations, are useful in part because they demonstrate that the organizational-level variation itself *varies* from measure to measure. These data still have value as an exemplary case of a multidimensional, multilevel approach to the study of professional identity.

Discussion

The most important contribution of (1) the review of past measures of professional identity and (2) the empirical evidence reported herein is the explication and demonstration of the distinctiveness of the measures of belonging, attachment, and belief. In other words, taken together, they provide support for a multidimensional and multilevel approach to measurement professional identity. In particular, the results confirm the importance of measuring not only belonging or attachment to a profession but also beliefs. They also confirm the efficacy of measuring beliefs that reflect at least in part reactions to the prevailing logics of a profession. We discuss the implications of these findings for the study of professional identity highlighting (1) the multidimensionality of professional identity, (2) the multilevel character of professional identity, (3) the potential of the measurement approach for important questions in professional identity research, and (4) recommendations for the study of professional identity informed by the foregoing case and theorizing.

Professional Identity as Multidimensional

The measures performed reliably and fit the data well, demonstrating their efficacy. The results demonstrate that it was possible to develop measures indicative in part of particular institutional logics manifested in the beliefs of professionals about their profession. Moreover, these results also demonstrate the value of measuring not only aspects of professional identity that might hold true across professions but also aspects specific to particular professions at particular moments in time. By articulating a set of specific belief statements derived from an examination of institutional discourses surrounding the practice of medicine, it was possible to measure beliefs about the economics of managed care and managed care organizing in addition to general aspects of the professional experience. These beliefs reflected at least in part physicians' orientations to multiple, competing institutional logics prevalent in medicine (Scott et al., 2000); although, professionals' beliefs about their work and their profession are not solely driven by circulating institutional logics. However, taken together, we might conceive of the beliefs that (a) professionals are players in the market and (b) professionals should be organized in ways determined by professional standards, as intertwined with and oriented to the logics of professional medicine. These data, gathered through the multidimensional measurement of professional identity constructs, provide evidence for such a claim.

For scholars particularly interested in the quantitative study of the negotiation of professional identity, the fact that these dimensions are independent but related necessitates a multidimensional approach. Without that approach, the nuances of professional identity construction and negotiation may be missed by a focus on belonging or attachment alone. For example, the results confirmed the distinctiveness of measuring the aspects of work experience ostensibly valued by professionals (e.g., amount of autonomy experienced) *and* beliefs about the

strength of that value (e.g., the appropriateness of or need for autonomy, cf. Bunderson, 2001; Bunderson et al., 2000).

Professional Identity as Nested in and Operating Across Organizing

The aspects of professional identity measured did not all vary to the same degree at the organizational level. This insight is important for scholars who seek to make sense of the fragmented character of identity that is at once social and individual. Aspects of professional identity have an organizational component, but the influence of organizational setting may be more complex than previously supposed. Looking across these data, we might be tempted to conclude that measures of professional identity have an organizational component simply to the extent that they reference specific organizational dynamics (Ashforth et al., 2008). That is, measures with higher ICCs may have included items that focused on the organization of professional work. Although that explanation is sensible, it is incomplete. The organizational-level variance of professional identity measures was likely also due in part to (a) the degree to which a measure references aspects of the organizational life of professionals discrete from the setting of their practice *and* (b) the degree to which professional work is constituted in organizations.

Generic aspects of professional identity—professional commitment, belief in self-regulation, and belief in autonomy—varied relatively less, if at all, at the organizational level. Aspects specific to the contested institutional logics of medicine varied more from organization to organization (e.g., belief in managed care organizing, ideas about the right way to organize professional work, varied a great deal at the organizational level). The fact that measures of different aspects of professional identity varied in the degree to which they varied at the organizational level suggests a complexity that cannot be subsumed as merely another part of

organizational identity (Ashforth et al., 2008; Lammers et al., 2013; Vough, 2012).

The study of professional identity can benefit from multidimensional, multilevel measurement approaches informed by institutional logics because not all aspects of professional identity are also organizational. The extent to which organizational and professional identity mesh depends on situational factors including institutional dynamics such as the state of conflict between prevailing institutional logics. Differences in the attachment to organizations and professions may matter more when contradictions between institutional logics are most difficult for actors to negotiate (Seo & Creed, 2002). This may occur when institutional logics are in flux (Ashcraft, 2007; Pratt et al., 2006). The degree to which an occupational group is professionalized will also affect professional identity and identification if only because the dynamics which underpin the strength of identification with a profession will themselves vary as the profession is more or less established (Lammers & Garcia, 2009; Lounsbury, 2002; McKenna, 2006). For example, we might expect even more heterogeneity in occupations less well established than those in medicine.

Key Questions in the Study of Professional Identity

Measuring belong, attachment, and beliefs may also invigorate questions important to the study of the professional identity. For example, sorting out past contradictory findings in the study of the (in)commensurability of organizational and professional orientations—the “organization-profession” or “professional-bureaucratic conflict” (Gunz & Gunz, 2007, p. 853)—may benefit by simply rethinking previous measurement strategies. Research on the competing role expectations and logics of professions and organizations reflects the idea that inconsistent or contradictory professional and organizational logics for work may have negative consequences (Barbour & Lammers, 2007; Bunderson, 2001; Fiol et al., 2009; Hoff, 2000;

Lammers & Garcia, 2009; Russo, 1998; Suddaby et al., 2009).

The professional-bureaucratic conflict posits that professionals may experience dissonance and dissatisfaction when they work in organizational forms that are inconsistent with the prevailing logics of their profession. However, reviews of empirical research are mixed, yielding studies that substantiate the incompatibility of bureaucratic and professional logics and also studies that suggest they are not incommensurate at all (Wallace, 1993). By including measures of belief as well as attachment, these data confirmed that individuals can be attached both to a profession and to an organization where they work even if the prevailing logics of profession and organization are contradictory. Professional commitment was positively related to belief in managed care organizing. However, professional beliefs were not. Belief in autonomy and self-regulation was negatively related to belief in managed care organizing.

Bureaucracy in and of itself may not be incommensurate with professional work if it does not infringe on the prevailing institutional logics of a profession. Research has indicated that organizational *and* professional commitment can actually insulate professionals from stressors (Lammers et al., 2013; McAulay et al., 2006), and that may include stress generated in the inconsistencies in organizational and professional logics for work. The results indicated that the (in)commensurability may be better understood as variable.

A related problem centers on the wisdom of combining measures of multiple targets of identification (Lammers et al., 2013; Scott, 1997; Scott et al., 1999; Scott & Fontenot, 1999; Scott & Stephens, 2009) as suggested by Ashforth et al. (2008). Taken together, the multidimensionality and multilevel character of professional identity indicate that although of organizational and professional identity are linked, they should not be combined in the operationalization of work-related identity. Consistent with prevailing identity theory,

institutional logics holds that individuals have multiple targets of identification (e.g., industry, occupation, organization, department, voluntary-organization, race, gender, nationality, and so on), and that these targets vary in their availability, accessibility, and activation in unfolding action (Thornton et al., 2012). However, it is unclear if the wisdom of combining measures of identity (Ashforth et al., 2008) extends to measures of professional identity (Ashforth et al., 2011; Vough, 2012). Imbedded in these theoretical problems is the challenge of understanding professional identity as an odd case—neither entirely nested within organizing nor independent of it. For example, in studying the alternative attachments to work group, organization, and profession, Lammers et al. (2013) found that the three identities were predictive of different dimensions of burnout, suggesting that the identity targets were distinct, *sui generis* phenomena, and required distinct approaches to measurement.

Likewise, much professional work is conducted with clients, and especially in the case of physicians, beliefs about the best way to care for them no doubt inform professional identity, and the client-side of professional work and its implications for identification further complicate professional identity. The measurement of professional identity should not be so focused on institutional forces that it ignores factors such as interaction with clients, and measuring actual beliefs about the way client relationships may be especially useful (cf. Gendron et al., 2006; Gendron et al., 2009). These results indicated that the extent to which aspects of professional identity are organizational, and a multidimensional, multilevel approach can help disentangle the profession as a target of identification.

Recommendations for the Study of Professional Identity

The key finding in this study is the potential value of including measures of beliefs along with belonging and attachment in research on professional identity, and it also offers resources to

guide doing so. Operationalizing the institutional in the study of professional identity presents distinctive challenges that center on the taken-for-granted nature of institutions (Barley, 2011; Barley & Tolbert, 1997; Lammers, 2011; Phillips, Lawrence, & Hardy, 2004). The measurement approach proposed requires the explication and articulation of specific institutional logics relevant to the professions being studied. However, generating items about institutional logics will be complicated by the fact that those logics are often taken-for-granted (Lammers, 2011; Lammers & Barbour, 2006). The researcher could field a set of items so in line with a given, taken-for-granted, dominant institutional logic that the responses do not vary.

First, along with standard item-generation best practices (Miller et al., 2011), scholars could undertake a review of scholarly and popular, historical and contemporary discourses on the institutions of interest. Phillips et al. (2004) argued that to discover institutions in discourse, the researcher should examine discourse produced by organizational actors seen as legitimate and that is recognizable, interpretable, and useable across organizational boundaries. Such discourse should likewise serve as a source for item generation. That is, orthodox measurement development strategies depend on individuals to articulate their perceptions and feelings. However, because they are taken-for-granted, individuals may not be in a position to articulate institutional beliefs. For example, work on the professional identity of airline pilots could generate items that assess not only pilots belonging and attachment to the profession, but also their beliefs about important aspects of profession itself generated in previous research (e.g., Ashcraft, 2007; Real & Putnam, 2005).

Second, studies of professional identity could usefully focus on contested or changing aspects of professions. Barley and Tolbert (1997) suggested researchers look for “forces initially exogenous to the system under study that create disturbances—e.g., changes in technology, new

regulations or laws, major economic shifts, etc.” (pp. 103-104). The existence of contested institutional logics should mean that participants are better able to respond to items about institutional beliefs. This study occurred during profound disturbance in healthcare, and drew on circulating discourses as well as interviews with physicians to generate items capturing institutional logics. The orthodox strategy of piloting items with members of the population of interest offers a check against the taken-for-granted nature of institutions, but the selection of a research context in flux was also essential. In our case, sampling multiple organizations in communities with varying organizational arrangements for healthcare also helped capture that flux making multilevel analysis techniques particularly useful. A reading of the state of institutional disturbances should likewise inform sampling.

Third, professional identity research should take care with the target of identification explicit in items (e.g., rating an organizational member’s team, division, organization) and level of analysis (e.g., measures of or aggregated to the individual, team, division, and organizational levels, see Ashforth et al., 2011). The issues raised by aggregation will be of importance, but because the organizational nature of different aspects of professional identity vary, the explicit target in items is of particular importance. Items that tap general beliefs may make less sense for aggregation to describe a group, but it may be easier for participants to describe their own beliefs. In these data, the items made little sense for aggregation, because they focus on beliefs held by the individual. However, they were influenced by the practice context, and we argue that they reflected the operation of institutions at the individual level.

More robust measures of professional identity may also enable more productive conversations across intellectual traditions. For example, the multidimensional and multilevel study of professional identity can provide a fidelity that may be especially useful in studies of

professional identity that focus on the communicative negotiation of those beliefs in professional work. Quantitative approaches to professional identity should be useful for “exploring the validity and reach of qualitative findings, contextualizing qualitative studies, and generating further questions for qualitative research through reinterpretation and critique of the quantitative results” (Miller et al., 2011, p. 6). Doing so necessitates measures that can engage with the richness of qualitative approaches to the study of identity.

To conclude, the problems and opportunities of conceptualizing and operationalizing professional identity speak to the larger interest in identity shared by organizational scholars. Professional identity is special because it is distinctively entwined with extra-organizational phenomena. Yet belonging to a profession does not alone determine professional identity, and its operationalization should reflect the rich variation in the ideas professionals hold about their work.

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Table 1

Descriptive Statistics, Reliability Indicators, and Correlations

| | <i>M</i> | <i>SD</i> | <i>ICC</i> | Alpha | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------------------|----------|-----------|--------------------------|-------|-------------------------|-------------------------|-----|-------------------------|------|------|
| 1 Professional Commitment | 3.87 | 0.72 | 0.05 | 0.84 | <i>.05_{ns}</i> | <i>.06_{ns}</i> | .07 | .12 | .13 | .32 |
| 2 Belief in (BI) Autonomy | 3.59 | 0.72 | 0.10 | 0.75 | | .50 | .24 | -.45 | .12 | -.07 |
| 3 BI Self-Regulation | 4.27 | 0.69 | <i>0.02_{ns}</i> | 0.84 | | | .11 | -.37 | .08 | -.08 |
| 4 BI Economics of Managed Care | 3.14 | 0.79 | 0.17 | 0.68 | | | | <i>.01_{ns}</i> | -.09 | .14 |
| 5 BI Managed Care Organizing | 2.51 | 0.61 | 0.22 | 0.69 | | | | | -.12 | .28 |
| 6 AMA Membership | 0.27 | 0.45 | 0.16 | NA | | | | | | -.11 |
| 7 Experienced Autonomy | 3.11 | 0.91 | 0.27 | 0.89 | | | | | | |

Note. Correlations coefficients corrected for attenuation are given above the diagonal except for those involving AMA membership, which is a dichotomous, categorical variable. Spearman rho correlation coefficients are reported instead for relationships with AMA membership. All are significant ($p < .05$) unless noted in italics.

Table 2

Nested Model Comparisons and Goodness of Fit Indicators

| | χ^2 (df) | $\chi^2 \Delta$ (df) | SRMR | RMSEA (90% CI) |
|------------------------------------------------------------|---------------|----------------------|------|------------------------|
| Six factor model | 2238.81 (945) | -- | 0.07 | 0.039 (0.0379, 0.0421) |
| <i>Comparison Models</i> | | | | |
| 1. Combined professional commitment and | | | | |
| (a) belief in autonomy | 3718.42 (950) | 1479.61 (5)* | 0.11 | 0.057 (0.0554, 0.0593) |
| (b) belief in self-regulation | 4041.02 (950) | 1802.21 (5)* | 0.11 | 0.061 (0.0586, 0.0625) |
| (c) belief in economics of managed care | 2780.02 (950) | 541.21 (5)* | 0.08 | 0.047 (0.0446, 0.0486) |
| (d) belief in managed care organizing | 3030.66 (950) | 791.85 (5)* | 0.10 | 0.050 (0.0477, 0.0517) |
| 2. Combined belief in autonomy and | | | | |
| (a) belief in managed care organizing | 2719.26 (950) | 480.45 (5)* | 0.08 | 0.046 (0.0446, 0.0486) |
| (b) belief in economics of managed care | 2638.76 (950) | 399.95 (5) * | 0.07 | 0.045 (0.0427, 0.0468) |
| 3. Combined belief in self-regulation and | | | | |
| (a) belief in managed care organizing | 2773.29 (950) | 534.48 (5)* | 0.08 | 0.047 (0.0445, 0.0485) |
| (b) belief in economics of managed care | 2738.70 (950) | 499.89 (5)* | 0.08 | 0.046 (0.0438, 0.0478) |
| 4. Combined beliefs about managed care | 2751.96 (950) | 503.15 (5)* | 0.08 | 0.046 (0.0442, 0.0483) |
| 5. Combined autonomy and belief in autonomy | 3732.05 (950) | 1496.24 (5)* | 0.11 | 0.057 (0.0560, 0.0598) |
| 6. Single factor: All measures combined except autonomy | 5832.36 (959) | 3593.55 (14)* | 0.12 | 0.076 (0.0742, 0.0780) |

Note. The table reports χ^2 difference tests between the six factor model and each comparison model. Significant differences are flagged with an asterisk ($p < .001$).

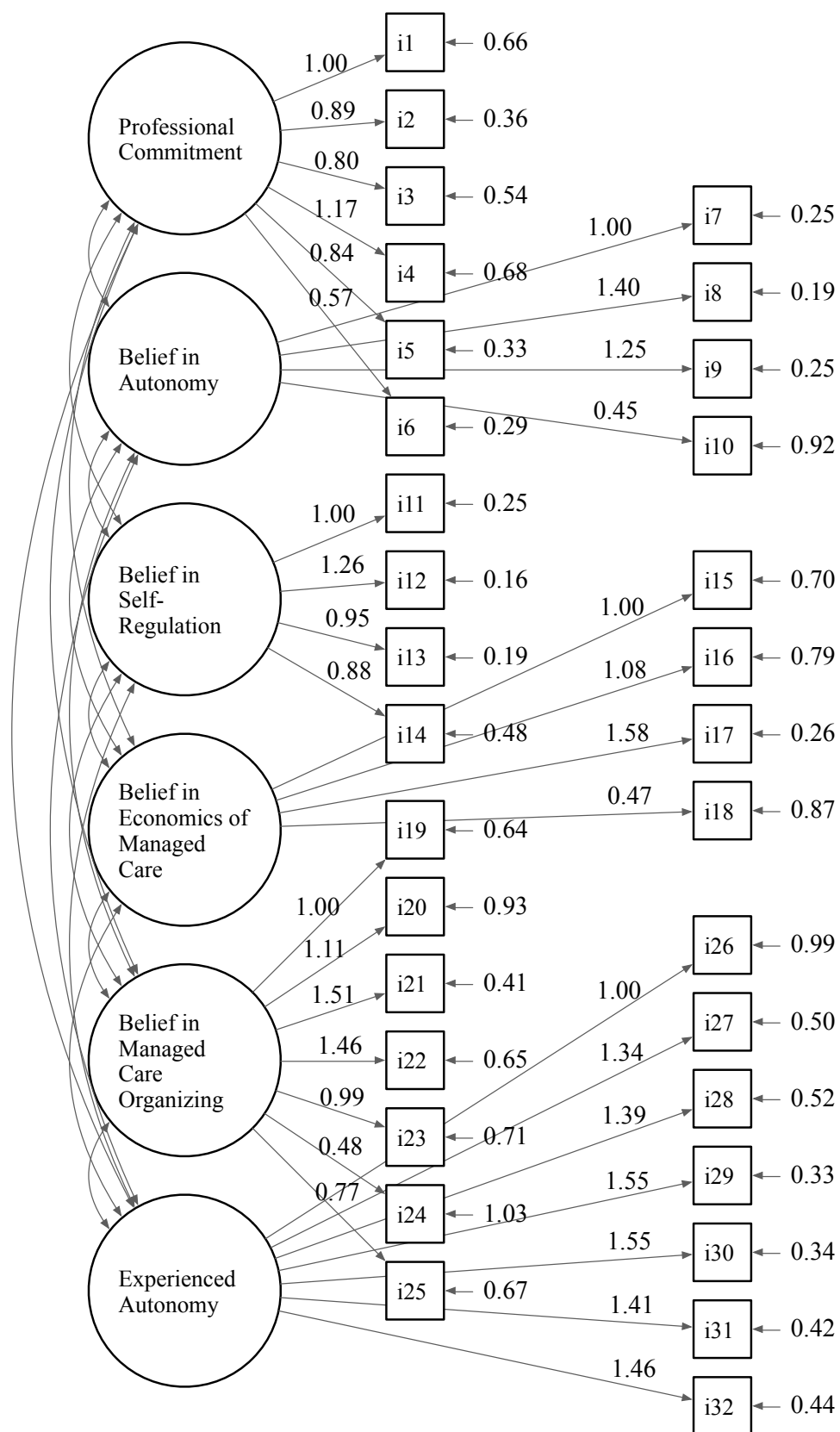


Figure 1. Six factor model with factor loadings and error variances.