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Career Resourcing and the Process of Professional Emergence

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CAREER RESOURCING AND THE PROCESS OF PROFESSIONAL EMERGENCE

ABSTRACT

We theorize a career resourcing process that explains how individuals can create a new profession. Using historical archives, we trace the emergence of health services research as a new research profession through the career actions of early practitioners. We find that career resourcing can lead to the institutionalization of a new profession by: 1) a process of accretion, where people pursuing fulfilling careers generate resources that contribute to institutionalization, or 2) institutional work to deliberately build the professional community and infrastructure. We contribute to research on institutional change by specifying career actions that can lead to the institutionalization of a new profession, and by developing theory that accounts for the motivations and the means of individuals to act in ways that result in the institutionalization of a new profession.

Careers are central to the lives of most people. A career is "an evolving sequence of a person's work experiences over time" (Arthur, Hall, & Lawrence, 1989:8). Implicit in this definition is the idea of movement and progression, as well as choices that individuals make over the course of a working life that both shape and express their interests and motivations. At the same time, careers have a collective aspect; they both reflect and are given meaning by larger social structures (Hughes, 1937). At least to some extent, career opportunities rely on institutionally-sanctioned scripts of legitimate career paths, and possible career identities are defined by occupational communities (Barley, 1989; Cappellen & Janssens, 2010; Duberley, Cohen, & Mallon, 2006). Therefore, careers have an "essential duality" (Gunz, 1989) in that they speak to both structural conditions and individual actions and outcomes. The dual nature of careers has long led scholars to speculate about a recursive connection between people's careers and institutions (Barley, 1989; Barley, 2008; Hughes, 1936; Hughes, 1937). Institutions can have a top-down effect on the types of careers people have, but because careers are so central to people's lives they can be important motivators of people's actions, including actions that result in institutional change (Barley, 1989; Jones & Dunn, 2007).

Yet, careers are far from central in contemporary theorizing about institutions, and largely absent from theory about institutional change (Barley, 1989; Barley, 2008; Jones & Dunn, 2007). Moreover, the few studies across disparate literatures that do explicitly connect careers and institutions devote more attention to understanding the top-down impacts of institutions on careers, rather than the bottom-up process by which individuals' careers can shape institutions (e.g. Cappellen & Janssens, 2010; Duberley et al., 2006; O'Mahony & Bechky, 2006; Stovel, Savage, & Bearman, 1996). Only three recent studies directly show bottom-up processes by which individuals' careers influence institutional change, looking at how the careers of college presidents (Kraatz & Moore, 2002; Kraatz, Ventresca, & Deng, 2010) and of entrepreneurial participants in the American film industry (Jones, 2001) impacted their respective organizational fields. Missing from these studies, however, is analysis of the micro-level process by which individuals initiate and create change, and the role of careers in shaping this process. As a result, we miss an opportunity to explore a potentially important set of career-related explanations about why and how individuals influence institutions, and what, precisely, they do.

To investigate the role of careers in institutional change, we develop an analytical case study of the emergence of the Health Services Research (HSR) – a new type of research profession focused on questions about healthcare cost, quality, and access that emerged in the post-WWII era. Our empirical setting allows us to examine the role of people's careers in the emergence of a new profession, an important institutional event (Scott, 2008; Suddaby & Viale, 2011).[1] Using archived interviews from an oral history project on the emergence of the HSR profession, we analyze the career actions that individuals took and how they resulted in a new

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[1] The emergence of the institutional field of HSR naturally coincided with the emergence of the profession; however, we focus our analysis on the profession, following recent work that treats professions as institutions (Adler & Kwon, 2013; Muzio, Brock, & Suddaby, 2013; Siebert, Wilson, & Hamilton, 2016).

profession, addressing the research question: What is the process by which individuals' career actions can lead to the emergence of a new profession?

We find that key individuals' career-related actions led to the emergence of a new profession through a process we call **career resourcing**. Resourcing is a general process model of how actions generate a wide range of material and symbolic resources that can support more action (Feldman, 2004; Sewell, 1992). Resourcing models are structuration models in that they describe a recursive relationship between structure and individual action (Feldman & Quick, 2009; Howard-Grenville, 2007; Wiedner, Barrett, & Oborn, 2016). Career resourcing is a process by which people's career-related actions (e.g. taking a new job, doing a research study) generate diverse assets (e.g. growing stature as a researcher) that people use to resource subsequent career actions for themselves and others (e.g. taking a more prominent job, getting a student a job). Career resourcing processes led to the emergence of health services research in two ways. First, career actions generated resources that accumulated over time, across individuals, and across generations of scholars, leading to emergence through a process of accretion. Multiple professionals acquired funding, trained students, published research, started research centers, etc. These actions, primarily oriented toward their own careers, had the effect of building infrastructure and community around health services research that is necessary for professional emergence. Second, career actions could also be explicitly oriented towards building a new profession, a form of institutional work. But even these actions were often motivated and enabled by earlier career actions that were oriented primarily towards their personal careers. It was the mix of actions oriented toward individuals' own careers and actions oriented toward institution-building that resulted in the emergence of HSR.

Our findings about career resourcing processes extend prior research by developing new theory that accounts for careers in the emergence of a new profession. In emphasizing careers, a

realm of action that is both important to individuals and institutionally meaningful, we are able to identify specific individual-level actions that have bottom-up influence on professional emergence. These career-related actions are analytically distinct from, and potentially complementary to other types of actions (e.g. identity-related actions, or communicative acts) that have been theorized as important to professional emergence (Empson, Cleaver, & Allen, 2013; Fayard, Stigliani, & Bechky, 2017; Granqvist & Laurila, 2011; Nelsen & Barley, 1997). In addition, using a resourcing lens provides theoretical explanations for why certain people act to change institutions (i.e. their motivations) and how they acquire the resources (i.e. the means) to do so. A resourcing perspective highlights the iterative cycles through which action is motivated by, and given meaning through, schemas—shared cognitive/cultural understandings. It further shows how actions are converted into resources that can accumulate over time. By addressing questions about motivation and means, our study contributes to understanding of how individual action results in the professional emergence.

THEORETICAL CONTEXT

The Role of Individuals' Careers in Professional Emergence

Professions are important institutions in contemporary society that organize and structure work (Freidson, 1994; Muzio et al., 2013; Scott, 2008; Suddaby & Viale, 2011). Accordingly, researchers have studied the creation of new professions, the formation of new professional associations, and changes in professional identities, roles, and knowledge systems as important institutional events (Anteby, Chan, & DiBenigno, 2016; Chreim, Williams, & Hinings, 2007; Dunn & Jones, 2010; Empson et al., 2013; Goodrick & Reay, 2010; Howard-Grenville, Nelson, Earle, Haack, & Young, 2017; Kyratsis, Atun, Phillips, Tracey, & George, 2017; Loewenstein, 2014; Lounsbury, 2002; McCann, Granter, Hyde, & Hassard, 2013; Siebert et al., 2016). Professions emerge through a process that includes the coalescence of a professional community

with a mandate to do a particular type of work, and the creation of institutional supports to preserve or expand this jurisdictional mandate (Bucher, 1962, 1988; Empson et al., 2013; Fayard et al., 2017; Freidson, 1994; Kyratsis et al., 2017; Nelsen & Barley, 1997). This process can take place when existing professions hive off their routine or unwanted work into a new profession, when a segment of an existing profession breaks away and forms a new profession, or when changes in technology or formal organizations create new and vacant jurisdictions (Abbott, 1988). These accounts focus on the structural conditions in which new professions emerge. Missing from these explanations is a rich account of how and why individuals create and enter these new spaces and what they actually do to establish brand new professions. In other words, this work establishes opportunity, but leaves people's motives and means unaddressed. This inattention to individuals and the processes by which they attempt to establish new professions may be due to the fact that research on professions has focused on the professions themselves as actors who engage in professionalization projects (e.g. Abbott, 1988; Dunn & Jones, 2010; Freidson, 1994; Larson, 1977; Muzio et al., 2013; Muzio & Kirkpatrick, 2011; Starr, 1982; Suddaby & Viale, 2011).

Although individuals and their careers are empirically present in accounts of emergence of new professions, their role is rarely theorized. For example, Fayard, Stigliani and Bechky (2017), in studying the emergence of the new occupation of service design, show that service designers' ethos—a combination of their values and their work practices—distinguished them from competing occupations in a way that helped create a mandate for the nascent profession. Though the theoretical emphasis of their paper is on the role of ethos in occupational emergence, they mention service designers' career experiences as a source of values and work practices underlying the distinctive ethos. In Lounsbury's (2002) work on the professionalization of finance occupations, economists developed finance as an academic field and consequently

promoted a financial logic. The source of the abstract body of knowledge that formed the basis of finance professions and financial logic is not examined, but economists' career-related actions of publishing finance research must have played a role. These studies suggest that individuals' career-related actions feature in stories of professional emergence, but as of yet are not accounted for in theory. Therefore, there is no systematic understanding of what kinds of career-related actions create new professions, why individuals act in these ways, and how they acquire the resources to accomplish professional emergence.

A Resourcing Perspective on Professional Emergence

Our data analysis led us to a resourcing perspective, as we accumulated evidence about how career actions influenced professional emergence. Resourcing is the process of transforming assets, though practice, into resources that enable actors to enact schemas (Feldman, 2004). Schemas, in turn, motivate and enable subsequent actions, in a cycle that can recursively reinforce existing structures, or be a source of endogenous structural change by building on prior actions in an ampliative and spiraling way (Feldman, 2004; Feldman & Worline, 2011; Howard-Grenville, 2007). A resourcing perspective has been primarily used for understanding how individual action and interaction effects organizational change (e.g., Feldman, 2004; Howard-Grenville, 2007; Wiedner et al., 2016); however, it is a useful general framework for understanding how actions can change any sort of structure, making it suitable for analyzing the processes linking career actions and professional emergence.

A resourcing perspective understands resources as socially constructed—created through action and valuated through schemas. Unlike most other social theories that treat resources as static assets with inherent value, a resourcing perspective conceptually distinguishes between assets, defined as tangible and intangible things that can be owned (e.g. knowledge, money, relationships), and the resources that they can become when used to enact schemas (Feldman &

Worline, 2011).[2] Schemas, i.e. shared, implicit understandings about how assets, characteristics, and behaviors are valued (Sewell, 1992), play an important role in this process as a call to attention, a motivator and guide to meaningful action, and a way of evaluating resources (Howard-Grenville, 2007). Therefore, assets take on value as resources according to schemas about an action's worth. Like similar notions of rules (Giddens, 1984; Sewell, 1992) or frameworks (Feldman & Quick, 2009), schemas are cultural tools that represent systems of belief (Sewell, 1992). Schemas are social and cultural constructions that define both the ends of action and beliefs about the rational or appropriate actions for accomplishing those ends, thereby providing motivation for these actions. In resourcing processes, schemas are invoked to motivate action and determine the value of resources-in-use. At the same time, schemas are reproduced or changed by agents' use of resources.

Resourcing is a structuration process in which agents, through actions and interactions, both draw on and enact structure, i.e. schemas and resources (Feldman, 2004). It is an explicitly agentic perspective, focusing on how actors flexibly use resources to "pursue activities in line with what they wish to make happen in the world," (Feldman & Worline, 2011: 2). Because agency implies a capacity "for desiring, for forming intentions, and for acting creatively," (Sewell, 1992: 20) agents have some discretion over which schemas to enact, generating resources that can in turn change which schemas can be enacted, or change the schemas themselves (Feldman, 2004; Howard-Grenville, 2007; Sewell, 1992). Unlike most other uses of structuration ideas; however, resourcing is heavily grounded in practice. As a result, it allows for less deliberate and more dynamic views of action and interaction, with ongoing mutual

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[2] Much research in institutional theory implicitly or explicitly treats resources as tangible and intangible things that can be owned. However, the resourcing perspective is more broadly consistent with the social constructivist ontology of institutional theory.

adjustment between resources and shared schemas that can potentially aggregate to institutional change.

A resourcing perspective has three features that serve our purpose. First, it explicitly addresses the question of how individuals acquire the means to change institutions, by generating and accumulating assets that can be used as resources through the enactment of schemas. Second, the use of schemas in a resourcing approach directly addresses the question of individuals' motivation. The shared understanding of how resources are valued guides action by providing direction and reasons to act and to choose particular actions. Finally, a resourcing perspective takes the long view. Because it traces actions, resources, and schemas over time, it encourages exploration of mechanisms to explain change that happens over generations. The continual co-creation of resources and schemas through action and interaction allows variation in action to change schemas, and also larger institutions.

DATA AND METHODS

Empirical Context

Health Services Research is "the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being" (Lohr & Steinwachs, 2002: 16). The profession of health services researcher is dedicated to studying these subjects and represents a distinctive academic sub-field. With its focus on the social organization of health care, HSR differs from the adjacent fields of public health and medical research, which focus on issues of sanitation and the epidemiological surveillance of disease prevalence, and biological bases for disease, respectively (Institute of Medicine, 1979; McCarthy & White, 2000; Viseltear, 1973). HSR emerged and was institutionalized as a profession between the 1930s and the 1990s. It was created during a period

of dramatic expansion of the American healthcare system and growing involvement of the federal government in it (Dunn & Jones, 2010; Nigam, 2013; Scott, Ruef, Mendel, & Caronna, 2000; Starr, 1982; Stevens, 2000).

Data Sources

We draw on a broad range of archival and secondary sources about the history of HSR for our analytical case study. First, we draw on a collection of archived interviews with people who played an important role in creating and institutionalizing HSR. The core of these archived interviews is a set of oral history interviews with nineteen individuals (twenty interviews) collected as part of the "History of Health Services Research Project" by the National Library of Medicine and the National Information Center for Health Services Research.[3] The oral history project was "motivated by the desire to collect the stories and experiences of innovators and leaders in the field of health services research," with the objective of documenting the emergence of Health Services Research. The archived interviews detail these individuals' roles in doing, funding, or otherwise influencing the emergence of HSR. We supplement this core set of interviews with oral history interviews with four additional people that cover similar content: an interview with John Wennberg published in *Health Affairs* (Mullan, 2004) and career history interviews with three people (Gail Wilensky, William Roper, and Bruce Vladeck) who played important roles in the establishment of HSR, conducted as part of a separate oral history project on the Health Care Financing Administration (Berkowitz, 1996, 2002; Santangelo, 1995). This gave us a core dataset of 24 interviews with 23 people who played leading roles in creating and institutionalizing HSR as a new profession. We supplement these oral histories by looking for

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[3] The full set of interviews is available at https://oculus.nlm.nih.gov/cgi/t/text/text-idx?c=nichsr;page=browse;id=navbarbrowselink;cginame=text-idx;key=interviewee

available CVs, faculty biographies, affiliations on published articles, and obituaries to triangulate the information presented about the career actions of the interviewees.

Additional data sources include 13 oral history interviews (including interviews with 11 people who were not included in our core dataset of career history interviews) about the creation of the Association for Health Services Research (AHSR) along with the transcript of a conference panel commemorating the 25th anniversary of the AHSR's founding (Blendon, 2008)[4], 17 published accounts of the of the emergence of HSR and of organizations that supported the new profession (e.g. the National Center for Health Services Research, the Robert Wood Johnson Foundation's Clinical Scholars Program) by people who created or administered them, 13 Institute of Medicine reports about HSR as a field, or on HSR topics (e.g. quality assurance), 4 secondary and commissioned histories of organizations that supported HSR, and other secondary research that touches on the history of HSR and the evolution of the American health care system more broadly post World War II (e.g. Dunn & Jones, 2010; Nigam, 2012a, 2013; Scott et al., 2000; Starr, 1982; Stevens, 2000; Timmermans & Berg, 2003; Wiener, 2000). This research was part of a larger project, drawing both on some of the same archival sources as well as content analysis of medical journals, that looked at changing logics and a shift to evidence-based medicine in American healthcare (Nigam, 2012a, b, 2013). Table 1 describes the sources used and the types of data that we were able to draw from them. Table 2 presents information about the twenty-three health services researchers included in our core set of interview data, and the role they played in institutionalizing HSR.

<center>INSERT TABLES 1 AND 2 HERE</center>

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[4] These interviews and the panel transcript are available through the link provided in Footnote 2

Data Analysis

We began our analysis with an initial interest in understanding how careers in HSR and the broad institutions of American health care co-evolved. Given this initial interest, our early analysis focused on identifying the top-down impact of institutions on the careers of health services researchers, as well as the bottom-up processes by which individuals' careers shaped institutions. This involved developing a broad institutional history of American healthcare between the 1930s and the present, and linking it with individuals' careers in HSR. This initial analysis helped us focus our research question in two ways. First, it struck us that individuals' career-related actions had important effects on institutions, and that these actions were not consistently motivated by a desire to shape institutions. We determined that this bottom-up process merited more focused attention. Second, it became clear to us that an important outcome of individuals' career actions was the emergence of HSR as a new profession. As a result, we formulated our research question about the process by which individuals' career actions can lead to the emergence of a new profession.

With this research question as a guide, we started an inductive analysis of our data. At first, we iterated between inductive coding of our data, and the construction of narrative summaries of individuals' careers (Charmaz, 2006). Both authors engaged in inductive coding of all of our data sources that could shed light on our research question. Through this process, we generated a list of first order codes that were prevalent in our data, and that reflected grounded, close-to-the-data actions and processes that were important in shaping the institutionalization of the new profession, as well as codes that could serve as indicators of, or evidence for this institutionalization. Because we were aiming to develop a process theory of how individuals institutionalize a new profession through career action, we also engaged in a narrative analysis of our data (Langley, 1999). Both authors independently created narrative summaries for the 23

people included in the 24 career history interviews in our data. For each person, we aimed to capture evidence of how their career unfolded over time, what role they played in institutionalizing the profession, processes by which their career actions or actions more broadly led to institutionalization, the motivations or rationale they gave for their various actions over time, and things that might have enabled the various career actions they engaged in.

After our initial coding and narrative analysis, we began to group together the coding from our initial analysis in order to abstract from our data. We relatively quickly identified codes that indicated institutionalization of the new profession, as well as more abstract groups of codes reflecting individuals' career actions. Iterating between grouping codes and analysis across the individual narratives to form a broader understanding of the processes at work, we also saw that individuals' iterative career actions seemed to matter, with one career action seeming to enable a subsequent career action, either their own or somebody else's. This observation led us to turn to resourcing theories as potentially relevant in addressing our research question (Feldman, 2004; Howard-Grenville, 2007; Sewell, 1992).

Sensitized by prior models of resourcing, we went back to our narrative analysis to see if a resourcing process fit the data, and to see if we could specify the steps at work. We also analyzed the narratives to see how a potential resourcing process could explain the outcome— emergence of a new profession—of interest. Using resourcing as a lens, we paid particular attention to identifying exactly how one career action enabled subsequent career actions, to evidence of the schemas that people drew on to formulate career actions, and to evidence linking resourcing to professional emergence. Table 3 presents the coding framework indicating how we abstract from our initial, grounded coding to generate a theoretical model of career resourcing. It presents codes reflecting the career actions people engaged in, the assets, i.e., potential resources,

generated through individuals' career moves, the schemas they draw on to motivate and guide action, and the emergence of the profession.

INSERT TABLE 3 HERE

Like all empirical research, our analysis involved the use of informed judgment based on imperfect data, and comes with limitations. The retrospective nature of the interviews that form the heart of our data is an important limitation (Golden, 1992). People may imperfectly recall their career actions, or what led them from one career action to the next. Given the focus of the interviews on the history of HSR, they may remember themselves playing a more heroic role, or as being more coherently and deliberately focused on creating and institutionalizing a new profession than they were at the time. Fortunately, the interviewees recounted many chance events. They describe stumbling into their HSR careers and on the people and circumstances that helped them move from one step to the next, somewhat mitigating our fears. In addition, we were careful to focus our coding and theorizing on questions that are less subject to retrospective bias, and to triangulate where possible. Career actions are perhaps least subject to bias. It is reasonable to expect people to accurately remember their career actions and histories. Moreover, we were able to use official university biographies, CVs, obituaries, IOM panel rosters, and published first-hand accounts to triangulate much of the data on individuals' career actions. Our indicators of institutionalization are also less subject to bias. We can get objective historical data on the growth in the professional infrastructure and our data offers good evidence about people's current identities and community ties.

We necessarily exercised more judgment as researchers in coding for assets and schemas. For assets, people regularly talked about what allowed them or others with whom they were connected to move from one career action to the next. This allowed us to make a judgment about what assets were mobilized as resources to enable a subsequent career action. Because our data

often included multiple people talking about one person's career action (e.g. for somebody taking a new job, the person who hired them, and the person who funded the project they joined), there is some scope for triangulation between individuals' retrospective assessments about what assets were important. For schemas, it is impossible to know the full range of schemas that might have motivated a particular career action. Nevertheless, people did discuss why they moved from one career action to the next, and they did not consistently present overly rational accounts. Our analysis of schemas in our own data was informed by a close reading of how the authors of other empirical research that used resourcing theory made judgments about schemas in their analysis (Feldman, 2004; Howard-Grenville, 2007). While imperfect, we have enough statements about individuals' own valuation of and meaning ascribed to their career actions that we are able to identify two broad types of schemas as important across our data, personal career schemas and profession-building schemas,.

FINDINGS

Figure 1 presents our model of how individuals, in crafting their own careers, can establish a new profession. The focus of our model is explaining how individuals act on institutions. Though we acknowledge that institutions also act on individuals, we have left this outside the scope of our model, given the many extant studies of institutions influencing individual action (Zietsma, Groenewegen, Logue, & Hinings, 2016). [5] The emergence of a new profession involves creating a professional community—a group of people with a distinctive identity and intellectual foundation connected by collegial ties. It also involves building an infrastructure of funding and organizations that employ or otherwise support the profession.

INSERT FIGURE 1 HERE

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[5] Although our focus is on the bottom-up processes by which people's career actions impact institutions, there is evidence suggesting a recursive relationship between career actions and institutions in our data, consistent with extant conceptual research (Barley, 1989; Jones and Dunn, 2007).

We find that individuals' career actions can establish a new profession over time through a ***career resourcing process*** – in which individuals' career actions create assets that are used as resources to enable subsequent career actions. Shared schemas, i.e. cognitive and cultural frameworks, guide how individuals mobilize and use assets as resources to engage in career actions. Career resourcing is both a temporal and a social process. It is temporal within an individual's career, in that a person's career actions can generate assets that enable his or her own later career actions. It is social in that one person's career actions can generate assets that can be used by others. Finally this social process is temporal across generations, where one person's career actions can generate assets that can be used or built upon by subsequent generations of scholars. It is the temporal and social process of career resourcing that gradually builds up a professional community, and creates a professional infrastructure and other assets that over time enable members of this community to have viable and productive careers that perpetuate the new profession.

Career resourcing enabled a new profession to emerge, first, by accretion. We define accretion as the cumulative effect of diverse peoples' career actions on professional emergence. The temporal and social processes of career resourcing are the main mechanism driving accretion, and the career actions are often motivated by personal career concerns, rather than institution-building. In publishing their work, articulating their own identities, and mentoring others, individuals' career actions generated assets that they and others could use later to make possible subsequent career actions. These career actions, which on their own were not institutionally significant events, had a cumulative effect over the course of individual careers, across individuals, and across generations of scholars that contributed to professional emergence. Second, career actions (e.g. creating a new Ph.D. program, founding a new specialized journal and serving as its editor) can lead to emergence through a people's deliberate efforts to build a

new profession, a form of institutional work. In this process, career actions can be oriented either or both towards people's personal careers and towards building professional community and infrastructure.

In the following sections, we present evidence supporting the model. We start with a description of the profession. We then expand on the career resourcing model, illustrating different types of actions and assets. Next, we describe the schemas we found that provided the motivation for individuals' career actions. Finally, we show how career resourcing processes established HSR.

Emergence of the HSR Profession

Table 4 documents the emergence of a new profession between the 1930s and the late 1990s. The table shows that a professional community and infrastructure developed over a seven-decade time period.

INSERT TABLE 4 HERE

Professional Community. We found multiple examples of people describing the absence of a professional community in early decades, contrasting it with a vibrant community later. For example, Bob Brook notes "when I became a health services researcher, there was no field. So the first contribution of health services research is that there is really now a field of health services research (Muldoon, 2008i)." Focusing on the emergence of a professional community, he recalls his experience in the 1960s:

> *I remember my exit interview with the dean of the medical school at Hopkins who would see everybody. I don't know how much time he spent with everybody. But when I left medical school, I said, 'I'm going to be a generalist and probably go into public health or health services.' The conversation ended when I said that. He had no advice, just said goodbye. It was exactly a two-second conversation. So you remember those kinds of events. And we would worry… 'Would anyone ever hire us [MDs with training in health services research] with this kind of weird mixed training? (Brown, 2003b).*

He contrasts this early lack of identity and recognition with the present "Well, we have now established ourselves as a legitimate part of the medical research establishment, and there are now a number of former clinical scholars [a fellowship program that trains MD's in HSR] who are now chiefs of medicine and deans (Brown, 2003b)."

Gorden DeFriese (1992) describes the emergence of a distinctive intellectual foundation for HSR in the journal *Health Services Research*. DeFriese is a medical sociologist who directed the University of North Carolina's HSR center. He describes the new profession's core intellectual foundation—its abstract body of knowledge—in reviewing three edited books, which together synthesize decades of research on the major topics of the field. He notes that the books "should belong to every person who calls him/herself a 'health services researcher,'" adding that "combined they constitute what I would call 'a five-inch, minimum-standard bookshelf' on health services research" (583).

Merwyn Greenlink describes the emergence of a sense of community at a panel celebrating the 25th anniversary of AHSR's founding. Greenlick completed a Ph.D. in HSR in the 1960s. Greenlick recounts:

> *We were really in the very first generation of people trained specifically in the field of health services research... What I always missed was a sense of community as a worker in the field of health services research. And why I was so interested in starting this organization was to build that sense of community among health services researchers.... I mean, I had 300 people working for me but in terms of the field, it was lonely... I'm really happy to see that it is not an issue so much anymore. We do have a community and it is a healthy community and it is a vibrant community and it is very important (Blendon, 2008).*

Professional Infrastructure. The emergence of a professional community for HSR was accompanied by the growth of a professional infrastructure, including an academic infrastructure, funding infrastructure, and field-level infrastructure of supporting organizations. The academic infrastructure of university departments, HSR positions, and journals began to emerge in the late 1960s. The AHSR was founded in 1981 as a professional association for HSR.

A funding infrastructure emerged concurrently. While there was ad-hoc funding for health services-type research since the early 20th century, federal funding began in the 1950s and expanded through the 1960s (Flook, 1969; Flook & Sanazaro, 1973; Gray, Gusmano, & Collins, 2003). Finally, institutionalization of the new profession came with the growth of a broader field-level infrastructure that included policy-makers that commission and use HSR (Gray, 1992; Gray et al., 2003; Mullan, 2004; Obama, 2016; Roper, Winkenwerder, Hackbarth, & Krakauer, 1988; Wilensky, 1997). This field-level infrastructure included the creation of the National Center for Health Services Research as a dedicated agency in the federal government in 1968, and its replacement with the Agency for Health Care Policy and Research in 1989. It also includes a host of organizations that employ people to do and interpret HSR, including a range of government agencies, the American Hospital Association, the American Medical Association, hospitals, insurers, pharmaceuticals companies, and others (Institute of Medicine, 1995).

Generating career resources: The Social Process of Career Resourcing

We find that the established profession described in the previous section came to be largely through the career actions of individuals and the resources created through the actions. Figure 2 presents our model of the career resourcing process. Consistent with other types of resourcing processes, we theorize a process by which people's career actions generate assets, i.e. potential resources. Schemas shape how people mobilize and use assets as resources to enable subsequent career actions. We theorize career resourcing as a general process that allows for a wide range of permutations. These permutations involve individuals engaging in different types of career actions that can generate different types of assets. As indicated in Figure 2, career resourcing processes can involve three forms of career action: job moves, knowledge production, and mentoring. Job moves involve actions such as getting education and training, taking jobs, and taking on advisory or service roles. Producing knowledge involves actions such as doing a

study, publishing findings, and getting research funding. Mentoring includes actions to train

protégés, hire people, sponsor people for jobs, and sponsor them for research funding. The

different types of career actions are interconnected in practice. For example, one person's action

in mentoring a protégé (e.g. by helping them find a job), will coincide with a job move on the

protégé's part (e.g. taking the sponsored job).

INSERT FIGURE 2 HERE

Career actions have the potential to generate assets: stature, knowledge, material, and

community assets. Stature includes formal positional authority, reputation, or experience that

leads others to assume a level of expertise. Knowledge assets include ideas, empirical findings,

datasets, and methodological tools. Material assets involve access to funding. Community assets

include relationships as well as individuals' intellectual interests and professional identity.

Individuals use these various assets as resources to enable subsequent career actions. Thus, a

career action (e.g. knowledge production through researching and publishing a new

methodological tool), can generate assets (e.g. a published methodological tool) that can be used

as a resource to enable subsequent career actions (e.g. another researcher engaging in knowledge

production that uses the published methodological tool). With different possible combinations of

career actions and assets, career resourcing is a general process that is flexible enough to

meaningfully incorporate individuals' complex and evolving careers.

Job moves generate resources. Job moves include taking a job in an organization, taking

on a job as a trainee (e.g. a Ph.D. student), and taking on an advisory or service role (e.g. serving

on the NIH HSR Study Section). Herbert Klarman's career illustrates how early job moves can

set in motion career resourcing processes. Klarman's early job moves earning both his

undergraduate degree and Ph.D. in economics from the mid-1930s to the early 1940s helped him

generate stature through socially recognized expertise in economics, and community assets

through collegial ties to other economists. Klarman took a class with Milton Friedman when he was an undergraduate, and met Friedman again when he took a faculty job at the University of Wisconsin in 1939, the same year that Klarman went there for his Ph.D.

These stature and community assets became resources when they were used to get Klarman into a job in the office of the Surgeon General of the Army during World War II. Klarman recalls wanting to do something during the war that would utilize his training, "One day, on a Saturday I remember, I called the Pentagon and said, 'I have these credentials. Is there anything I can do about my assignment when I go into the Army?'" (Berkowitz, 1998g). Eli Ginzberg—the chief logistical advisor to the Surgeon General of the Army—describes how he came to hire Klarman through Milton Friedman:

> *I had a young fellow that I brought into the Army who later became a very good health economist, Herbert Klarman...I found him through Milton. I ran into Milton in World War II in Washington and I said, "You have to do me a favor because I'm stuck and I just need to get somebody in the office who's been trained in economics." Milton said, "I think I've got the guy for you. He was a B+ student of mine." And I said, "Milton, your B+ student is good enough for me. For me it would be an A... So I got him (Berkowitz, 1998f).*

Klarman's assets became resources when they enabled his subsequent career action—taking a job with Ginzberg that used his economics training. This move was possible because of Freidman and Ginzberg's career actions in mentoring Klarman. Klarman's job move to the office of the surgeon general of the army allowed him to further accumulate assets, including stature from specialized expertise in health economics, and community assets in the form of a tie with Ginzberg.

After World War II, Klarman took a job working on income tax policy with the National Income Division. He recounts: "All the judgments, all the theoretical decisions had been made, and all I was doing was just a lot of number crunching, so I didn't find that very interesting. It was dull, it was boring…" (Berkowitz, 1998g). Unsatisfied with his job, he goes on to recount

how his tie to Ginzberg helped get him out of the job and pulled him into a career in health services, "After a year, I had the opportunity to go to New York where again Eli was very helpful in getting me a job at Brooklyn College. But Eli also didn't quite let go of me, because while I was at Brooklyn College, I was also helping him on a nursing study" (Berkowitz, 1998g). His assets, then, were used as resources that enabled both a subsequent job move, to Brooklyn College, and subsequent actions to produce knowledge about nursing, thus allowing him to get out of a boring job and move into academia. Through this nursing study, he further expanded his community assets, meeting the head of the Hospital Council of New York. This enabled subsequent job moves, including two time periods working at the Hospital Council of New York between 1949 and 1962, where he did and published studies that helped him further gain stature as a health economist and health services researcher, allowing him to move into a job as a Professor at Johns Hopkins in 1962.

Stuart Altman recounts the process by which his early job moves created a resourcing process that pulled him into playing a political role as a senior health advisor in the Department of Health, Education and Welfare (HEW). After his Ph.D. in economics in 1964, where his research focused on women's participation in labor markets, Altman took a job as a labor economist on a project in the Pentagon focused on creating a voluntary army. Through this job, he developed community assets: a tie to his boss, Bill Gorham, and to the group of economists who worked with him. Pursuing his evolving career interests as a researcher, Altman decided that he wanted to try academia, taking a job in the economics department at Brown University in 1966, where he continued to do research on military issues. However, the community assets he developed through his prior job moves—and mentoring on the part of his old colleagues from the Pentagon—pulled him away from researching military issues, and into doing health care research. Altman recounts:

[the President's office] asked Bill Gorham, who had been my boss, to become the Assistant Secretary for planning and evaluation at HEW. He took with him four or five of the senior economists and analysts from the Pentagon to staff this new office… Many of my associates from the Pentagon had moved over to HEW (Brown, 2004b).

Altman's ties to people who were now working in HEW, combined with the expertise he developed from doing a Ph.D. dissertation on married women in the workforce, became resources that pulled him into studying health care issues in 1970.

During my stay at Brown, my friends in HEW called me and said, "You know, we've got a problem with nurses in the labor market. There's the Nurse Training Act. You know all about women in the labor force. Come down and help us." Being a good academic, I came down. I knew absolutely nothing about nursing, I knew nothing about health care, but I knew enough to say, "I need a grant in order to study this problem." I began to look into the supply of nurses, and that was my introduction to health care (Brown, 2004b).

This career action to produce knowledge—doing a nursing study—further expanded Altman's assets, developing stature, in the form of emerging expertise doing health economics. Altman's accumulated assets were later mobilized as resources when one of his ties from the Pentagon who had a staff position in HEW pulled him into a political role, getting him appointed as Deputy Assistant Secretary for Health in 1971. In his five years in government, Altman funded HSR projects and investigators, and used the knowledge assets produced by other health services researchers to communicate with policy makers. He came to identify himself as part of the HSR community, where he made his subsequent career.

Knowledge production generates resources. Knowledge production involves career actions to create and publish knowledge. It includes actions doing a study, getting funding for a study, and publishing the resulting work. The RAND Health Insurance Experiment (HIE) offers a vivid example of how career resourcing processes can follow from career actions to produce knowledge. The HIE was a large social experiment that aimed to measure the effect of different forms of health insurance on health services use and health outcomes. Joe Newhouse, who was

the principal investigator on the HIE, describes how it first started as a career action to produce

knowledge in the early 1970s:

> *I had submitted a grant to the National Center for Health Services Research, which was ultimately funded, to study the question of whether and how utilization responded to insurance from non-experimental or observational data. One of the economists at the Office of Economic Opportunity saw that and suggested to me that I might want to think about the desirability and feasibility of an experiment (Berkowitz, 1998i).*

As a large funded project, the HIE generated material assets, which Newhouse used as

resources to hire people, enabling other people's career actions. Robert Brook recounts how his

own expertise drew him into working on the HIE as a consultant:

> *When I was in the government, the health insurance experiment was beginning and there was nobody in the country, literally, at that time that understood anything about measuring health status or quality of care, and the health insurance experiment needed that methodology... Joe Newhouse actually visited me while I was in the government, and I got permission... to work with them while I was still in the government (Brown, 2003b).*

Brooks goes on to describe how the assets he and Newhouse accumulated up to and after

the move to RAND enabled Brooks' subsequent career actions to produce knowledge. Brook

explains that at the time there were no good, validated measures of health, and that he wanted to

create measures that would withstand scientific scrutiny:

> *And what was nice about Joe was that he gave me more and more of the budget to do this. I don't know how the budget finally divided up, but I suspect that of the analytical budget and the implementation budget, other than the insurance premiums we paid, I probably wound up with 80 percent of the budget. And Joe, to his credit, really understood that that was going to be the key outcome here...All the methods that we developed to measure quality, health status, and others are the origin of the various forms that exist today (Brown, 2003b).*

John Ware, who started at RAND out of his Ph.D., describes how working for the HIE

allowed him gain stature as a prominent health services researcher, commenting, "We all came

out of RAND with some name recognition from these highly visible studies" (Berkowitz,

1998h). Kathy Lohr, who completed her Ph.D. while working at RAND, describes how the HIE

helped develop community resources. Recounting her decade long career at RAND, she notes:

> *It was great when it was the Health Insurance Experiment because these were people I'd essentially known for four years. We had very close ties, personal and professional, and it was easy to work with them. There are still a number of people dating from way back then who are very close personal friends (Berkowitz, 1998j).*

Taken together, these accounts explain how Newhouse's initial career action to produce

knowledge by conceptualizing and getting funding for the RAND HIE set in motion career

resourcing processes involving multiple people and generating a wide range of assets.

Newhouse's career action generated material assets that were used as resources to create jobs for

Brook, Ware, Lohr, and others, who then produced measures of health and of medical outcomes

as well as major findings and other knowledge assets. These career actions producing knowledge

together generated community assets, such as close ties and friendships. Finally, the job moves

into the health insurance experiment and the knowledge-building there generated status from

being associated with important scientific advances. All of these assets were used as resources to

enable their own or others' subsequent career actions.

Mentoring generates resources. We identified mentoring as a third form of career action.

Mentoring includes a range of activities, such as working with students to shape their intellectual

development, recommending a protégé to somebody who may hire them for a job, and

sponsoring somebody for research funding. The examples discussed above include a number of

examples of mentoring, including Eli Ginzberg mentoring Herbert Klarman by hiring him,

getting him a job at Brooklyn College, and pulling him onto a large research project, and Stuart

Altman's former colleague from the Pentagon sponsoring him for a political job in HEW.

Mentoring, as a relationship that promotes a protégé's intellectual development, can help

protégés accumulate knowledge assets. Brook, for instance, describes Kerr White as a mentor

who helped him develop intellectually while he was a medical student in the late 1960s "Kerr actually spent individual time and really went over great books and articles that had appeared in this field. He would carve time out of his busy schedule, 45 minutes to an hour once a week, for many weeks to discuss them" (Brown, 2003b). In recounting his own efforts to create tools for measuring health and health care quality while working on the health insurance experiment, Brook describes how his actions to produce knowledge were enabled by White's career actions mentoring him:

> *I told Joe [Newhouse] that the way we ought to measure health is conceptually... the WHO definition, which Kerr White had spent hours telling me about, and we ought to measure positive and negative mental, physical, and social health. Medicine ought to be about positive mental and physical health. Well, nobody had ever tried to measure that before (Brown, 2003b).*

Mentoring could also involve helping others get financial resources to do research, enabling their subsequent career actions to produce knowledge. Joe Newhouse recalls how Stuart Altman helped sponsor him for funding, allowing the RAND HIE to proceed, stating:

> *[Altman] was Deputy Assistant Secretary for Health... at the time that the experiment was transferred [from a federal agency that was closing down to HEW]. The experiment was controversial in a number of quarters, and at that point it was very controversial in the right wing of the Republican Party...There was enough controversy that Stuart decided he would have an independent review panel. We were now two years past the initial award...and there was a decision to be made as to whether we should go forward... That decision was ultimately yes, we should go ahead. Stuart was quite central in that decision (Berkowitz, 1998i).*

Summary. Taken together, the career actions (job moves, knowledge production, and mentoring) in conjunction with assets they generate (stature, knowledge, material, and community assets) allow us to theorize career resourcing as a general process with a wide range of specific permutations. The variety of permutations makes the career resourcing process flexible enough to model evolving and complicated careers. In addition, it helps explain how this simple process can have complex effects. Table 5 presents additional examples of the career resourcing process that we theorize.

INSERT TABLE 5 HERE

In analyzing the data, we note that career resourcing processes take a dynamic view of resources. Instead of being static enablers for action, resources are created through action, and can evolve and accumulate through iterative actions over time and across individuals.

Schemas in Career Resourcing Processes

Our core argument is that individuals' career actions can lead to the emergence of a new profession through a process of career resourcing. The literature on resourcing emphasizes that schemas motivate and justify the actions people engage in, by providing a shared understanding of how actions and resources should be valued (Feldman, 2004; Feldman & Orlikowski, 2011; Howard-Grenville, 2007). Focusing specifically on career resourcing processes, we identify two types of schemas that guided people's actions: personal career schemas and profession-building schemas.

Personal career schemas are shared understandings of the sorts of career actions that lead to a fulfilling and productive career. In our data, these included concerns that were specific to the profession (such as doing high-quality research for academics), but also general career concerns (such as pursuing advancement, or taking jobs at prestigious employers). People draw on personal career schemas to navigate their careers. This does not imply that people had their careers deliberately mapped out. Rather, it involves a process by which schemas guide emergent career actions that unfold through a mix of chance events and more deliberate plans.

A number of the examples discussed above highlight the importance of personal career schemas in shaping individuals' career resourcing process. In expressing a desire to use his economics training during World War II, and the desire to get out of a boring job afterward, Klarman indicated that his desire to do research that he found interesting was one factor that shaped both his career actions and how he drew on and mobilized the assets accumulated

through prior career moves. The schema of "do high-quality, interesting research" appeared a number of times in the data, and is a widely understood way to have a fulfilling and productive career for academic researchers, i.e. a personal career schema that motivates action. In drawing on this schema to transition to academia, Klarman could activate his accumulated knowledge resources from his economics training. In making the choice to leave the Pentagon and go into academia, and then later to agree to do the nursing study because he was "being a good academic," Altman's career actions were similarly shaped, at least in part, by the schema of doing high-quality research. Lohr highlights a more general personal career schema of "jobs with prestigious employers are desirable" in discussing why she took a job at RAND:

> So out of the blue I get a call from this Bob Brook, whom I do not know from
> Adam, who says would I come, please, interview with him, and he explained who
> he was… About a day later I had a phone call from the personnel office at RAND
> asking if I would take this job with Bob. I was just astounded, because it truly
> came out of the blue. I said I needed a day or so to think about it, but, having been
> born and raised in southern California, I had heard about the RAND Corporation
> and it was this think tank where only the best and the brightest went. My general
> view was that no one in their right mind turns down a job offer out of the blue
> from the RAND Corporation, so I took it (Berkowitz, 1998j).

Another general career schema invoked by the interviewees was that of public service as an important component of a fulfilling career, based on the idea that career motivation can involve serving a larger public purpose (Wrzesniewski, 2003). Klarman's highlighting of his economics credentials when entering Army service was a way of motivating and justifying a job move into the Surgeon General's office during World War II, a move that would use his training to serve a larger public purpose (Berkowitz 1998d). Similarly, Ginzberg invokes a public service schema in justifying a return to HSR after leaving it post-WWII to work on his primary human resources research interests:

> So I only went back into the health thing in a big way after Medicare and Medicaid, after
> 1965, because I realized that with my "unique" background-and it was a unique
> background-at that point I had something to contribute…I cannot ignore the fact that I

had the greatest experience of almost anybody-not almost, of anybody in the United States-with big medical systems (Berkowitz, 1998f).

In each of these cases, personal career schemas shaped what career actions individuals engaged in and why, including how they drew on and used the assets they accumulated through their prior career actions. While these actions were deliberately oriented towards having a fulfilling career, they were not necessarily deliberately targeted at profession-building, and in many cases (e.g. Milton Freidman sponsoring Herbert Klarman for a job) were clearly not.

In contrast, people sometimes suggested that profession-building schemas informed their career actions, making them a form of institutional work, i.e. actions deliberately aimed at institutions. Kerr White was perhaps the most explicit in recounting profession-building schemas that drove his career resourcing process. As he came to embrace a HSR identity, he recounts acting in ways that would explicitly advance the emerging profession. White's recounting of his role on the NIH Health Services Research Study Section suggests that he drew on profession-building schemas about developing a distinctive identity for the fledgling profession. He recounts how he and others lobbied for the 'Hospital Facilities Research' study section to be renamed the 'Health Services Research' study section in order to reflect a broader concern with population-based approaches to studying medical care (McCarthy & White, 2000). Further emphasizing his orientation towards establishing the profession, he invokes a schema of "attracting new members" when performing sponsoring career actions:

> *When I became chair of the study section...I decided we should try to put our new field on the academic map...This meant building up an understanding of the field and making it visible to a wide variety of potential stakeholders. So we introduced programs such as Young Investigator Awards and funding for university-based Health Services Research Centers. (Berkowitz, 1998k).*

He elsewhere notes:

> *The Health Services Research study section adopted a policy of making site visits to many initial grant applicants to spread the gospel. These 'evangelical' site*

visits... were designed to help young investigators (and some not so young) to get started in this new field of health services research (McCarthy & White, 2000: 384).

Others similarly recount that White's desire for a distinctive professional identity and infrastructure guided his actions both in chairing the NIH study section and in creating an HSR department at Hopkins (Berkowitz, 1998d, g).

The personal career and profession-building schemas underlying and supporting these career actions shaped how people used resources generated through their career actions in order to establish the profession. Acting on the basis of schemas that reflect widely held values about good careers or about successful professions enabled the use of the resulting assets as resources in ways that led to the emergence of HSR as a profession. Table 6 presents additional examples of the use of personal career and profession-building schemas in career resourcing processes.

INSERT TABLE 6 HERE

While personal career and profession-building schemas are analytically distinct, they are interconnected and often combined in practice. Career actions oriented deliberately toward profession-building might also have been motivated by personal career concerns at the same time. The prestige of Johns Hopkins gave White a more prominent platform to perform institutional work, with White noting that "you can probably say things from Hopkins that you can't say from Vermont, or you can say the same sort of things but your colleagues pay more attention when you come from Hopkins" (Berkowitz, 1998k).This move was also consistent with the personal career schema of preferring jobs with prestigious employers. Based on either or both types of schemas underlying the job move, White's move to Johns Hopkins created resources that could be used for future career actions and institution-building. Similarly, Brook's knowledge production actions to produce measures for quality or appropriate care, could reasonably have been informed both by personal career schemas (e.g. conduct high-quality,

interesting research) and profession-building schemas (e.g. solidify intellectual foundation of new profession).

Moreover, individuals' career actions oriented toward profession-building were almost always preceded and enabled by career actions guided primarily by personal-career oriented schemas earlier in their careers. For example, Newhouse describes doing the Health Insurance Experiment as a career action that pulled him into health. He recounts that he always intended to be a generalist, i.e. applying economic principles to study a wide range of empirical contexts, adding "had I not, I think, fallen into the RAND Health Insurance Experiment, I don't know what would have happened. But after I got involved with that, health became a full-time enterprise for many years. In effect, I had dug myself so far into health economics that I was never going to escape" (Berkowitz, 1998i). In short, a career action pulled him into making a career in health, which led him to later play a role to more deliberately work to advance HSR as a profession, including serving as president of the AHSR and creating a series of new health-focused doctoral programs in the social sciences at Harvard. Altman's move to take on a political appointment as Deputy Assistant Secretary for Health, just one year after he initiated his first research study in health care, offers yet another example of job moves driven by a personal career schema that enabled later institutional work. His political appointment was an outcome of his prior career resourcing processes, and was not motivated by profession-building schemas. Despite his nursing study, he recounts his appointment by recalling "I had no background in health care. I had no past. I just had the present and the future" (Brown, 2004b). Taking a prominent political appointment, however, would certainly be consistent with personal career schemas emphasizing public service generally, or taking on high status appointments. In his job in government, however, he began to engage in more deliberate institutional work to fund, commission, and use health services research as part of his job, and later played a leading role in creating the AHSR.

Using career resources: Establishing a new profession

As discussed earlier (and shown in Figure 1), we identify two processes by which career resourcing can lead to professional emergence: accretion and deliberate institutional work. Accretion generally involved career actions that were shaped by personal career schemas, while deliberate institutional work was clearly driven by profession-building schemas. However, even institutional work explicitly oriented toward profession-building was often enabled by assets accumulated through prior actions oriented towards their personal careers.

Professional Emergence through Accretion. The emergence of HSR through a bottom-up process of accretion happened as individuals' career resourcing processes gradually created the identity, intellectual foundation, and relationships that make up a professional community as well a supporting infrastructure. Accretion is a temporal and social process of cumulative combination (Loewenstein, Ocasio, & Jones, 2012; Nigam & Ocasio, 2010; Ocasio, Loewenstein, & Nigam, 2015), where layers of institutional meaning build into collective structure. In our data, career actions, through the engine of resourcing, accumulate meaning within individual's careers, across multiple individuals' careers, and over generations, and build into a structured profession. We include a process of accretion in our theory about professional emergence, because the assets generated through specific career actions (e.g. protégés who are able to advance in their careers, publications that advance new frameworks, new methodological tools for measuring quality) are not necessarily indicators of professional establishment by themselves, nor were they motivated by profession-building schemas. The accumulation of these assets over time, however, can result in the emergence and maintenance of a professional community and infrastructure.

First, career resourcing processes could accumulate over the duration of an individual's career in ways that helped them identify with the new profession, form social ties with others, or

develop a distinctive intellectual contribution, ultimately contributing to the construction of professional community and infrastructure. For example, the researchers in our study frequently described how they came to form an HSR identity as an outcome of actions oriented toward their personal careers in other professions. Mechanic describes how his job moves from a Sociology department at the University of Wisconsin to an interdisciplinary center that he created at Rutgers led him to embrace an HSR identity over time. Describing his time at Wisconsin, he comments: "In those days I saw myself primarily as a sociologist. I was a person who could play in both fields. I was respected as a sociologist, and, also, I was having some impact on health and health services research…But, I still saw myself and ran my program out of the sociology department." He goes on to describes how his later job moves motivated an identity shift to one that is more inclusive of HSR, "I think [how I see myself has] changed more dramatically since I moved out of the sociology department." (Brown, 2004a). Mechanic never frames his career actions in terms of an effort to create or advance a new profession when describing his adoption of an HSR identity; instead, he just discusses his personal career interests and experiences. Moreover, in noting that he only came to embrace an HSR identity after he made substantial research contributions to HSR, Mechanic strongly suggests that a new identity is an outcome of the accumulation of meaning around his work and research community, and how it fit with an HSR identity, over the duration of his career.

A collective professional identity can also emerge through accretion over the course of individual careers as people who develop high stature also publicly signal their association with an emerging profession. They signal their association by taking on service roles in organizations specific to the profession, or job positions and titles consistent with the new profession. In the 1950s and 1960s, Whites' job moves took him from a medical school affiliation at UNC to a position in a "Department of Community Medicine and Epidemiology" at the University of

Vermont to a role as Full Professor and head of a newly created "Department of Medical Care and Hospitals" in a School of Public Health at Johns Hopkins, which was renamed during his tenure as the "Department of Health Services Research Administration" (Berkowitz, 1998k). These changing roles, which were possible because of White's increasing stature as a researcher, publicly signaled his affiliation with HSR as a profession.

Second, career resourcing processes across peoples' careers helped build the HSR profession when their career actions brought others with similar interests into the same physical and intellectual space. The unlikely coalescence of the group of researchers involved with the RAND Health Insurance Experiment provides a vivid example of how career resourcing across people creates relationships and builds professional community. Without a focus on career resourcing, especially actions motivated by personal career concerns, we would not be able to explain how members of the RAND Health Insurance Experiment knew each other, or formed a shared identity and community. Newhouse was an economist who had the intention while he was finishing his Ph.D. of being a general economist on the faculty at Harvard. Brook was a doctor interested in public health or Health Services Research, in part because he was a protégé of White's. Ware was a psychometrician who early in his career started working on health, but who worked with leading luminaries in the emerging field of psychometrics during his PhD. Lohr had an MA in education, and only did her PhD after working on the Health Insurance Experiment. Given their interests, they would not have had interpersonal relationships if their job moves and other career actions had not brought them together. They would not be engaging in a common intellectual endeavor if their career actions had not brought them to a point where they had the interests and skills to work together and jobs on the same funded project at the same institution.

Third, accretion across generations is also a way that individual career actions aggregate into professional emergence. Early health services researchers described subscribing to an HSR

identity later in their careers, often as the label and identity were first being articulated. Later health services researchers, such as Linda Aiken, were able to take on an HSR identity from the beginning of their careers. This is a cross-generational process that builds on the career actions of people like her mentor, David Mechanic, who signaled his affiliation with the emerging profession by serving on the Institute of Medicine's Committee on Health Services Research (Institute of Medicine, 1979). Mechanic's identity-building actions, which emerged over the duration of his career, in turn layered onto earlier actions by Klarman, White, and Flagle in the 1950s and early 1960s who all signaled their association with the newly labelled profession through their academic titles and membership on the NIH Health Services Research Study Section in the 1960s (Berkowitz, 1998d, g, k; McCarthy & White, 2000).

Career resourcing also enabled the accretion of institutional meaning around an intellectual foundation for HSR through the accumulation of work over the course of individual careers, across scholars in a community, and across generations of scholars. The knowledge assets produced through a career resourcing process supported the creation of a distinctive identity for HSR via the accumulation of major studies, methods, and theoretical frameworks. Though the people in our data often discussed these studies primarily in terms of schemas about their individual careers in academic research, the studies produced knowledge that people collectively came to understand as addressing the distinctive questions and interests of HSR.

For example, Avedis Donabedian developed conceptual frameworks for thinking about the system of health care delivery in the 1980s over the duration of his career. Donabedian describes his career as one where he liked to work alone, and simply see how things fit together:

> Basically I was trying to put things together. I had no background in psychology, in sociology. I had no background in any of the basic disciplines except medicine. Therefore I had to invent things of my own. It was a lot of fun. I had a wonderful time. Not knowing my limitations, simply saying, "This fits with this, this fits with that. Hey, I can see relationships here where people haven't seen the

relationships. If I put this this way it would begin to work. If I arrange it that way it makes sense." It was this kind of seat-of-the-pants type exploration (Berkowitz, 1998a).

Across generations of scholars, the ideas he produced became important to creating the intellectual foundations for the new profession – to the point where his conceptual frameworks have consistently been used to define the nature of HSR as a distinct area of inquiry (Institute of Medicine, 1979; Lohr & Steinwachs, 2002). Robert Brook further described the cumulative impact of individuals' career actions across generations of scholars to produce knowledge in a panel discussion marking the 25th anniversary of the creation of the Association for Health Services Research. The panel was made up of luminaries in the new profession, speaking primarily to an audience of more junior scholars. Brooks notes:

> *[Over] the last 25 years because of the people up here, we have actually been able to get all the easy work done. When we began the health insurance experiment, nobody knew how to measure health… Now, nobody would even question whether you can measure health… Nobody really knew how to apply economic modeling to health care very well. Now, again, we are at a stage where there is not much more to do with the econometrics or statistics in this field. When I began and when people began up here, nobody could measure quality of care. We can measure quality of care, so we are leaving the new generation at this moment with all of these tools so that can be used (Blendon, 2008).*

It should be noted that a single career action could contribute to multiple aspects of professional community or infrastructure. For example, Mechanic's career move to an interdisciplinary center at Rutgers contributed to the formation of professional identity by his own evolution toward an HSR identity and public signaling of the change; however, it also contributed to the formation of relationships as he came to know and collaborate with people across disciplinary boundaries who shared his interest in health services problems. Though it is not possible to consistently tease these effects apart, accretion processes allow for accumulation of assets not only from multiple sources, but also toward multiple ends. Therefore, individuals, building on their own prior actions, others' actions, and preceding generations' actions add

layers of meaning to multiple schemas (e.g. about fulfilling or successful careers and about the distinctiveness and value of HSR as a profession) at once.

Deliberate Institutional Work to Advance the New Profession. Complementing this process of accretion, we also found a more direct process of creation and institutionalization of HSR, i.e. deliberate institutional work generated by career actions. This work was explicitly motivated and granted value by profession-building schemas, and involved deliberate career actions that constituted the profession. Individuals in our analysis undertook a range of actions in order to explicitly support the emerging HSR profession, including creating a professional community by mentoring people to draw them into the field or by fostering a sense of community, and developing a professional infrastructure by taking leadership positions in academic departments and centers, professional associations, academic journals, and federal agencies, or by developing training programs. For example, David Mechanic and Robert Brook each engaged in institutional work when they created and directed training programs for potential health services researchers at the University of Wisconsin the UCLA. Brook recounts that he wrote the training grant "because there was nobody else to do it, and literally, because the field was empty at that time" (Brown, 2003b). Kerr White, Stuart Altman, Joe Newhouse, and Linda Aiken engaged in institutional work when they built new HSR departments or centers at, respectively, at Johns Hopkins University, Brandeis University, Harvard University, and the University of Pennsylvania. In each case, they took a job that involved creating a new center with the intention of building the profession. Each of these actions directly constituted elements of the emerging profession.

In our data, we also observed a few instances of non-career-related institutional work that were resourced by earlier career actions. A notable example is the formation of the Association for Health Services Research (AHSR), the professional association for health services

researchers. Deliberate institutional work to form the AHSR was undertaken by five leading health services researchers, including Stuart Altman, Clif Gaus, and Bob Brook, with the explicit intent to further institutionalize HSR as a profession. The AHSR emerged through informal conversations between people who had relationships created through their prior career actions. As John Ware recounts, "I remember I was at one of the first discussions in the living room of Bob Brook's house in Pacific Palisades when everyone was in the room talking about creating an association that would be a professional group and maybe a lobbying organization" (Berkowitz, 1998h). Accumulated community and material assets also allowed proponents to fund the new association and get it off the ground. Cliff Gaus, who was the leading proponent of creating the association, recalls, "We had no money… I called up Bob [Blendon]—Bob was Vice President of [the] Robert Wood Johnson Foundation at the time—and I said, you know, "How about $50,000 to form this association?" Bob said, "Well, unfortunately, Dave Rogers and I can only sign a check for $25,000, how is that?" I said, "I will take it." And that literally, that RWJ, in a very nimble and quick way, put the money on the table to make it possible for us to organize" (Blendon, 2008).

Both accretion and deliberate institutional work are essential to explaining how the new profession emerged. They operate in conjunction with career resourcing processes to result in the emergence of a new profession.

DISCUSSION

We generate new theory about professional emergence that highlights the role of career resourcing. We identify career resourcing as a social and temporal process by which peoples' career actions (job moves, knowledge production, and mentoring) generate diverse assets (stature, knowledge, material, and community). Using these assets to perform subsequent career actions transforms them into resources that enact schemas. Schemas, in our case, personal career

schemas and profession-building schemas, motivate action by ascribing meaning and value to actions. Iterative cycles of career resourcing can accumulate assets over time and across individuals. In showing how peoples' schemas about what makes up a good career or successful profession motivated their career actions and how the process of resourcing helped accumulate diverse assets that were important in creating a new profession, the career resourcing process developed here offers novel explanations of why people act in ways that establish new professions and how they acquire the resources for such an accomplishment. We found that career resourcing can lead to the emergence of a new profession by two routes. First, iterative career actions can establish a new profession through a process of accretion. Accretion occurs as assets accumulate over the course of individuals' careers, across individuals in a community, and across generations of scholars. Second, career resourcing can lead and equip people, over time, to engage in more deliberate institutional work to build the profession.

Career resourcing as a distinct process of professional emergence

The career resourcing model we develop builds on and extends our knowledge of professional emergence by identifying a mechanism—career resourcing—that is distinct from mechanisms theorized in prior research. Though the literature on professions and professionalization is vast (Anteby et al., 2016; Freidson, 1970, 2001; Larson, 1977; Muzio et al., 2013; Suddaby & Viale, 2011), few studies look at the process of emergence. Instead, most studies of professions and institutions have examined professionalization of existing occupations or boundary maintenance, leading to what Nelsen and Barley (1997) have called a "left-censoring" of accounts of emergence. Further, the predominant focus of extant research on professional emergence is on outlining the structural or contextual conditions in which new professions emerge, rather than on the process of emergence (Abbott, 1988; Bucher, 1988; Bucher & Strauss, 1961).

Relatively few studies explore and theorize processes of professional emergence. In these studies, the work practices and values of a community shape how they interact with others in a way that establishes a new occupation's distinctiveness and mandate (Fayard et al., 2017; Nelsen & Barley, 1997), or storytelling and strategic framing drive emergence (Granqvist & Laurila, 2011; Howard-Grenville et al., 2017). Our study's careers lens reveals other grounded explanations about professional emergence that extends existing theory by showing how individuals encounter each other in the first place to form communities, why they act to make new professions, and how they resource their profession-building actions.

By focusing on the whole careers of the profession's founders, we can offer a distinct account of how disparate people, who started in other professions, established the new profession. Without discounting the importance of other factors, we show that these factors alone cannot explain the emergence of the HSR profession, because some key career actions to support emergence preceded common work practices, shared professional values, or discourse. Our data shows how relationships formed and the community began to coalesce through career resourcing, before a professional identity even formed. In our data, multiple people, motivated by personal career concerns, made substantial contributions to the emerging profession before they even embraced an identity in HSR. Further, multiple people in our data described engaging in discursive action that was consequential, but note they had the means to engage in particular forms of discourse, and to be listened to, because of the assets like status and skill that they had accumulated through their prior career resourcing.

Career resourcing is a distinct process; however as the prior paragraph suggests, it is complementary to and could in some cases work in conjunction with other professional emergence processes. A career-focused reading of extant studies suggests some of these interconnections between career resourcing and other processes. For instance, Fayard, Stigliani

and Bechky (2017) show that the distinctive values and practices of the new profession of service design enabled its unique professional identity, but prior and parallel career resourcing processes positioned designers to subscribe to these values and practices and to build a professional community. In that study, personal career schemas about doing interesting work motivated diverse designers to make career moves into designing intangible services, rather than tangible products, which in turn led them to come into contact with one another through their work, and ultimately coalesce into a community. Granqvist and Laurila (2011) show that Eric Drexler, a sci-fi futurist, helped create nanotechnology as a distinct academic field by engaging in discursive institutional work that allowed diverse audiences to see the promise of the new technology. However, Drexler's institutional work could have been enabled by his own career resourcing. Drexler had an atypical career that involved running an institute that straddled academia and broader publics, writing a popular book, and afterward completing an engineering PhD. Drexler's atypical career straddling quite different communities and institutional realms likely gave him the means to effectively engage in discursive institutional work by helping him generate assets—including unique discursive tools and perspectives—that allowed him to effectively communicate with the diverse audiences.

While we have suggested linkages between career resourcing and other processes of professional emergence, our study was focused on laying out the career resourcing process, and not on understanding how it interconnects with other emergence processes. Future work can make these interconnections an explicit focus of study. For example, both ethos and career concerns could combine or interact to motivate people's actions that help build a new profession, and these dynamics may change over time. Similarly, future research can focus more specifically on relationship between career actions and various forms of discursive action. Publishing research, framing key research topics, and linking research with key policy concerns are

discursive actions (Howard-Grenville et al., 2017) but also career actions. Understanding the interconnections between different emergence mechanisms and individuals' motivations for taking specific actions can give us a richer account of why people act in ways that help build a new profession.

Our careers focus also highlights that the emergence of professions depends on the existence of jobs for professionals to fill. A career involves people taking a sequence of jobs over time. Throughout our data, there are instances of individuals taking jobs in organizations and adjusting them to address HSR questions, or using resources to create new jobs in the enactment of profession-building schemas. The rise of professions or adjustments of professional boundaries must coincide with the adjustment of jobs in organizations or the establishment of new jobs, as the tasks within jobs are tied to the organization of work in organizations and institutions (Cohen, 2016). In addition, the establishment of new types of jobs in organizations, or the adjustment of existing jobs, changes the nature of work in those jobs (Barley, Bechky, & Milliken, 2017). For example, chemists' jobs were expanded to include environmentally responsible principles concurrent with the emergence of green chemistry (Howard-Grenville et al., 2017); new recycling manager jobs were created or existing jobs adjusted in order to staff campus recycling initiatives (Lounsbury, 2001). Future research can explore the coevolution of new professions, careers, jobs, and work in organizations.

Apart from professional emergence, career resourcing may also be important in shaping institutional events in existing professions (cf. Chreim et al., 2007; Empson et al., 2013; Kyratsis et al., 2017; Purdy & Gray, 2009; Smets, Morris, & Greenwood, 2012). For instance, career resourcing processes on the part of political supporters of alternative dispute resolution may have supported the institutionalization of the profession in different American states (Purdy & Gray, 2009). Career resourcing processes among management professionals in UK law firms may have

helped them develop expertise, relationships and effective authority that allowed them to play a role in transforming the organizational form of legal partnerships (Empson et al., 2013). In addition to looking at the interplay between career resourcing processes and other professional emergence processes, future research can more fully explore the role of careers and career resourcing, in interaction with a diverse range of mechanisms, in shaping a range of institutional events having to do with professions.

Career resourcing links individuals to institutions

In addition to building out our understanding of professional emergence as a specific type of institutional outcome, we generate new theory for understanding the bottom-up processes by which career actions can shape institutions. Conceptual work has suggested that career actions and patterns could be applied to a structuration model of institutional change (Barley, 1989; Hughes, 1937). Some subsequent studies in the careers literature have used these ideas to explore how institutions structure career actions (Cappellen & Janssens, 2010; Dany, Louvel, & Valette, 2011; Duberley et al., 2006); however, empirical research on the bottom-up direction of careers in structuration processes has been largely absent, which limits understanding how careers can structure institutions. Our use of a process approach addresses this gap (Jones & Dunn, 2007). Attending to the process of institutionalizing can provide insight about when change is likely to occur as an outcome of career-related actions. Our findings suggest that institutionalization will occur when the diverse career actions of individuals accumulate in a way that leads them to coalesce into a community with a clear identity, create a distinct body of knowledge, and put them in a position to create an infrastructure to support a new profession. Most people deviate from an institutionally-prescribed career at some point, but these career variations are not always relevant to institutions. Considering the process by which career action results in institutional

change reveals how individual action can aggregate to institutional change, i.e. through resourcing processes.

Second, career resourcing provides an alternative or complementary perspective to theories of institutional work. Institutional work is the predominant framework in current institutional theory for how individuals change institutions. Institutional work encompasses "the broad category of purposive action aimed at creating, maintaining, and disrupting institutions" (Lawrence & Suddaby, 2006: 217), and includes many types of deliberate action, such as discourse, identity work, and relationship formation (Currie, Lockett, Finn, Martin, & Waring, 2012; Lawrence, Suddaby, & Leca, 2011; Lawrence & Suddaby, 2006; Zietsma & Lawrence, 2010). A distinguishing feature of institutional work is that it involves action that is deliberately oriented towards institutions. Career resourcing includes an institutional work mechanism to allow for individual agency in knowingly bringing expertise, discursive talents, and other resources to bear in acting on institutions. Where the career resourcing model diverges from theories of institutional work is in its allowance for non-purposive action, or rather, action that is not oriented toward institutions, to have institutional effects. We show that individuals can build a new profession, and hence change institutions, in part through multiple, iterative, dispersed actions oriented towards their own personal careers in an accretion process. Interestingly, accretion processes created a distinctive professional identity and community; however, in the case of HSR, career paths remained flexible, with entry through multiple ports, e.g., sociology, economics, statistics, or specialized HSR training, and flexible boundaries between HSR and other academic disciplines. The relative looseness of career paths in HSR might be related to the importance of the accretion process in this setting, and it could be that professional emergence that is more heavily weighted toward institutional work could result in more rigidly structured careers. Future work can untangle the way that the balance of accretion and institutional work

that occurs early in processes of professional emergence shape the careers of later practitioners. Regardless, we extend understanding of the micro-foundations of institutional change by drawing clear process links between personal career motivated actions and institutional consequences.

Our resourcing approach further complements the institutional work perspective by generating new theory to address the key issue of "how and why institutional work occurs" (Lawrence et al., 2011: 55). Research on institutional work tends to focus on the work itself, i.e. what is required to create, maintain, or disrupt institutions, rather than the motivations for action (Kyratsis et al., 2017; Lawrence et al., 2011; Lawrence & Suddaby, 2006; Lawrence, Suddaby, & Leca, 2009; Muzio et al., 2013; Zietsma & Lawrence, 2010). The career resourcing model complements theory on institutional work by explicitly addressing motivation for action ("why"), articulating what actions mean to agents and how they are understood and valuated in and of themselves, and as a means to achieving some legitimate end. As Chreim et al. (2007) note: "When institutional theory attends to agency, it generally neglects meanings and interpretations of agents and focuses instead on actions of centrally located actors in institutional fields" (p.1533). Career resourcing addresses these concerns by explicitly articulating the schema-driven meanings of career actions. In our study, it is the meaning ascribed to career actions by shared personal career schemas or profession-building schemas that determines their value and the effects they will have on the agents' own careers and the emerging profession. In our case, career resourcing processes can lead people to a place where they see value in engaging in an actions aimed at building the profession. "How" institutional work occurs is addressed by showing how resources are accumulated and used. Specifically, we show how individuals accumulate the means to perform effective institutional work. Future research can explore how career action interacts with other distributed, bottom-up processes of institutional change.

Implications of Combining Resourcing and Institutional Theories

In bridging resourcing theory with institutional theory, our research also has broader implications for both literatures. In showing that a resourcing process can create new institutions, in this case a new profession, our research suggests the need for further work to elaborate on the role of resources in processes of institutional creation, disruption and maintenance. Institutional theorists have often treated resources as static things that people possess (Battilana, 2006; Battilana, Leca, & Boxenbaum, 2009; Fligstein, 1997; Zietsma & Lawrence, 2010). For example, DiMaggio (1988) proposed that individuals with sufficient resources act to create new institutions that will help them to advance their highly-valued interests. Zietsma and Lawrence (2010) point to expertise, networks and other resources of diverse actors as critical preconditions that shaped the process of transformation of forestry practices in British Columbia. Implicit in these characterizations is a view of resources as objective things that individuals are differently able to access, and that enable other, more dynamic institutional processes. This static and objective view of resources is surprising given institutional theory's social constructivist ontology. One implication of our use of a resourcing perspective is that actors' access to resources that has hitherto been treated as a starting point for other institutional processes should also be treated as an outcome to be explained. For example, instead of treating actors' social positions as central actors with access to resources as a starting point for other institutional processes, future work can ask how actors move from peripheral to central positions in a field, and how the assets they possess or accumulate become socially constructed as valuable resources that enable them to act in ways that enact their preferences or worldviews.

In using a resourcing perspective to explain institutional rather than organizational processes, our work also suggests that resourcing theories could be extended by explicitly accounting for multi-level social systems. The literature on resourcing in organizational theory

has its roots in research on organizational routines (Feldman, 2004; Feldman & Orlikowski, 2011). Consistent with these roots, resourcing has been conceptualized as a process that unfolds through interactions between diverse people who are interconnected through their work (Feldman, 2004; Howard-Grenville, 2007; Wiedner et al., 2016). In extant research, small divergences in how people enact a routine, or how they value current working patterns as a means of accomplishing important and valued organizational goals (i.e. variations in the schema that people draw on for understanding and valuing a routine) can have ampliative effects over time (Feldman, 2004; Feldman & Quick, 2009; Feldman & Worline, 2011; Howard-Grenville, 2007). Our research also suggests that resourcing can be an outcome of actions by actors who are at best distantly connected (e.g. diverse academics in different disciplines), and that ampliative processes can unfold both over time and across levels of analysis (e.g. personal career actions having an institutional effect on professional emergence).

Our research, however, offers at best preliminary insight into how resourcing processes may unfold in the context of a complex, multi-level institutional system. More research is needed to more fully understand how resourcing processes in institutional systems differ from the processes theorized for organizations. For example, our research shows how a particular resourcing process—career resourcing—involving actors who were initially disconnected, over time helped create a community of people and constitute a specific type of institutional actor, a new profession. Other types of resourcing processes may be more important in other contexts (e.g. dispersed individuals coalescing into a social movement). Also, extant work on resourcing treats schemas as rules and beliefs that are held in relatively localized communities, and changed through local action and interaction over time. However, institutions are an important source of symbolic systems that guide action, and that could potentially define or influence what assets have legitimate value as resources (Friedland & Alford, 1991; Thornton, Ocasio, & Lounsbury,

2012). Future work can help us better understand how higher-level social institutions shape and constrain the range of schema that people may draw on in their actions and interactions, and how this ultimately shapes the way resourcing processes unfold and have ampliative effects over time.

CONCLUSION

In developing a model of career resourcing, and showing how it contributes to the emergence of a new profession, our study generates new theory of the process by which people's careers act as a central mechanism in shaping bottom-up processes of institutional change, specifically professional emergence. Our focus on careers-based mechanisms is analytically distinct from, but potentially complementary to other approaches to understanding bottom-up change processes, which focus on diverse non-careers based mechanisms (Fan & Zietsma, 2016; Furnari, 2014; Leung, Zietsma, & Peredo, 2014; Lok, 2010; Phillips, Lawrence, & Hardy, 2004). Focusing attention on and unpacking a careers-based mechanism complements and extends prior work by expanding our collective theoretical toolkit for conceptualizing bottom-up processes of institutional change.

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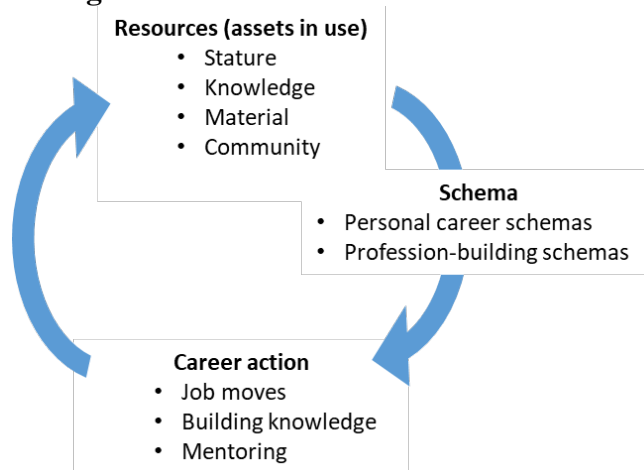
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Figure 1: How Individuals' Career Actions Can Lead to Professional Emergence
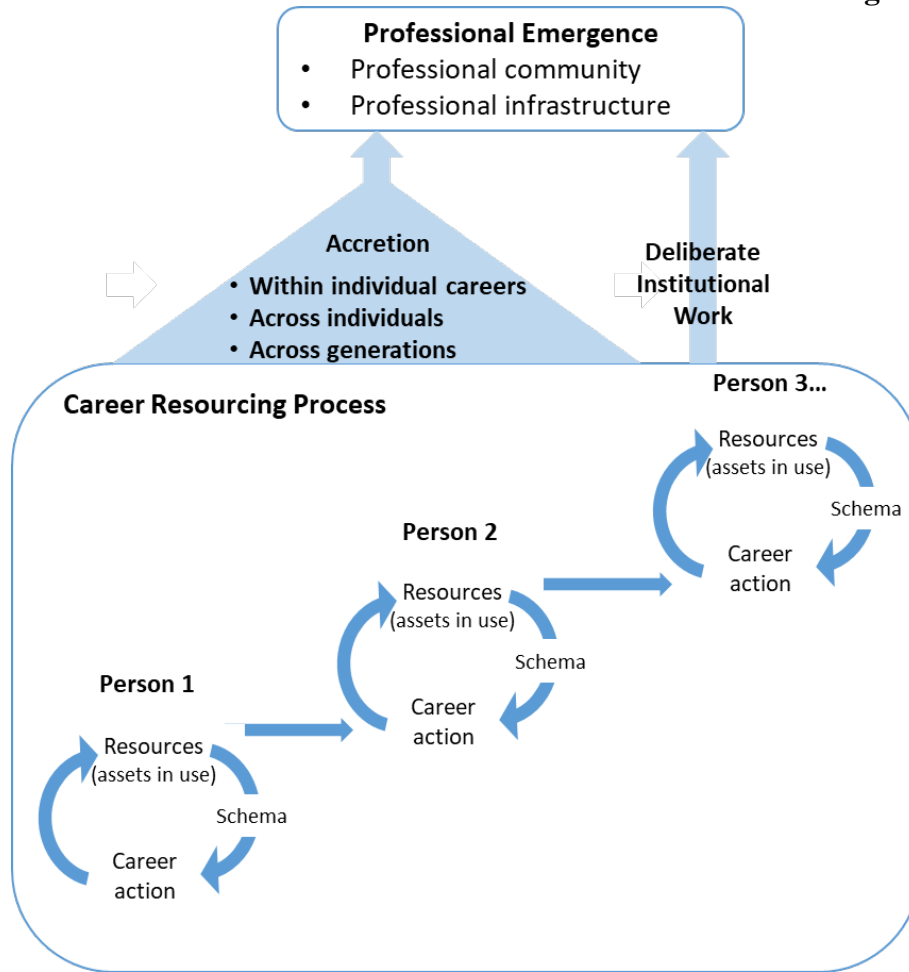
Figure 2: Career Resourcing Process

Table 1: Data Sources

Type of Data	Count	Evidence Yielded by Data	References
Oral career histories (23 people)	24	Career histories including histories prior to doing health services research. Perspectives on their own and others' role in shaping the emergence of health services research	(Berkowitz, 1996, 1998a, b, c, d, e, f, g, h, i, j, k, l, m, n, 2002; Brown, 2003a, b, c, 2004a, b; Mullan, 1988; Mullan, 2004; Santangelo, 1995)
Faculty bios, CVs, obituaries, tributes	47	Additional information on career histories. Triangulation of events in oral histories.	(Brook, 1997; Frenk, 2000; Greenberg & Fein, 1999; Stange, 2011) *
Interviews (13 people) and panel on the creation of AHSR	14	Additional information on career histories. Specific focus on motivation for creating AHSR and early history of AHSR.	(Blendon, 2008; Muldoon, 2008a, b, c, d, e, f, g, h, i, j, k, l, m)
First-hand accounts of HSR organizations	17	Some information on career histories. Greater focus on players involved in creating or running various organizations that make up professional infrastructure for HSR.	(Altman, 1995; Brook, 1995; Flook, 1969; Flook & Sanazaro, 1973; Gaus, 2003; Lohr, 1995; McCarthy & White, 2000; Roper et al., 1988; Salive, Mayfield, & Weissman, 1990; Sanazaro, Goldstein, Roberts, Maglott, & McAllister, 1972; Viseltear, 1973; Wennberg, 1984, 1994, 2010; White, 1991; White, 1970)
Institute of Medicine reports	13	Additional information on career histories—Front and back end materials, including IOM panel membership, provide important additional information on who was involved in these service roles in support of HSR and evidence of potential collegial ties between people. Also provides information on what organizations commissioned and funded reports.	(Gray & Fields, 1989; Institute of Medicine, 1974, 1979, 1989, 1990a, b, 1991, 1992, 1995, 2000, 2001; Lohr, 1995; Thaul et al., 1994)
Secondary histories of HSR organizations	4	Provides perspective on the key players involved in creating and running the organizations and their role in advancing HSR	(Berkowitz, 1998o; DeWalt, Oberlander, Carey, & Roper, 2005; Gray, 1992; Gray et al., 2003)

* References only include tributes published in health services and medical journals. They do not include faculty bios, CVs, and newspaper obituaries.

Table 2: Key Figures in Health Services Research History

	Name and Dates	Path to HSR	Role in Institutionalizing HSR as an Profession
1	Eli Ginzberg 1920s → 2000s	*Economist → HSR*	- Reorganized Army medical care - Did foundational research on the organization of medical care
2	Avedis Donabedian 1930s – 1980s	*Physician → HSR*	- Developed conceptual framework that helped define the definition for HSR as a field
3	Charles Flagle 1930s → 2000s	*Engineer → HSR*	- Created Operations Research department in Johns Hopkins University Hospital - Member of NIH HSR Study Section
4	Herbert Klarman 1930s → 1980s	*Economist → HSR*	- Published papers that defined the field of health economics - Member of NIH HSR Study Section
5	Phillip Lee 1930s – 1990s	*Physician → policy maker*	- Reorganized health programs within US Dept of Health, Education and Welfare - Important creator of the National Center for Health Services Research - Created a health policy research center at the University of California San Francisco
6	Sam Shapiro 1930s – 1990s	*Statistician → HSR*	- Did pioneering HSR research as head of research unit at Health Insurance Plan NY - Headed HSR department at Johns Hopkins University after Kerr White
7	Kerr White 1930s – 1980s	*Physician → HSR*	- Chaired the NIH HSR Study Section - Funded training grants and grants for university-based HSR centers through NIH - Started and chaired first academic HSR department at Johns Hopkins University - Lobbied for creation of the National Center for Health Services Research
8	Victor Fuchs 1940s → present	*Economist → HSR*	- Commissioned early papers defining field of health economics - Created health economics program at RAND
9	Ed Hinman 1940s → 1990s	*Public Health → HSR*	- Created HSR department in the Baltimore Public Health Services Hospital - Director of National Center for Health Services Research
10	Margaret Mahoney 1940s – 1990s	*Foundation officer*	- Created health programs at Carnegie Foundation and RW Johnson Foundation - Helped create HSR training programs at RW Johnson Foundation
11	Stuart Altman 1950s – present	*Economist → policy maker → HSR*	- Funded HSR as political appointee in US Dept of Health, Education and Welfare - Created HSR center at Brandeis University - Founding officer of AHSR
12	David Mechanic 1950s – present	*Sociologist → HSR*	- Created medical sociology and HSR center at the University of Wisconsin - Created health services research center at Rutgers University
13	Barbara Starfield 1950s – 2000s	*Physician → HSR*	- Important in creating sub-field of pediatric HSR - Developed a foundational model of primary care quality
14	Jack Wennberg 1950s – present	*Physician → HSR*	- Published high impact research on geographic variations in health care - Created HSR center at Dartmouth Medical School - Lobbied for the creation of AHCPR
15	Linda Aiken 1960s -present	*Nurse → HSR*	- Funded HSR as RW Johnson Foundation research staff - Helped finance endowment for IOM as Robert Wood Johnson Foundations staff - Created HSR center in School of Nursing at University of Pennsylvania
16	Robert Brook 1960s – present	*Physician → HSR*	- Clinical lead on RAND Health Insurance Experiment - Developed tools for assessing the appropriateness of clinical interventions - Founding board member of AHSR
17	Paul Cleary 1960s – present	*Sociologist→ HSR*	- Edited major HSR journal
18	Kathy Lohr 1960s – present	*Start in HSR*	- Researcher on RAND Health Insurance Experiment - Commissioned and advised IOM study panels defining HSR field
19	Joe Newhouse 1960s – present	*Economist → HSR*	- Initiated and managed RAND Health Insurance Experiment as principal investigator - Created HSR research and training initiatives at Harvard University
20	William Roper 1960s – present	*Physician → HSR*	- Commissioned major HSR research initiatives as Administrator of Health Care Financing Administration
21	Bruce Vladeck 1960s – present	*Political Scientist → HSR*	- Funded HSR as head of United Hospital Fund of New York - Administrator of Health Care Financing Administration
22	John Ware 1960s – present	*Start in HSR*	- Investigator on the RAND Health Insurance Experiment - Created widely used tools for measuring patient-reported health outcomes
23	Gail Wilensky 1960s – present	*Economist → HSR*	- Created National Medical Care Expenditures Survey dataset - Administrator of Health Care Financing Administration

Table 3: Data Structure

Getting training (e.g. get PhD, get MD)	**Job moves**	**Career actions**
Getting positions (e.g. start job, serve on an advisory body)		
Doing research (e.g. start study, publish findings, acquire funding)	**Producing Knowledge**	
Mentoring (e.g. mentor student, mentor/teach peer)	**Mentoring**	
Sponsoring (e.g. sponsor someone for job, hire someone, allocate funding for others' research)		
Stature (e.g. formal authority, reputation, recognized expertise)	**Assets (potential resources)**	
Knowledge assets (e.g. new ideas, major findings, new methods)		
Material assets (e.g. discretionary funding from job, research funding)		
Community assets (e.g. intellectual interest or identity in HSR, collegial ties)		
Having a productive and fulfilling career (e.g. pursuing advancement, doing interesting research, helping junior scholars)	**Personal career**	**Schemas**
Advancing the new profession (e.g. attract new members, develop distinctive identity)	**Profession-building**	
Distinct identity (e.g. identity as distinctive from other professions, public recognition of HSR identity)	**Professional community**	**Professional Emergence**
Intellectual foundation (e.g. core texts, core questions, core methods)		
Community & relationships (e.g. people trained in and doing HSR, small world of people, blending of personal and professional ties)		
Academic infrastructure (e.g. HSR departments/ centers, academic journals, training programs, professional associations)	**Professional infrastructure**	
Funding infrastructure (e.g. foundation programs, government funding agencies)		
Field-level infrastructure (e.g. political and private sector consumers of research, HSR units in hospital systems/ insurers/ government agencies)		

Table 4: The Health Services Research Profession

	Pre-emergence (1940s)	Institutionalized profession (late 1990s - present)
Professional Community		
Identity	• No HSR label/ identity	• Recognized HSR identity
Intellectual foundation	• Limited academic knowledge • Limited datasets or data collection infrastructure	• Key texts and paradigms within HSR • Core methods and major datasets available to researchers
Relationships	• No identifiable group of researchers doing HSR	• Emergence of a small, interconnected community in 1950s - 60s. • Emergence of a larger population of HSR researchers in subsequent decades
Professional Infrastructure		
Academic infrastructure	• Major medical journals do not publish HSR • No dedicated academic departments/ centers, training programs or professional association	• Dedicated HSR journals plus some openness to HSR research in medical journals • Academic departments, centers and programs at many major universities, dedicated training programs, • Association for Health Services Research (AHSR) founded as professional association
Funding infrastructure	• No dedicated funding	• Dedicated funding includes programs within the Agency for Healthcare Research and Quality, National Institute of Mental Health, Robert Wood Johnson Foundation and the Commonwealth Fund.
Field-level infrastructure	• Ad-hoc use of health services research in Federal Government	• Health services research informs major policy initiatives • Health services research units in insurers, hospital systems, federal agencies and state-level governments

Table 5: Additional Career Resourcing Process Examples

I was first appointed full professor in the School of Engineering, then came to the Department of Mathematical Sciences and was given a joint appointment in Public Health because the dean there… had seen what was going on in the world and how that department should be expanded in its scope. …He said to me, "There's this field of medical care that's developing within the American Public Health Association, and we want that represented here in the department. Who do you know in that field?" Of course, by that time the [NIH] study section was in full swing, and I knew a lot of people, including Kerr White. And I told him, "Kerr White is the guy we ought to have." He said, "Get him. What do we need to do to have him come here?" ... within a year Kerr White and his group had come here and were very quickly established as a separate department. *-C. Flagle*	**2. Resources (assets in use)** - Relationship with Dean - Relationship with K. White **3. Career action** K. White moves to Hopkins and sets up new department **1. Career actions** - Move to Hopkins School of Public Health - NIH HSR study section role **3. Career action** - Sponsors K. White for job at Hopkins
The whole process was made feasible by Kerr White's work. Kerr had been at the University of Vermont prior to coming to Hopkins, where I was fortunate to study with him. Kerr had persuaded most Vermont hospitals to join a hospital discharge abstract system called the Physician's Activity Study. For every hospitalization, it generated information on the patient's diagnoses, surgical procedures, age, sex, and place of residence. For hospitals that didn't belong to the data service, we sent RMP staff into their record rooms to make our own abstracts. We thus obtained information on virtually all hospitalizations of Vermont residents. We also sent our staff into all nursing homes and home health agencies to obtain similar data. *-J. Wennberg*	**2. Resources (assets in use)** Comprehensive data **3. Career action** Wennberg uses VT database for research **1. Career actions (K. White)** - Sets up VT hospital data collection - Mentors Wennberg
[Explaining how he was able to get an academic job as a full professor without a Ph.D.] ...I guess, immodestly, I had such a reputation, through the production of what the field considered important research, that it never entered my mind. I went to Hopkins in '73... I had another offer from the University of Michigan…and the University of Rochester. I had a number of offers. *-S. Shapiro*	**2. Resources (assets in use)** - Stature **1. Career actions** - Publish important research **3. Career action** - Move to Hopkins to head HSR department

Table 6: Personal Career Schemas and Profession-building Schemas

Personal Career Schemas	Profession-building Schemas
...my going-in assumption when I was a graduate student was that I would stay at Harvard as an assistant professor. Then I thought I would go somewhere and be an assistant professor of economics, so when I got to RAND in 1968 I was pleased and pleasantly surprised that the change of environment was very intellectually stimulating. I realized, after I got there, that I'd actually gotten into something of a rut at Harvard. I more or less knew who everybody was and what they were likely to say. All of a sudden I had a whole new cast of characters that didn't think the way the people at Harvard thought… I then concluded I shouldn't spend my whole career in one place...When the Harvard offer came along I said to myself, although I was very happy at RAND, that if I turned down that offer I couldn't figure out what offer would get me out of RAND. - *J. Newhouse*	I think this institute has been a successful force. We've trained lots of good people. We have lots of people who we've encouraged to build careers in health. And the stuff I do with the Robert Wood Johnson Foundation. I've been involved from their inception as a national foundation. I've been associated with the development of the Scholars Program for more than ten years. I've been involved in the development of the Health and Society Program and continue to be involved with that as well. I now run the Health Policy Investigator Program, which is a terrific program, and I really enjoy the quality and diversity of the people we've brought together. We're thinking about health very broadly. A lot of these people are health services researchers, but they're coming at it from law, from sociology, from economics, from history, from different points of view. I think, as a consequence, we offer a much richer picture of the health care system, how it's evolving, the forces affecting it. -*D. Mechanic*
Personal career schema (stay engaged and stimulated) guides career action (looking for diverse career experiences)	*Profession-building schema (wanting to draw diverse people into HSR) guides career action (continuing to play service role in various RWJF investigator programs)*
Actually David [Rodgers] and Bob [Blendon] and I left [the RWJ Foundation] pretty much at the same time, within a year… The main thing that happened was that the original chairman of the board got sick, and he had never created anybody to take his place or made any provisions for a successor. And he had pretty much run the entire Foundation himself. Other board members were pretty much in the shadows. So when he was no longer a player this kind of mass chaos broke out, and lots of dissension between the staff and the board… All of this business about the close connection with the government, for example. The staff were all Democrats; the board were all Republicans. The board didn't like all this kind of activism and the connection with the federal government. They didn't like publishing. They didn't like research. -*L. Aiken*	One of the issues that I felt was important early on, and I think I learned this at the Carnegie Corporation for totally different reasons, is that you need to develop new kinds of people, not just on the medical care side, but on the research side, and you need to think about it in terms of long-term investment to create the cadre of people… There was a program that was developed when I was at Carnegie Corporation and Commonwealth came in as a cosponsor, called the Clinical Scholars Program. And I brought that to the Robert Wood Johnson Foundation. It was one of my provisos. And it's now almost in its 40th year. So you now have a cadre of physicians who know health services like many Bob Brooks around the country, and that's an amazing story of what you can do - but it takes a long time. -*M. Mahoney*
Personal career schema (do high-quality, interesting research; avoid workplace with toxic conflict) guides career action (leaving the RWJ Foundation and taking academic jobs at Cornell, Harvard, and Penn, resp.)	*Profession-building schema (wanting to develop a new kind of researcher) guides career action (starting and then continuing to run the Clinical Scholars Program)*

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