ABSTRACT Divisions between variable-oriented and person-oriented approaches in social and behavioral research are newly drawn. Yet few person-oriented approaches have been fully articulated; those that have are predominantly quantitative. This work presents an argument for a qualitative, person-oriented study of careers; an approach identified as careers in context. Based on a national study of scientists, this contextualist approach is grounded by three interacting, but analytically distinct, emphases to suggest how careers can be studied in and beyond science: (1) an emphasis on time and place as under-utilized dimensions on which to direct further study of careers; (2) an emphasis on the subjective career as a concept that qualitatively encapsulates temporal and spatial dimensions; and (3) an emphasis on career study in life course perspective. Subjectively (and objectively), careers are, of course, not static. By situating subjective careers in the times and places in which they occur, we are drawn to how those careers ‘play out’ over the course of the lives of the people leading them. This paper concludes by stressing ways in which contextual studies of careers in and beyond science will advance our understanding in five larger domains of social process: identity construction; institution building; social–psychological differentiation; job satisfaction; and mystification of work.

Keywords careers, colleges and universities, occupations, stratification

Argument and Outline for the Sociology of Scientific (and Other) Careers

Joseph C. Hermanowicz

A distinction between ‘variable-oriented’ and ‘person-oriented’ approaches is newly emphasized in social science research methodology (Abbott, 1988, 1990, 1992, 1997; Chan, 1995; Cairns et al., 1998; Settersten, 1999). The distinction is significant, as it speaks to the way in which social scientists conceptualize the world as an object of study. The point of difference is whether social scientists, in any given line of inquiry, study their subjects by focusing on discrete, uni-dimensional variables or by focusing on individuals in a more holistic strategy for understanding larger social processes. Critics have argued that the variable-oriented approach atomizes individuals and abstracts social facts from the contexts in which they are located. According to the person-oriented approach, no social fact makes sense abstracted from its spatial and temporal context.

This distinction between approaches is applicable to nearly all lines of social inquiry, including the sociology of careers. The variable-oriented approach dominates sociological lines of inquiry, and the sociology of careers...
is no exception. While life history research has seen a renaissance in sociology over the past 15 years (for example, Berlau & Kohli, 1984; Denzin, 1989; Atkinson, 1998; Clausen, 1998), research in this area has bypassed the systematic study of work careers, which may be taken as part of, but not the same as, the larger rubric of lives. Research on scientific careers has subsided substantially since the last major body of institutional studies of scientists published in the 1960s through the 1980s (Glaser, 1964; Cole & Cole, 1973; Hargens & Hagstrom, 1982). Studies of scientific careers that focus on gender differences are an exception, which, like earlier studies, nonetheless adopt a variable-oriented approach (see, for example, Sonnert & Holton, 1995; Xie & Shauman, 2003; Fox, 2005). Possibilities that follow a more person-oriented approach therefore need to be articulated.

Critics of the variable-oriented approach have suggested alternatives, but they are predominantly quantitative (for example, Abbott, 1983, 1988, 1990; Abbott & Hryckow, 1990; Chan, 1995). Variable-oriented approaches often rely on surveys as the means of data collection, and seek to produce general statements about empirical regularities found within large populations (for example, Blau & Duncan, 1967). By contrast, person-oriented approaches seek to reveal people's interpretations of forces that change or reproduce social processes (Faulkner, 1974; Ragin, 1987). Person-oriented approaches more typically rely upon smaller samples that more readily facilitate in-depth inquiry, but which are sufficiently large to assess within- and between-group differences. While the results of person-oriented approaches direct researchers to uncover social process by examining the details of individually lived experience, the social processes uncovered may well pertain to more general populations.

Responsive to these patterns, I offer an outline and rationale for a broad, qualitative study of careers based upon the methods and findings from a national study of scientists (Hermanowicz, 1998). Studying scientific careers, as I shall show, can be useful for studying careers in other professions and occupations. By studying careers in science, we encounter an occupational setting from which to begin posing questions about how to study careers in and beyond science. My intention is to show how careers can be studied sociologically with a person-oriented emphasis - an approach I call 'careers in context' - that has the potential to yield rich and significant results. Individuals and the larger groups to which they belong, rather than variables, become the unit of analysis. Studies of scientific careers may benefit person-oriented studies of careers outside of science, and such work can be rewarding for further studies of scientific careers. I discuss theoretical reasons for following this approach; but at the same time I make explicit that this approach is a template (not a formula) for future inquiry. One clearly may construct variations of the outline provided; if this paper were to inspire such activity a major goal will have been satisfied. Short of such a goal, a person-oriented framework is useful for helping us to think and study more actively about the sociology of scientific, and other, careers.

This paper has three parts. First, it discusses the history of career as an organizing concept in studies of people and their work. Two major lines of
its development in sociology are identified, and then it is argued that trends in its usage and contemporary applicability underscore a need to examine subjective careers more vigorously. Second, a sample framework is presented for future studies, based on the study of scientists. Finally, the advances in the contextualist study of careers can be applied to five major domains of social process: identity construction; institution building; social–psychological differentiation; job satisfaction; and the mystification of work.

Career as Core Concept: Re-casting the Question

‘What do you do?’ Hypothetically, all kinds of other questions can be asked to pin down a person’s identity, status, and role. Other social institutions besides that of work – from education to family to religion – could be targeted to achieve a similar end. While sometimes we do pose questions about school, kin or faith to strangers and new acquaintances, they nearly always occur after a question that locates them in the division of labor, which specifies their role in the workplace and endows a master status and identity (Hughes, 1958). The answers to this master question, whether they include ‘I’m an electrician’, ‘I’m a waitress’, or ‘I’m in the insurance industry’, facilitate social order precisely because they ascribe a location in social space. We depend on these answers to know how to interact (what, and what not, to say and do) without too many gaps and gaffes.

Sociologists and other social scientists for decades have labored intensively to ask this very question of entire populations. We now have elaborate systems of occupational categories in which to place people, and an equally labyrinthine dictionary of occupational titles that divides labor from head to toe (see US Department of Labor, 1991). The question is asked for various other purposes in the sociological literature, whether to study mobility, income, or union activity. It is (and is often used for) a kind of social count, but, as Abbott (1997: 1159) explains, like any social count, it ultimately removes individuals from their social contexts. It is a question that drives and is especially conducive to variable-oriented analysis.

If we are to make any strides in bringing people and their work contexts into the analysis, we need to re-cast the master question that will guide our investigations. Following the argument to be developed here, the question we need to ask of people more often is: ‘What do you think about what you do?’ Compared with its more popular bedfellow, it has received much less attention in the sociological literature. It is a question, however, that drives and is especially conducive to person-oriented analysis. This is because it makes the object of the question an active agent who interprets how a life (or some aspect thereof) is experienced. ‘What do you do?’ is static and often leads to static portrayals of people and their work. By contrast, ‘What do you think about what you do?’ is dynamic, open, and responsive to continuity and change in life experience. ‘What do you do?’ directs our attention to job titles. ‘What do you think about what you do?’ directs our attention to the people behind the titles, their experience of work, and thus to the career as a core concept that grounds passage through time and place.
The concept of career may be seen to have two distinct lineages and accompanying definitions. The first is broad and encompassing, the second narrow and restricted. The first is older and comes from what was once a dominant tradition. The second is newer (but well established) and characteristic of contemporary inquiry. The first emerged in early Chicago School investigations of institutions and their ecology, urban life, and delinquency. Careers were defined as identifiable sequences of statuses and positions but were not confined to occupations. Shaw’s classic work *The Jack-Roller* (1930) illustrates the use of the concept as it applies to a boy’s passage through derelict roles; Goffman’s foray into the ‘career’ of the mental patient is an additional illustration of the concept’s ecumenicism (Goffman, 1961).

Work ethnographies in the tradition of Everett Hughes (1958, 1993 [1971], 1994), the majority of which were produced in the 1950s and 1960s, followed a more liberal than conservative application of the career concept, exemplified in studies ranging from schoolteachers (Becker, 1952) to funeral directors (Habenstein, 1954), and building janitors (Gold, 1964). The Hughes tradition, while it paid close attention to the interplay of biography and work, and while in this sense came closest to posing the question ‘What do you think about what you do?’ to its many occupational subjects of study, nevertheless adopted relatively static frames of analysis. From these ethnographies we get a snapshot view of what people’s work is like, but not a picture of how their work lives and work perspectives have unfolded over time. Life course sociology and attendant emphases on taking ‘the long view’ of people and their socially bounded histories would not emerge in earnest for another 25 years.

The second lineage emerged in the 1960s and did so largely in response to the body of preceding work. The concern, evidenced in Wilensky’s (1961) major piece, was applicability: what is included by the career concept? Researchers were called to follow a stricter definition: ‘Let us define career in structural terms. A career is a succession of related jobs, arranged in a hierarchy of prestige, through which persons move in an ordered (more-or-less predictable) sequence’ (Wilensky 1961: 523). But as Barley astutely observed: ‘... it is worth remembering that precision, by definition, requires narrowing and that narrowing entails loss’ (Barley, 1989: 45). Comparatively few people now follow a traditional organizational career (Arthur & Rousseau, 1996; Arthur et al., 1999). Major changes in the economic and social order render this definition overly narrow – it defines most people as not having a career. But clearly all people continue to have job histories, along with a biography that strives to coherently interpret passage through work.

The concept itself, then, has a career, and it seems to have reached a reflective stage, asking how it may now be put to effective use. Since people’s job histories are not as orderly as the restricted definition posits, a broader, more fluid use of the concept seems empirically justifiable. Its range of applicability is a strength; its breadth does not come at the expense of theoretical development, especially if one is to ground the concept in theoretical foundations as offered here. As Moen (1998) has observed, ‘the career concept [is] a useful one, since it incorporates a range of ideas from different
perspectives, including transitions and trajectories, individuals and organizations, and subjective identities as well as objective paths'. Sequence and temporality remain essential components, both for how selves and identities arise and change and as a 'lens for peering at larger social processes known as institutions' (Barley, 1989: 49). Employment adds structure to virtually all aspects of the life course, whether we prepare for, perform in, or enjoy the fruits of it. Viewed therefore as 'durable arrangements' that arise in response to work's centrality, careers may be understood as metaphoric constructs that 'organize experience over time' (Pearlin, 1988). It is precisely this explicit connection to lived experience where new empirical and theoretical lines of inquiry into careers can be made.

In posing the question, 'What do you think about what you do?,' I am proposing that we think about the differences among and within occupations in a new way. This way consists of how the varying social contexts of work set parameters on the ways in which the occupational life course is subjectively experienced. By adopting a life course perspective, I emphasize two key dimensions of careers: time and place. This approach stipulates that we examine how occupational self-identities emerge in different places and how these identities unfold over time. Our concerns are, therefore, grounded by how people experience the objective realities of work. To that end, our mission is to interpret how people view, and have viewed, their unfolding careers.

Sample Framework

Background

To illustrate this new approach, I describe how I used it in a study of scientists' careers. In general, the outline described is applicable and may be used to study all kinds of people and their work. It provides an example of how time and place are operationalized as anchors of experience and interpretation through the life course (see for example, Stephan & Levin, 1992).

Based on face-to-face interviews and self-administered questionnaires, the study of scientific careers - using physicists specifically - operationalized place as an analytical dimension by incorporating scientists who worked in a variety of universities. Physicists were selected from departments that ranked at the top, middle, and bottom of assessments conducted by the National Research Council (NRC), which included in its assessments those departments that confer graduate degrees (Jones et al., 1982; Goldberger et al., 1995). Within departments, individuals were sampled randomly within professional age cohorts, described below, in order to include roughly equal numbers of respondents within the study's dimensions of analysis.

The departments and corresponding universities may be classified into three types for comparative purposes: elite - universities that place the highest premium on research and whose departments of physics ranked at or near the top of the assessment conducted by the NRC; pluralist - universities that emphasize research as well as mass teaching and service and whose departments of physics ranked in the middle of the NRC assessment; and
communitarian — universities that primarily emphasize teaching and service, but not necessarily to the exclusion of research, and whose departments of physics ranked at or near the tail of the NRC assessment.

While these collective identities are presented at the outset to help organize the discussion, they emerged after data analysis as a means to characterize predominant conventions that distinguish the academic worlds. As subsequent discussion will convey, elites principally derive meaning about their careers through the celebration of research, which controls an institutionalized drive to be 'among the best'. Communitarians come to principally derive meaning about their careers through local contributions, which control careers insofar as members are mandated to share the burden of prevailing instructional and service duties. Pluralists compose a mix of these conventions, and different individual careers are controlled by one or the other tendencies at different career points, or a blend of them through a portion of a career (see Hermanowicz, 2005).

Top, middle, and tail departments were built into the study design to permit comparison of scientific careers that are experienced under different structural and cultural conditions, including the prevailing resources and expectations that situate and help to define each of these types of institutions and the careers found in them. The orientations that people bring to their work are both structurally and culturally constrained. Differences in the social structures of institutions make opportunities more available to some than to others (Crane, 1965; Long, 1978; Long & McGinnis, 1981), a fact that is reflected in scientists' appraisals of their own successes and failures.

In addition, the study design involved a sampling of scientists from three distinct cohorts, which would permit an assessment of careers among scientists of different professional ages and hence different lengths and types of experiences in the profession. Operationalizing a time dimension, the cohorts were defined by those who received their PhDs prior to 1970; those who received their PhDs between 1970 and 1980; and those who received their PhDs after 1980. Sixty physicists were included in the study. Roughly equal numbers of scientists (about 20) were selected randomly by cohort and institutional type; the institutions themselves were selected for their ability to capture as many scientists as possible to fill the cells of the design. A summary of the design and the distribution of respondents by institution and cohort is presented in Table 1.

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<td>Elite</td>
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<td>8</td>
<td>23</td>
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<tr>
<td>Pluralist</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>18</td>
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<td>Communitarian</td>
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<td>Total</td>
<td>22</td>
<td>16</td>
<td>22</td>
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**TABLE 1**
Number of Scientists, by Type of Academic Institution and Cohort
I asked all of the scientists a set of questions about their professional biographies and how they experienced their careers. The interview protocol was divided into six parts, each dealing with social-psychological aspects of career experience, including: location in the division of scientific labor; past aspirations; present aspirations; generalized definitions of success and failure; ambition; and self-doubt about work. The interview protocol is presented in the appendix. The encompassing question 'What do you think about what you do?' is analytic. It is answerable through a triangulated analysis of responses to interview questions that mainly seek to elicit respondents' subjective perspectives on their unfolding careers.

In the present study, institutional type and professional age/career stage are the chief analytical dimensions, and the study uncovers significant differences along these dimensions, as we will see. Person-oriented approaches may also emphasize other dimensions, such as gender, race, specialty area, educational background, political identification, or religion, common to many variable-oriented approaches to studying careers (for example, Sonnert & Holton, 1995; National Research Council, 2001; Xie & Shauman, 2003; Fox, 2005). For instance, one could design person-oriented research to address questions such as: How, if at all, does the experience of scientific (or other forms of work) vary by younger and older cohorts of men and women?; Do aspirations for professional achievement, at various career stages, vary systematically by the type of doctoral-granting institution?; or, How do academics construe success norms and how do they vary by academic field? Regardless of the analytical dimension(s) adopted and the research question(s) posed, the aim remains the same: to understand subjective careers in terms of dimensions of theoretical significance to the research question, in order to locate people and their careers 'in context'.

Illustrative Findings

In principle and in practice, the results of person-oriented approaches locate research subjects in declared contexts and enable an audience to understand more fully how respondents interpret experience in light of these contexts, thus giving rise to situated identities, both individual and socially shared. Thus in this instance we may illustrate how scientists come to understand themselves and their careers by virtue of career stage and the types of institutions in which they work.

To see what this contextualist approach can offer by way of empirical data, I offer illustrative examples of accounts scientists provided about their unfolding careers; I do so in terms of the research dimensions – time and place – that organized the study. Results from other contextualist studies may also organize and explain results in terms of the analytic dimensions employed in the research.

In the illustrative accounts below, I invoke the place of the research. We are able to see the ways in which scientists at elite, pluralist, and communitarian institutions come to conceive of their work and careers. The accounts
are representative of how scientists construe their careers unfolding in these structurally and culturally distinct scientific contexts.

In the *communitarian* context:

I had a pretty good idea what I wanted to be doing twenty years down the road, ten years down the road. I was envisioning developing a relatively strong working group. If I could bring in people who could support me and what I was trying to do, and I could interact with them, we could have a pretty good working group in, say, astrophysics, stellar evolution, or in nuclear astrophysics. Initially it looked very promising [but it never came to pass]. So my aspirations were blunted at a relatively early stage. Within the first five or six years I could see that nothing was going to really be fulfilled and promises were not going to be kept. I wanted to be doing research, I really wanted the research to work extremely well, as most researchers do. I would say that my aspirations haven’t been fulfilled at all. To that degree it’s been very unsatisfactory in my mind. It’s been very unrewarding. My professional development has been somewhat thwarted. I’m not doing today what I had expected I would be doing. And so you learn to release those kinds of fantasies and deal with reality and take what’s given to you. You make the very best you can out of it.

In the *elite* context:

I’m afraid my ambitions have grown … I’m given this remarkable opportunity very few people in history have had, that is, to work for some major research university with a secure position. I have no excuse really … The dream is to discover some fantastic new effect that knocks the socks off my friends and colleagues, that knocks the socks off the community, so that when I walk down the corridor, the young students know me and say, ‘There goes [Silverman], he invented the [Silverman] effect.’ That’s what I want; I want my effect. I want to be the first person to predict such and such an event and for it to be … I can even smell what it’s like already. It has to be something which once you think about it, is very reasonable. Very surprising at first sight, but at second sight, yes, of course, that’s how it had to be. I want one of those. I want my Josephson effect, my fractional quantum Hall effect.

In the *pluralist* context:

My aspirations were to be at a higher-prestige university, initially – Berkeley, Harvard, MIT – types of places like I went to as a student. I was able to get into the best programs as a student … Ideally, I would have, at that time, would have wanted to be a successful scientist at one of those leading institutions. My view of life and career and institutions in general has changed a lot. I think I’m quite content not to be there. It’s hard enough at what I would consider a second-tier institution like [this one] … I’m looking for more personal stability now. I want to be able to spend some time on things other than my profession. My family – I just had two kids. That is important to me as well.

***

Ultimate success is a complete life. It’s putting it all together. And physics is just a piece of your life. If physics is your whole life, then you can’t have ultimate success. Ultimate success is putting together a job that you enjoy
when you get up every morning. And the rest of your life: your family, your children, your friends, all the other activities. It's not winning a prize or stuff like that. It's the whole package that comes together. Your wife has a career, and she's doing well, and she's happy in it. Your kids do well and grow up and pursue whatever they are going to do well.

In these illustrative accounts, as in the accounts more fully presented and analyzed in separate work (Hermanowicz, 1998), we are able to observe systematic differences among accounts by scientists who spend their careers in different places. The scientists associated with the different institutional types differ in their aspirations and satisfactions, the type and magnitude of professional recognition they seek, and how they orient their careers. The starkest contrasts appear between scientists in elite and communitarian contexts. Scientists in pluralist contexts, owing to their collective identity, represent hybrids of the other two types; their accounts stress this modulation or middle position.

We are able to discern other patterns by taking account of time, as indicated by the early, middle, and late career phases of the scientists. To illustrate one set of patterns and in the interests of parsimony, I focus on the communitarian context, and present representative accounts from communitarian scientists at early, middle, and late stages of their careers. A full-blown career study, in which analysis of data must form the core of the work, would of course compare and contrast an extensive presentation of findings by phase across all of the contexts of scientific work (for such an analysis, see Hermanowicz, 1998).

Career phases are defined loosely to avoid the problems of cohort-centrism characteristic of ontogenetic stage theories (cf. Erikson, 1950; Levinson, 1978, 1996; Dannefer, 1984; Riley et al., 1988). Early career is defined as the assistant professorship, normally lasting up to 7 years. Middle career is defined as the associate professorship, normally lasting about 5 to 10 years and on into the first 5 or so years of the full professorship. Late career is defined as the full professorship roughly beyond its first 5 years. These career phases are so designated because they correspond generally to how academics conceive of and refer to the major phase durations of their careers.

Communitarians, in early career:

I've started considering small businesses and ways of making money by devising products, and I think that might be an interesting alternative ... something like writing software or applying some of the stuff in the lab — applying diamond film research to making new products and selling them. Also just doing something totally different that's more in the mainstream of the economy, like selling insurance or the stock market, something like that. I haven't really been getting more involved either in the stock market or anything else, but I have thought about it as an alternative, mainly because the monetary rewards are so much greater. It would have to be a full-time job because you have to know what's going on, you have to read the newspapers, you have to see how the stocks are doing. It's a full-time job. That's what everyone tells me. I may very well do that because you can make so much money. Probably a six-figure salary would not be out of the question if you devote 8, 10 hours a day to it.
Communitarians, in *middle* career:

[What I dream about is] forming a company, taking it public, making a number of millions of dollars. I don’t know. There is not much more I can do here, I don’t think. I am involved in companies now ... as a stockholder. I have been involved in companies before. This was a private company that was formed to, back when the oil business was going well, back in the late seventies ... this company was designing software to go with the down-hole tools. These are tools that are put down an oil well and radiate the formation, and then [we] look at what comes back from the radiation to tell whether there is oil there or not. First I was going to be given one-third of this company, and we would give 80 percent of our stock to [another company], and they would give us a comparable amount of their stock. I was on a retainer; I was paid quite a bit of money, plus given a car to drive because I had to drive to [an adjacent city] a couple of times a week. That was just a lot of fun.

Communitarians, in *late* career:

Studying physics hasn’t really moved me much further here from where I started, meaning that what drew me into physics at first, I thought well, there are a lot of interesting secrets in nature that could be discovered and that this would give me a much better understanding of the world around me and all that kind of stuff. But I find now that physics has not provided those answers or that satisfaction, and I don’t think it ever will. One has to question, what’s really the point of it? I might decide that I don’t want to be active in the day-to-day research program, rushing down to the lab, putting this together and that together, and so on. Cranking out results. I guess I’ll probably give up doing that. I’m not sure exactly what I will do really, to tell you the truth. I might get interested in peripheral things. I find computers kind of fascinating; that’s something that I didn’t have any exposure to while I was a student; it’s all new. And I may find something else that interests me, but it probably won’t be what I’ve been doing for the last 25 years or so. It will probably be something different.

The accounts reveal systematic patterns across the cohorts of communitarian scientists: we are able to observe patterns of commitment to and motivation for scientific work, as well as levels of identification with science and its institutional goals. Among communitarians, commitment, motivation, and identification with science as a profession weaken. Instead, scientists progressively entertain commitments and identifications with activities outside their professorial roles. This pattern develops early in the career, where once professional research aspirations were paramount, and intensifies over time as scientists, working within the constraints of the communitarian context of science, progressively realize how small their chances are of making a major scientific discovery and getting rewards for research achievement.

What is the researcher to do with such person-oriented accounts after presenting and analyzing them along the dimensions of the research? We turn to the critical step of codification. In codifying results, we create greater analytic leverage on the data by seeking to make more general statements about the patterns they exhibit. Codification thereby creates a firmer ground on which to draw and/or speculate about similarities and differences about
careers in other fields or lines of work. It thus serves the goal of progress by helping to identify avenues of possible similarity and difference, which future lines of inquiry may build upon.

Key Generalizations

Specific generalizations can be drawn to illuminate the major distinctions across cohorts of scientists and contexts of science. Eight dimensions of identity surfaced after qualitative data coding and analysis to ground these comparisons; these dimensions together with the substantive findings among the groups of scientists are presented in Table 2.

Elites, pluralists, and communitarians focus their early careers on research, the expected fruits of which translate into promotion and tenure. But during their first few years as assistant professors they undergo major changes in self and outlook on the career that develop over a longer period of time. By mid-career, the focus of the career becomes more diversified among pluralists who increasingly emphasize teaching, and shifts more

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radically still among communitarians who at this stage complete the process of significantly modifying their ambitions. Among elites in the middle career, research continues unequivocally to hold sway, even as occasional members declare their interest and seriousness in the teaching role. These patterns hold steady, and intensify into late career.

Professional dreams follow an accompanying pattern of evolution across the settings. They intensify among elites who learn how to narrate an early career in which their ambitions grow. Pluralists begin to re-scale their ambitions in ways that are exemplified and realizable within their environment. Dreams of communitarians are radically diminished shortly after arrival. These patterns maintain themselves and intensify through middle and late phases. Senior elites maintain their status and involvement; as senior pluralists curtail involvements and see their ambitions subside; typical communitarians rarely entertain professional dreams for long.

All scientists who have passed through the filters and survived the competition to join faculty ranks in the late 20th and early 21st centuries seek great recognition — this is compatible with the institutional goals of science (Merton, 1973 [1957]). But as the foci of careers change and as the fuel for professional dreams replenishes itself or runs dry, the recognition that scientists seek also evolves in systematically distinct ways. Elites seek major recognition through their careers, their self-identities firmly bound up with achievement. Pluralists come to seek average recognition in mid-career and generally sustain that orientation into late career. Faced with comparative lack of opportunity and constraints against seeing their research expectations realized, communitarians seek little or no recognition from the wider professional community.

As careers in all three settings begin with a primary research focus, the orientation that elites, pluralists, and communitarians bring to their work is moral, compatible with institutional goals: work is an end in itself, directed toward the extension of socially certified knowledge. Realization that these goals can only be moderately satisfied or not satisfied at all makes pluralists, but especially communitarians, develop a utilitarian outlook on their work. Science becomes more of a means to an end and (particularly among communitarians) a ‘job,’ rather than a vocation and calling.

Changes in work orientation are accompanied by the way in which scientists narrate the relative place of work and family in their lives. Work remains central for elites (even as families arrive, develop, and impose demands on time), but for pluralists and especially communitarians, families assume a more significant role in identity construction and self-presentation.

The above patterns lead to overall characterizations of workplace and the person. The elite world is viewed by elites as a ‘burden’ because institutional mandates for achievement and the internalization of lofty performance norms demand sustained effort. Succeeding in the elite world by satisfying these expectations becomes an ‘obligation’ felt at both institutional and individual levels. For these reasons, satisfaction among elites can best be characterized as ‘medium’: institutional position provides an objective measure of success but at the same time continuously asks that one
great accomplishment be replaced by another, thus leaving many elites in a perpetual state of never feeling fully satisfied.

Communitarians view their professional milieu as ‘stymieing’ because most have had to make substantial and unexpected adjustments in the kind of career to lead. Consequently, professional satisfaction among communitarians can best be described as ‘low’. This is not to say that communitarians never come to achieve a sense of satisfaction and peace with their place in the profession; many of them do just this. But even after this process is completed by late career, the typical account underscores these issues as highly consequential in shaping the person who presently speaks as someone who has ‘come to be’.

Pluralists view their occupational world as a ‘happy medium’ because it allows them to pursue their work without giving up on all of their ambitions. At the same time, it does not pose the onus of expectation characteristic of elites. Pluralists can embrace research to a degree, even to a high degree, just as they can (especially in middle and late phases) identify more with teaching – all without serious sanction. Variety, as their collective identity attests, characterizes life in the pluralist world. These conditions lead to relatively high overall satisfaction with self and institution.

This study demonstrated that elites, pluralists, and communitarians use systematically different rhetoric to publicly present their life courses. The idea of the career narrative was developed to characterize the dominant type of passage through each one of these academic worlds. Career narratives are here defined as the dominant communication patterns that characterize how people order and present their passages through time and place (cf. Polkinghorne, 1988; Buchmann, 1989; Bruner, 1996). Knowing ‘how to be’ a senior and acceptable elite entails a significantly different repertoire of roles, practices, and rhetoric than knowing how to be a senior and acceptable communitarian.

Elites see themselves and are seen by others as pushing to get ahead, their self-identities competitively staked in attainment and recognition. The life course consists in principle and often in practice of a steady upward climb. This is a world in which the self is in a perpetual mode of becoming; the career narrative of this world embodies this mode.

The leading trend among communitarians consists of being. They describe themselves in ways that highlight steadiness. They often ‘get stuck’, largely because the institutions in which they are employed do not facilitate work that can be translated into upward mobility. After early career phases, little social control regulates or helps to inspire peak performance. Their career narrative underscores this leveling-off.

Pluralists portray themselves in both ways, particularly after early career phases when jobs are secure. The most typical pluralist’s orientation to research recognition is strong in early and mid-career and levels off thereafter. The typical pluralist in late career decelerates ambition gradually, while elites continue their upward climb and most communitarians have generally given up their ambitions.

While the evidence strongly suggests three predominant science career patterns, each one characteristic of its own academic milieu, a portion of
the data also reveals variation within each of those worlds. Our ability to uncover both between- and within-group variation is a goal of the comparative method outlined by Ragin (1987). We are able to deduce typical, predominant patterns in the data, but we do not ignore exceptions to those typical patterns, especially if there are multiple cases that constitute sub-patterns to the overall trend.

On the one hand, we might expect individuals to conform to group performance norms and patterns of professional life, since those groups exert social control over their members, thus establishing between-world differences—in this case of science. Previous empirical research on science careers has consistently borne out this observation. As Long and McGinnis stated: 'Once employment is obtained in a specific context, individual levels of productivity soon conform to characteristics of that context' (Long & McGinnis, 1981: 422). The present study shows that, to a great degree, the ways careers come to 'sound', 'get narrated', and be interpreted also conform to local standards, producing distinct scripts between the worlds.

On the other hand, we might also expect some individuals to deviate from local patterns because, following Durkheim (1982 [1895]), all groups contain deviants, which helps to socially establish what is typical for the group. With the present data, the number of cases in each of the three worlds that deviate from locally dominant patterns is small—not more than three. What we have then are three general patterns of career experience and meaning-making, along with some identifiable sub-patterns in each of the three settings. Some elites slow down their productivity, and come to look and sound like, as well as identify with, elite pluralists or select communitarians. Some communitarians speed up, and come to look more like pluralists or select elites. Some pluralists also, when they substantially speed up or substantially slow down, deviate from their locally modal pattern, and their careers come to resemble (objectively and subjectively) extremes at either one of the elite/communitarian polarities.

Thus, while individuals assume their identity as an elite, pluralist, or communitarian by virtue of their location in the institution of science, their own performance patterns and ways of accounting for their careers can compound those identities, so that, in a minority of cases, we can find permutations such as an 'elite communitarian', a 'communitarian elite', or an 'elite pluralist,' among other possibilities. This means of conceptualizing the profession of academic science and the attendant patterns of identification moves us toward a more nuanced picture of occupational life than previous studies of the profession have painted.

Person-oriented approaches to studying careers, like all social inquiry, must address the issue of generalizability. Recall the objective of person-oriented approaches: to reveal particular social processes endemic to group life which establish individual and collective identity among those groups, as opposed to statements about empirical regularities across wide-ranging populations. Nevertheless, sociologists pursuing a person-oriented approach need to be equipped with intellectual capital to assess the boundaries within
which general statements — about social processes or empirical regularities — may be made.

In this specific instance, we may support the generalizability of our findings by referring to work on scholarly consensus in the sociology of science and the sociology of higher education (Zuckerman & Merton, 1971; Hargens, 1975; Braxton & Hargens, 1996). Such work has investigated how consensus in a field shapes the ways by which members judge a variety of phenomena germane to those fields, such as the importance of specific research problems, methods used to investigate research problems, and theories used to explain research findings. Consensus also informs the criteria that members of a field use to judge their own and others' success; in short, how careers are understood 'to go'.

Physics is a high consensus field (Hargens, 1975; Braxton & Hargens, 1996). We would therefore expect relatively high uniformity among its members about success norms in physics and about how a successful career in physics is defined. Physicists often describe how they are able to rank-order the achievements of fellow physicists. Such an exercise would be considerably more difficult, and perhaps impossible, in low consensus fields. We may expect to find the same or similar social processes in other high consensus fields, such as chemistry and mathematics, and in high consensus specialty areas in what are otherwise low consensus fields, such as demography within sociology. In low consensus fields, such as English and comparative literature, we might expect to see a greater variety of patterns.

Career Contributions

What does this contextualist approach offer? What are the hallmarks that distinguish it from other conceptions of careers? The reasons and theoretical significance for following this approach are fivefold.

The approach uncovers how self-identity is constructed. By self-identity, I refer to the inner side of an individual, the side shaped and informed by the outside world but normally known to the individual alone. Occupational self-identities, as the term suggests, arise and change in specific social arenas of work where people develop conceptions about the symbolic meanings of what they do. Thus, when people address the question, 'What do you think about what you do?', we are able to more clearly know 'what makes them tick' or fail to tick. If, for example, we stopped with the question 'What do you do?', we would have only an incomplete and often inaccurate sense of people's identities, relying heavily upon stereotypes and occupational images to guide the way in which we know people and their work. We have indeed tended to stop with this question (as both lay people and as sociologists), because it bypasses the rocky terrain of people's thoughts, feelings, wishes, doubts, and aspirations tied to their work (cf. Blau & Duncan, 1967; Spilerman, 1977).

The approach offers a lens on institutions — how they are built, maintained, and changed (Barley, 1989). Subjective and objective careers reveal considerably more than attributes of the people who lead them (Stebbins,
1970). They are representations of life as lived in particular organizational environments, and they thus convey the culture and structure of social organizations that endow careers and lives with meaning (Trice & Beyer, 1993; Czarniawska, 1997). For example, studying the early careers of different cohorts allows us to see how institutions change (such as in productivity expectations) and how those changes in turn alter the ways in which work is experienced and interpreted by members of those cohorts. In this instance, being a scientist who came of age in the 1960s means something altogether different than a scientist who came of age in the 1990s. Those differences demonstrate how organizational life is experienced, and how the career is structured and interpreted, at different times. From this vantage point, the contextual study of careers ultimately becomes a way in which to view the process of social (and consequent individual) change.

The approach constitutes a base of social–psychological differentiation, and thus a way in which to examine fundamental principles and processes of social organization (Strauss, 1978, 1993; Becker, 1982). 'What do you do?' – the simpler and more straightforward of the two questions – stratifies by a vertical system of occupational titles thought to be objective (that is, we think doctors are better off than janitors [Nakao & Treas, 1990]). 'What do you think about what you do?' differentiates on the basis of people's subjective interpretations of occupational experience (that is, many janitors say they are happier than doctors do in surveys [cf. Light, 1980; Ashforth & Kreiner, 1999]). The latter question invites informants to comment on how they 'make meaning' of their careers and themselves in relation to their work. This domain is a major arena with which to assess social difference, including gender and race, among other social categories. Social differentiation is manifest when groups create, maintain, and alter boundaries between themselves and others, constituting an organized set of occupational worlds (Laumann, 1966, 1973; Strauss, 1978, 1993; Heinz & Laumann, 1982). 'What do you think about what you do?' places agency on an equal footing with culture and structure and connects micro and macro levels of analysis by viewing the individual as a constitutive force in how work is shaped and how it shapes those engaged in it.

The approach leads to a more nuanced understanding of job satisfaction. The importance of job satisfaction is indicated by the volumes of work written on the topic (for reviews, see Cranny et al. [1992] and Lincoln & Kalleberg [1990]). Yet nearly all of this work has been conducted using cross-sectional surveys with the intention of drawing broad generalizations for wide populations (for example, Campbell et al., 1976). Job satisfaction, however, is an experientially rooted concept. It ebbs and flows in conjunction with the twists and turns that careers invariably take. Closed-ended questions coded with discrete hierarchies of magnitude tell just part of the satisfaction story. Survey satisfaction studies almost always conclude that most workers are happy (Lincoln & Kalleberg, 1990; Firebaugh & Harley, 1995; see Castillo [1997] for comment and critique). Asking 'What do you think about what you do?' is likely to reveal a finer-grained and more dynamic picture of job satisfaction.
The approach is demystifying. Hughes (1958) observed how myths are necessary to preserve occupational reputation. We simply would have a different view of lawyers, doctors, or waiters if we were privy to all that they did and said backstage (see Ashforth & Kreiner, 1999). But, in well-crafted interviews and in well-executed ethnographic work, that is precisely what we discover when we ask the question 'What do you think about what you do?,' for we are asking people to talk about what they normally keep behind the scenes, but which often is front and center in how they make meaning and see themselves in their work. It may be the case – it is perhaps always the case – that 'what people do' and 'what people think about what they do' are two starkly different constructs. We know, for example, that such is true in law, among the most prestigious professions since the 1964 occupational ranking (Hodge et al., 1964; Nakao & Treas, 1990), but also one in which numerous practitioners are dissatisfied over the long term (Wallace, 1999). Images of work and occupation do of course have social (not to mention economic) value. Their importance in locating people in social space was stressed at the outset. Candor about one's occupational conditions, however, locates people in social space more accurately.

Each of these domains comes to light by pressing the question 'What do you think about what you do?' posed in multiple ways, across multiple topics, in interviews with people about their work. The approach presented is 'people-oriented', and it accordingly brings people into the analysis as active agents that shape and are shaped by their social world of work. Its 'people-orientation' raises a sixth and final item, by default if not by necessity, where studies of careers in context will make significant strides, both in and beyond science.

The approach speaks to a large audience. 'What do you think about what you do?' is a central question at numerous times in (if not throughout) one's life to nearly all of those who work or who have worked. It is assuredly central to all who will work, as any teacher of occupations and scientific careers can testify. Its centrality is measured by the role it plays in establishing identity; this confers the question's wide-ranging relevance. In addition, the question contributes to the development of a body of work in sociology in the ways discussed above and thus speaks to sociologists interested in these concerns. We would expect answers to the question to differ from one occupation to another, and in this sense it distinguishes among groups (as outlined under 'social-psychological differentiation'). But the question is likely to lift boundaries as well by the size of the audience to which it plays. The centrality of the question, and of related questions that similarly call for candid self-appraisal, makes us interested in the answers, whether they come from physicists, lawyers, or longshoremen. Answers to these questions, like the questions themselves, are therefore also of broad significance, uncovering similarities and differences in how people create careers.

Debates between variable- and person-oriented approaches will likely continue (see Settersten, 1999: 212–14), but we have yet to fully see what person-oriented approaches can offer. We need a broader range of such work, on scientists and on others, to adequately assess its strengths and
limitations as compared with variable approaches. The argument I have presented maps a people-crowded road traveled; the outline extends an invitation for others to follow.

Notes

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Appendix

Interview of Scientists

This is a study about the aspirations of academic scientists. The questions I would like to talk about deal with one's individual identity and how that identity has unfolded over time. Some of the things I will discuss ask you to reflect upon yourself and often involve making personal judgments that will touch on various professional and related personal topics. Your participation in this study is strictly confidential. Interviews are normally tape-recorded, and this simply provides for accurately keeping track of information. Subsequently the tape will be destroyed. Your participation in this study is important. However, should you at any time wish to stop, you may do so without prejudice to you, and at any time you should feel free to ask me questions concerning the interview or the study. May we begin?

A. Location in the Division of Scientific Labor
   1. Can you describe the type of work you do?
   2. To what extent is your work collaborative?
   3. [If collaborative] How large are the collaborative teams on which you work?

B. Construction of Personal Histories and Personal Identities
   1. What aspirations did you have as a graduate student?
      Probe: What did you want to attain?
   2. In everyone's career there are 'roads not taken' -- different avenues you might have followed. What have been the ones for you?
   3. What consequences have these outcomes had on your career?
   4. How did you come to arrive at this university?
   5. You were a graduate student at __________. Is this the type of university where you wanted to end up?
   6. How have your aspirations unfolded since being a graduate student?
   7. How has being at this university affected your career?
      Probe: How has this university constrained your career? How has it helped your career?

C. Generalized Definitions of Success Ladders
   1. What do you associate with a 'successful' career in physics?
   2. What do you think are the most important qualities needed to be successful at the type of work you do?
   3. What does ultimate success mean to people working here?
   4. Is there an understanding of a minimum needed in order to maintain respect among people here?
   5. Is there an understanding of a failed career among colleagues here?
   6. Taking your colleagues in this department, how would you say their success varies?
Probe: Have they advanced at the same rate?
7. Where do you place yourself among that variety?

D. Conceptions of Future and Immortalized Selves
1. What do you dream about in terms of your career?
2. What ultimate thing would you like to achieve?
3. How do you envision yourself at the end of your career?
4. How would you like to be remembered by your colleagues?
5. What about your life do you think will outlive you?

E. Ambition
1. Would you say that you are ambitious?
   Probe: Would you say that you have a strong will to succeed?
2a. [If yes to 1] What is your ambition?
2b. [If no to 1] Would you say that you have a strong will to succeed?
3. Where does your ambition come from?
4. What role do you think ambition plays in your life?

F. Self-Doubt/Self-Fragmentation
1. What would you like to be better at?
2. Has there been a significant time when things really did not go the way you wanted them to?
3. What major doubts have you had about yourself?
4. Have there been times when you felt that you let yourself down?
   Probe: Have you ever felt disappointed in yourself?
5. Has there been some inner conflict or turmoil that you have sought to understand in your life?

We are near the end of the questions I have.

6. I would finally like to ask about something you are most proud of. What stands out as something that has left a strong positive impression on you?

Joseph C. Hermanowicz is Associate Professor of Sociology and a Fellow in the Institute of Higher Education at the University of Georgia. His work examines scientific careers, the academic profession, and the reward systems of higher education. His current project is a longitudinal study of careers in science that follows the same scientists over time.

Address: Department of Sociology, The University of Georgia, Athens, GA 30602, USA; fax: +1 706 542 4320; email: jch1@uga.edu