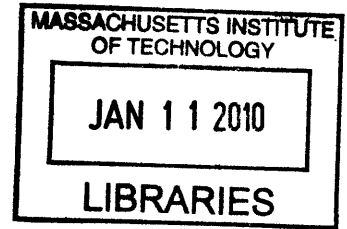**Managing Everyday Identity Challenges At Work:**
Stories from a Biotech Company

by

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Managing Everyday Identity Challenges At Work: Stories from a Biotech Company

by

Heng Xu

Abstract

Work identity, how we view ourselves in a working capacity, is a central part of who we are and an indispensable element of our lives. Yet, difficult moments frequently occur that challenge our identity as competent and worthy workers. The ongoing construction of work identity is the focus of this thesis. By studying three employee groups in a biotech corporation (scientists, purchasers, and contractors), I explore the question of how people manage identity challenges at work. I observe three primary approaches: interpretive, relational, and presentational.

I find that scientists face the charge of being lesser scientists concerning their move from academia into industry. To manage this challenge, the scientists primarily use an interpretive approach, developing frameworks that value practical research and stress the intellectual content of industry work. Their approach forms a boundary inversion strategy, altering the normative order of the social boundary between academic and industrial science. The purchasers experience a different type of challenge when they strive to be experts but their clients see them as clerks. With a relational approach, purchasers seek to change practices in joint projects and ultimately to reshape their interaction with clients in a manner more consistent with their aspired expert identity. This approach forms a boundary expansion strategy to shift the task boundary between purchasers and their clients. The third group, contractors, encounters a liminal state of being neither an insider nor an outsider of the company. They rely heavily on a presentational approach to project themselves like regular employees with a strong work ethic. This approach forms a boundary crossing strategy as individual contractors seek to become permanent employees.

Comparisons across the three groups show that several boundary characteristics – the level of institutionalization, the permeability for social actors, and the relative status difference – are important to shape the micro responses and macro strategies that people adopt to manage their identity challenges, and ultimately remake the social boundaries that give rise to these challenges.

Thesis Supervisor: John Van Mannen
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Fiona provided critical insights on scientists' lives as I worked through my chapters. As a new generation of scholar, she complements the rest of the committee with a fresh perspective. She helped me to comb through the observations and find what is interesting, a difficult task for ethnographic work. A mother with young kids herself, Fiona gave me much needed baby items as well as childrearing advice.

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CHAPTER 1: Introduction: Identity Work

"We [social scientists] need to rid ourselves of any concepts which keep us from seeing that the essential problems of men at work are the same whether they do their work in the laboratories of some famous institution or in the messiest vat room of a pickle factory. Until we can find a point of view and concepts which will enable us to make comparisons between the junk peddler and the professor without intent to debunk the one and patronize the other, we cannot do our best work in this field" (Hughes, 1971 p. 342)

More than three decades ago, Everett Hughes set as a goal for social scientists to find the characteristics and social mechanisms governing people of all walks of life, across "the humble and the noble." This dissertation explores one concept underlying the work experience of laboratory, office, and factory workers. The concept is that of *work identity*, a term referring to how we see ourselves in our working capacity (Ibarra, 2003). As both casual observation and academic writing indicate, work is a prominent part of our lives. The scenes are familiar: commuters rushing on and off subways, workers eating lunch in front of their computers, and employees carrying work home for the night and weekends. Going to work every day not only means getting a check to pay the bills. The workplace has been a source of esteem, pride, satisfaction, frustration, or anxiety. When we return home from work at the end of the day, we bring back the joy and the anger. We talk about jobs at parties, think about careers during vacations, or even dream of work at night.

Academics have extensively documented the extent to which work is inseparable from other parts of life. In *The Overworked American*, Juliet Schor (1991 p. 145) estimated that over the last twenty years Americans have gradually prolonged their working hours by an additional day. Today, women and men, working class and

professionals, single and married, spend considerable time at work. Beyond time spent,

high work commitment provides another illustration of the extent to which work

permeates life. Hochschild (1997) found that a growing number of working women, in

addition to working men, have come to regard work as "a source of security, pride, and a

powerful sense of being valued" (p.247). They have joined a growing group that says,

"Thank God, it's Monday." The 2006 General Social Survey (Davis *et al.*, 2007) asked

over 4000 adults whether they would stop working if they were to get enough money for

a comfortable life, and 69% responded that they would continue to work. Consistent with

previous results, the data suggest that people are highly committed to work as a central

aspect of their lives, what Robert Dubin (1956) once called the "central life interest."

Work is so essential that some claim that "you are what you do" (Gini, 2000).

Yet, work identity is delicate and fragile. Our dignity as honorable, competent,

respectable, irreplaceable employees is often called into question at the workplace. Work

identity challenges are pervasive. They are not always of a dramatic and drastic sort but

are embedded in seemingly (un)eventful daily routines. Ambiguous gestures from the

boss, casual comments from colleagues, indifference from customers, or suspicious looks

from outsiders can undermine our worth as an honorable employee with important work

to do. The challenges can be experienced from the beginning of a career (Becker *et al.*,

1961; Van Maanen, 1975) untill the end of it (Ibarra, 1999). They are shared by people at

the low rung of the socioeconomic status ladder such as maids, waiters, cleaners,

operators (e.g. Ehrenreich, 2001); those with moderate status such as nurses, social

workers, HR professionals, and programmers (Bowker & Star, 1999; Meyerson, 1994);

and even those lawyers, scientists, physicians, and executives who have a great deal of prestige attached to their work (Cassell, 1991; Khurana, 2002; Sutton & Callahan, 1987).

Ongoing construction of work identity and the effort to overcome identity challenges are essential problems for people of different walks of life, problems that in Hughes's (1971) vision put the junk peddler alongside the professor. How do people of different occupations meet the challenges to their work identity? This dissertation addresses this research question by comparing three occupational groups in a biotech company – its scientists, purchasers, and contractor workers - examining the strategies they used, and investigating the conditions enabling particular response patterns.

In this chapter, I provide first a brief discussion of the concept of identity work. The interplay between the self and the other provides the analytic foundation for this study. Next, I explain the phenomenon of identity challenge and its significance in the workplace. I follow with a summary of response strategies to identity challenges as discovered in past studies. Finally, I show how the research reported here adds to understanding of contemporary work life.

Identity Work, the Interplay between Self and Other

Social scientists' understanding of identity in the past decades has shifted from identity as an individual self based on transcendental and essential attributes to identity as a social self arising out of everyday interaction.[1] The social self view originates with the pragmatists who took the self to be fundamentally experiential. The most influential work of this school includes William James' "empirical self," Charles Cooley's "looking-glass self," George Mead's "interacting self," and Erving Goffman's "situated self." Following

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[1] For a more detailed review of the shift, see (Holland, 1988; Holstein & Gubrium, 2000).

this tradition, I adopt a definition of identity as "establishing *what* and *where* the person is in social terms" (Stone, 1962, p.93). It locates and situates a person in social space by virtue of associated relationships and memberships. Identity is intertwined with, but different from, notions of self esteem, self worth, and status. When one's identity is challenged, one is likely to experience low esteem and self worth, and a feeling of losing social status.

In analyzing the challenges faced by individuals and the strategies they adopt in response to such challenges, I focus on the interface between the self and the other, employing the analytic notion of the "other." Identity is not merely a construction of one's mind, but a product of social dynamics. It is co-constructed by the focal individual and other people during interaction. The concept of the "other" is fundamental in this theoretical perspective. The emphasis can be traced back to Mead's writing (1934). He argues that the full development of an individual's self requires taking into account the attitudes of "the generalized other," thus entering into a special set of social relations with other people. "It is in the form of the generalized other that the social process influences the behavior of the individuals involved in it and carrying it on, i.e. that the community exercises control over the conduct of its individual members; for it is in this form that the social process or community enters as a determining factor into the individual's thinking" (p.155). Only then does the "organized self" emerge.

In his classic work, *Mirrors and Masks*, Strauss (1969) writes "identity is connected to the appraisals made of oneself - by oneself and others. Everyone presents himself to the others and to himself, and sees himself in the mirrors of their judgments" (p.9). Identity construction includes a reflexive process wherein one assesses and reacts

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to others' judgments of oneself. In addition to sensitivity to the other, selection of the

other is also important for the construction of identity. We do not respond to everybody

else's opinion equally. So those whose opinions we attach priority to is a crucial element.

Hughes (1971) points out:

> "Part of the very struggle to be a man is the search for one's 'others.' It takes
> intelligence to find the 'others' that will bring out the best in one's self, and it
> takes courage to follow – no, not follow, but to walk abreast with that collective
> 'other,' ready made or created by mutual effort – when one has found it" (p.351).

Sometimes the others are imposed on us; at other times we choose them. Either

way, the interface is where identity is negotiated and maintained. In *The Presentation of

Self in Everyday Life*, Goffman (1959) detailed individuals' intricate management of self

in daily encounters. Developing a dramaturgical framework, he anatomized how people

control the signs they "give" (intentionally) and "give off" (unintentionally) based on the

audience's feedback. In *Stigma*, Goffman (1963) elaborated the struggle between a

stigmatized person and the normal. Both learn to interact with each other in ways that

minimize as well as preserve their difference. It is through each encounter that the

stigmatized negotiates what it means to be a deviant. In each situation, people are

stratified into a number of social groupings. The meanings of these categories are far

from inherent or stable. Rather, they are enacted, contested, and adjusted through the

interactions members have amongst themselves and with members of the other groups.

Social psychological studies have provided cognitive explanations of how people

make important distinctions between themselves and others. Theories of inter-group

conflict specify that individuals classify the world around them into in-group and out-

group through the process of self categorization. Then a self-enhancement process

develops norms and prototypes that depersonalize individuals in favor of the in-group.

Stereotypes grow to strengthen the in- and out-group distinction and provide individuals with the meaning of being in the in-group (Tajfel, 1982b; Tajfel & Turner, 1979).

Zerubavel (1991) identifies mental processes of "lumping" and "splitting" as essential steps in creating categorical differentiation, thus leading to conceptions of identity. Through the process of lumping, people put entities together, emphasizing their similarities and dismissing their differences. Simultaneously, splitting allows us to separate clusters of entities from one another. Individuals then associate distinct identities with entities that are separated, and attribute similar identities to entities that are lumped together. Consistent with the sociological perspective, the cognitive approach does not imply that the drawing of mental distinctions is an individual process. Rather, how entities are lumped and split is heavily influenced by collective norms.

Much of the literature has identified the interface between people and the other as a crucial locale for identity projects. I thus focus my search on the patterned actions and interpretations occurring at these locales. For each of the employee groups I examine in this study, I examine "the other" most salient for the natives and then look for how people perceive, talk about, and interact with those others. More specifically, I analyze how the interface with "the other" raises identity challenges for the members, and what they, in turn, do about them in their interactions with "the other."

Identity Challenge at Work

Identity claims are important because they establish a sense of who we are in social terms. Situations causing people to question the sense of self they have already embraced constitute what I call *identity challenges*. They create distinctions that make

one distant from an acceptable social group. They make us uncomfortable because they cast doubts on our feelings of worth, competence, and importance. They bring suspicion to our status and values. Identity challenges are similar to what Garfinkel (1956) calls "degradation ceremonies," any communicative work between persons whereby an actor is cast as lower in the local scheme of social types. Identity challenge may come from various sources associated with our ethnicity, nationality, sexual orientation, religious belief, political affiliation, and so on. Just as identity is adopted through social interactions, identity challenge is social as well. It occurs in social interactions and the interpretation of behaviors as challenging to one's identity is an outcome of collective socialization that is learned over time.

I focus my discussion here on work identity challenges. These are occasions when our self-view in the work setting is questioned, devalued or contested. Work identity challenge represents a social phenomena worth studying because it is both pervasive and consequential for organizational life.

Identity Challenge is Pervasive

Work identity challenges are widespread among employees. People experience them throughout their career as they join a profession, master the craft, and eventually leave it. In addition, people from the low rungs of the occupational ladder as well as those among the upper echelons all have moments of challenge as part of their workdays.

When people start a new line of work, acquiring the new identity is a paramount task (Van Maanen, 1973; Van Maanen & Schein, 1979). Longitudinal studies of medical students found that they are gradually socialized into the occupational idealism and

"begin to think that you are really saving lives or killing people" (Becker et al., 1961, p229). Similarly, after tracking a company of cadets at West Point for four years Lipsky (2003) wrote, "On R-Day [first day at West Point] you surrender your self in stages" (p145). The Army changed the identity of the cadets, taught the cadets a new way of speaking, standing, walking, sitting, thinking, and feeling. Those who could not shed their civilian identities were not able to leave as officers. Next, as people progress in their careers there are occasions when their ability is called into question and their devotion tested. Studies of high-tech workers show that the ongoing display of work commitment is part of the engineering culture (Kunda, 1992), often at the expense of family life (Perlow, 1998). The "centrality of the securing and regulating of identity" can also be found for other types of knowledge workers (Alvesson, 2001 p.883). Professionals are taught "a sense of awareness that this is not a job, this is you, it's a reflection of your own life" (Covaleski *et al.*, 1998 p.321). Finally, when people shift careers, they are often shocked by an identity crisis. In career transitional stages, Ibarra (1999) demonstrates that individuals are highly aware that the old identity – their "skin" that they have become familiar with and comfortable in - no longer works in a new role. To make a successful transition, they need to display a new self and craft new identities. For the consultants and investment bankers in her study, adapting to a new role was an anxiety-inducing process:

> "I have a huge hurdle in transitioning from seeing myself as 'the one who knows all the facts' to being an advisor to the client. It's like my whole basis for existence is cut away if I can't rely on having read more than everyone else, having looked at the analysis and understood all the points of view." (p.780)

> "My whole perspective has been flipped around.... I thought I had to be aggressive... But I overcompensated by being arrogant with the client... My

perception of myself is changing. It's scary and painful but I'm learning a lot."
(p.777, p.780)

Similar emotional experiences affect people in mid-career crises. Like other personal changes in adult life, career shifts necessitate "situational adjustments" (Becker, 1964); trigger an "unfreezing-changing-refreezing transformation" (Schein, 1979); and involve "self-transformations" after one moves from one role to another (Ebaugh, 1988). During this difficult transitioning period, the more socio-psychological support and caring they get from their social network, the more confidence individuals develop to overcome the career obstacles (Higgins, 2001).

Identity challenges occur to all of us. People at the bottom of the socioeconomic ladder frequently have their identity challenged. Snow and Anderson (1987) found that identity statements do not diminish over time for the homeless. They were "confronted continuously with the problem of constructing personal identities" because their daily routines regularly bring them in contact with other people. The challenge of maintaining self-respect thus became an everyday task. To capture this view, the authors coined the term "identity work" to refer to the ongoing activities that create, present, and sustain a person's identity. A large number of workers in this category do what Hughes (1958) calls "dirty work" - work that could be physically, socially, or morally tainting. It includes janitors (Gold, 1952), custodians (Ghidina, 1992), professional thieves (Sutherland, 1988), doormen (Bearman, 2005), park operators (Van Maanen, 1991), service people (Sharma & Black, 2001), bill collectors (Sutton, 1991), and many more. Overwhelming evidence suggests that the self esteem of "dirty workers" is constantly at risk because their jobs are generally viewed as unappealing and distasteful.

Members of the "semi-professions" (Etzioni, 1969) are not exempt from identity

challenges either. Studies of nurses and social workers reveal that their interactions with

physicians and staff are frequent occasions for identity work. They need to defend against

claims that nursing and social work represent repetitive drudgery (Allen, 2000;

Meyerson, 1994). A series of observations of skilled technical workers (such as medical

staff, computer personnel, and engineering technicians) suggest that the struggle of their

identity claims as experts or servants is "a theme of daily interaction" (Barley, 1996;

Nelsen & Barley, 1997).

The situation is not drastically different at the top of the occupational ranks. Elites

need to uphold their self claims in their daily routine too. Ethnographies of surgeons, for

example, show that they need to act "ballsy" and macho by making quick decisions,

caring about winning, being arrogant, liking sports and women, not wearing seat belts

when driving, and not wearing coats in the winter (Bosk, 1981; Cassell, 1991). The

shadow image of the hero is the "wimp" – an image they all try not to exhibit. Surgeons

are profoundly concerned about how colleagues evaluate them -- as someone competent

and exemplary, not inadequate or sleazy (Cassell, 1991; Kellogg, 2005). Work rounds are

problematic occasions where house staff can feel "humiliated" and "really worthless" if

attending physicians yell at them or they can build self confidence and earn trust if they

pass scrutiny (Bosk, 1981). Confrontation also occurs around test decisions, orders and

counter orders (Millman, 1978).

Other prestigious workers such as lawyers (Mather *et al.*, 2001) and professors

(Bailyn, 1993) and so on continually monitor how they present themselves to colleagues,

clients, students, and outsiders to maintain an identity consistent with their professional

norms. As top figures in the corporate world, CEOs need to project inspiration, optimism, confidence and a can-do attitude. Whether they do it naturally or are rehearsing it, CEOs face cultural and institutional pressure to act like a charismatic leader (Khurana, 2002). When a firm goes bankrupt, the CEO's identity is severely tainted (Sutton & Callahan, 1987).

Identity Challenge is Consequential

As the above review suggests, identity challenge is consequential for individuals. When views about themselves are questioned, people experience frustration, self-doubts, lower self-esteem, and even more severely, shame and stigma (Garfinkel, 1956). Managing identity challenges without incurring serious negative outcomes is important for people to successfully navigate their lives in general, and professional life in particular. This review suggests that to become an occupational member in good standing, to successfully perform on the job, to transition into a new career, all require effective construction and reconstruction of work identities.

Just as individuals need to successfully manage their identity, organizations need to understand and handle the identity dynamics of their employees to be successful. Organizational life is rife with uncertainty and there are many moments when employees' identity issues become prominent. A growing number of studies demonstrates that employees experience doubt and ambiguity about who they are and what kind of organizations they work for during times of spin offs (Corley & Gioia, 2004), bankruptcy filings (Sutton & Callahan, 1987), mergers and acquisitions (Buono *et al.*, 1985; Cartwright & Cooper, 1993; Quijada, 2007), layoffs (Heckscher, 1995), strategic

planning processes (Gioia & Thomas, 1996), public controversy (Dutton & Dukerich, 1991), unexpected external evaluations (Elsbach & Kramer, 1996), introduction of new technologies (Barley, 1986, 1990; Orlikowski, 1993), and employment of new team processes (Barker, 1993; Barrett *et al.*, 2007).

Identity dynamics are also important for the adoption of new work practices and cross-functional collaboration, two factors perhaps of increasing importance to organizations. Managers frequently adopt new work practices intended to improve efficiency and productivity for their organization. Many, if not most, of these changes affect how workers view themselves and their relations with others at work. Studying the adoption of self-managed teams, a practice sweeping many companies in the '80s and '90s, Barker (1993) found that production workers were no longer detached from the product of their work. Instead, they gradually came to see themselves as team members responsible for the functioning of the team. They "invested their human dignity in the system of their own control" (p.427). And this new identity led to the success of self-managed teams. In contrast, Kellogg (2005) found that the power of old identity was associated with strong resistance to an organizational change. Reducing work hours from 120 hours to 80 hours a week created an identity crisis for many "macho surgical residents" who prided themselves on being "iron men." They fought against the new reduced-hour policy that was intended to mitigate work pressure.

Another type of work change is altering physical arrangements in the workplace. This, too, may become a moment of identity challenge. The trendy practice of non-territorial offices, also referred to as "hotelling," removes physical markers that are traditionally used to indicate personal and social distinctiveness and status, therefore

threatening people's workplace identity (Elsbach, 2003). Millward (2007) found that such

hotelling practice shifted workers' identity orientation away from their teams towards the

organization in general.

A second demonstration of the importance of identity issues to the success of

organizations is in the area of cross-functional collaboration. With a labor force that is

becoming increasingly specialized, fostering communication and collaboration across

various "thought worlds" is said to be critical for knowledge sharing and innovation in

organizations (Dougherty, 1992). Studies on the production floor show that engineers'

desire to claim knowledge prevents them from integrating input from technicians and

assemblers (Bechky, 2003a, 2003b). When workers can discover ways, to share

knowledge without undermining or threatening each other's authority, for instance

through the use of boundary objects (Carlile, 2002), collaboration is more effective.

Identity issues are therefore prevalent in work settings. They have been shown to

have significant consequences for both individuals and their organizations. The question

arises, therefore, how do people effectively manage the many challenges they face in

their work life?

Managing Identity Challenges

To project themselves as effective social players, individuals employ many

practices to preserve the control of social interactions and safeguard their self images.

Researchers have documented a repertoire of practices that people use to manage identity

challenges. I summarize these practices into three general categories: interpretive,

relational, and presentational. Interpretive practices focus on the conceptual frames

individuals use to evaluate the world of their work. Relational practices focus on

interactive patterns between groups. Presentational practices focus on physical settings

and props, appearances and demeanor. As later chapters show, these categories map the

primary approach used by each of the three employee groups I studied to manage the

identity challenges they face.

The Interpretive Approach

One set of identity-managing practices involves the development and articulation

of an interpretive framework. Such a framework or cognitive schema maps our

experience of the world, identifying what is relevant (Bartunek, 1984; Ranson *et al.*,

1980). Making sense of our experiences through interpretive frameworks is like seeing

objects through a filter. One can construct selective understandings of events and issues

(Elsbach & Kramer, 1996). For example, in a comparative study of social workers in five

hospitals, Meyerson (1994) illustrates how interpretive frameworks shape people's

experience. In all five hospitals, social work was characterized by a high level of

ambiguity and workers experienced a great deal of stress. In some hospitals, the dominant

interpretive framework used by social workers emphasized medical control. Disease was

treated less an as abnormal event. Social workers in these hospitals experienced

ambiguity on their job as constraining and unnatural. They viewed stress as a

pathological individual problem. The staff at other hospitals adopted a different

framework, one that advocated multiple normalities and legitimized subjectivity. There,

the ambiguity of their work became enabling and normal. Stress was interpreted as a

commonly shared issue. Social work's ambiguous characteristics were interpreted in the

first case as threats to professional standing. In the second case, ambiguity was embraced as part of normal work experiences.

Another example of selective interpretation is reflected in the work of bill collectors as reported by Sutton (1991). When dealing with angry debtors, collectors displaced attacks on themselves by using a "cognitive appraisal" practice. A collector said, "I always tell myself, 'He isn't mad at me. Maybe he is just having a bad day.' Or 'He just can't take being called by one bill collector after another.' I keep reminding myself that it is nothing personal" (p.263). Collectors also used their technique with friendly and sad debtors to refrain from being a nice and sympathetic person on the phone. They reminded themselves: "Don't think of her as a nice person. Think of her as a bill you've got to collect" (p.260) Or, "Remember, even if they have to get tough to get the payment, the collector is helping the debtor. The collector has to tell himself: I'm helping this person to save their credit rating. If they don't pay me, they may never be able to buy a car or a house" (p.261). Bill collectors fluidly moved from one framework to another depending on the type of debtors they encountered. This, according to Sutton, reduced a contradiction between how bill collectors felt and the emotions they conveyed. Using these practices allowed them to keep their identities as competent bill collectors and decent people intact while still getting the job done.

The ability to define social entities and activities is powerful because it allows for the "theorization" (Greenwood *et al.*, 2002) of how these entities and activities are evaluated. In the centuries of contestation between science and religion, for example, star scientists played a significant role as spokespersons to define what their profession stands for (Gieryn, 1983; Gieryn *et al.*, 1985). Star scientists, through public speeches, popular

writings, and trial testimonies, portrayed science and its practitioners as "objective, practical, and empirical." Gradually, these principles have become the defining features of scientific activities and used as evaluative criteria to decide whether someone is a scientist or not.

Not only do existing mental frameworks contribute to different interpretations of the same situations, but individuals can also selectively choose and develop interpretive schemes that mitigate threats and affirm positive perceptions. A study of identity threats that students experience through public rankings of business schools shows that respondents proud of their school affiliation attenuated these threats by making salient other positive dimensions neglected by those who construct the rankings (Elsbach & Kramer, 1996). Or they affirmed their positive perceptions by comparing their schools to a set of schools different from those in the rankings. The cognitive flexibility of highlighting different dimensions and shifting comparisons demonstrates how people make sense of identity threats.

Selective framing is analogous to what Scott and Lyman (1968) call the issuing of "accounts" or what Hewitt and Stokes call the use of "disclaimers" (1975). Accounts are justifications and excuses employed when an action is subjected to evaluation (Scott & Lyman, 1968). Disclaimers are prospective constructions of potentially problematic events (Hewitt & Stokes, 1975). Both are used to restore and prevent negative assessments, and are ways to both to repair and protect identities.

Although interpretive frameworks are used by individuals, their development is a collective process. In the previous example, social workers talked and joked about the ambiguity in their job during staff meetings, parties, and hallway chats (Meyerson, 1994).

The conversations reinforced the interpretation of their ambiguous job. New bill

collectors were taught to think about debtors in different ways in order to control their

emotions appropriately (Sutton, 1991). Snow and Anderson (1987) found that homeless

people spend a lot of time telling stories about themselves. Hearing their own stories

reinforced a particular interpretive framework and strengthened their defense against

possible identity challenges. As Myerhoff (1986) tells us:

> One of the most persistent but elusive ways that people make sense of themselves
> is to show themselves to themselves ... by telling themselves stories. ... More
> than merely self-recognition, self-definition is made possible by means of such
> showings, for their content may state not only what people think they are but what
> they should have been or may yet be. (1986: 261)

The Relational Approach

A second approach aims at changing the relationships individuals have with

others, including building in-group relationships and managing out-group relationships.

People who conduct work individually find that establishing what are often called

"communities of practice" (Wenger, 1998) is particularly helpful for tackling problems

they individually encounter. Divorce lawyers often face the daunting task of persuading

their lawyer colleagues, clients, the general public, and themselves that they are indeed

professionals with specialized legal expertise. One response is to build a community of

divorce lawyers who share similar practices (Mather et al., 2001). They help each other

out on cases, refer cases to one another, and, critically, share and reinforce each other's

views about the practice.

Joining an established community (such as an occupational community) or

building a community where it does not already exist can lead to the creation of a

collective identity. It connects individuals within a broader community cognitively, morally, and emotionally, and translates issues that each individual faces separately into common problems shared by many (Polletta & Jasper, 2001). Through community building, people receive emotional support and practical help. This increases each individual's ability to handle his or her specific problems as well as enhancing the likelihood of overcoming common challenges.

The other aspect of a relational approach is the management of out-groups. A number of social psychological experiments have demonstrated the strength of "minimal social categorization." People who are assigned into groups based on arbitrary criteria such as coin toss, two color labels, and so on, exhibit distinct favor for their own group (see Tajfel 1982 for review). This line of research suggests that the creation of out-groups increases solidarity within one's own group, induces discrimination against the other groups, and occurs with remarkable consistency as if the creation of in and out groups is a universal human practice.

In work settings, people are organized into teams, departments, or ranks. And these work-related structures become a basis for in-group and out-group distinctions. Ethnographic evidence among service workers shows that workers have subtle but powerful ways to control the people they service. Doormen train building tenants to develop and communicate service preferences (Bearman, 2005). Custodians reward cooperative occupants and punish those who are disrespectful to them with delay and neglect. They greet patrons to induce a reciprocation of personal greeting (Ghidina, 1992). Janitors learn to dispense their intimate knowledge about tenants discreetly and to ease away from overamorous tenants (Gold, 1952). Lawyers screen clients, set their

expectations, use deliberate delays, leverage fees, or even threaten to fire clients in order to align clients' perspective about the lawyer's role with their own (Mather et al., 2001). Photocopier service technicians learn that "fixing the customer" is often more important than "fixing the machine." They make courtesy visits to keep customers assured that situations are under control (Orr, 1990). Psychiatric clinicians selectively dismiss patients who are outside their definition of worthy clients, whose cases require skills below their level, or whose participation is involuntary (Brown, 1989).

The Presentational Approach

Self presentation is an important element of identity control. By controlling how we look and what we disclose about ourselves, we project a certain image. Personal appearance is an obvious way of managing self presentation. Sometimes, the manipulation of appearance is a pre-emptive measure to avoid being associated with undesirable identities. A study of young students shows that they consciously avoid clothes that would invite unwanted interpretation about their identity (Freitas *et al.*, 1997). For instance, those who do not want to be considered too fashion-conscious avoid wearing trendy clothes found in current magazines. Male students who want to project masculinity dislike clothes with too many colors or a narrow sweater cuff. Some African-Americans refuse to dress "white" to maintain their ethnic identity.

In the workplace, studies of appearance are numerous. As discussed earlier, junior accountants and advertising agents are pressed to groom their looks to project "professionalism" (Alvesson, 1994; Covaleski et al., 1998). Disney park operators are not only selected on the basis of their physical attributes, but are told to dress, talk, and smile

to signal they are "happy workers" (Van Maanen, 1991). Alternative appearance can constitute important identity violations. In a study of a hospital rehabilitation unit, Pratt and Rafaeli (1997) found that nurses debated heatedly over what to wear at work. Those who preferred street clothes thought of themselves as "rehabilitation instructors giving patient-centered care." Those who preferred wearing scrubs saw themselves as "acute care providers treating fragile patients and making autonomous decisions." The strong defense of their dress code was a way not only to establish but also to protect their identity from challenge.

The acquisition and use of props is a second way to project and maintain one's identity claims. Workers in non-territorial offices feel threatened when they lose the ability to display identity markers such as art, awards, photos, special equipment, or diplomas. To compensate, they find ways to restore their status and distinctiveness by displaying portable artifacts such as photo magnets and personal books (Elsbach, 2003). Physical materials can become such a crucial part of people's identity that they cannot imagine getting rid of them. Weick (1996) famously described firefighters failing to follow orders to drop their heavy tools and consequently were caught in an exploding fire. Had they left their tools behind, the firefighters could have run fast and far enough to make it to the safety zone. One of the possible reasons for this tragedy is that the identity represented by the tools had become so central to the firefighters that dropping them would have created an existential crisis. Not only is the possession and display of material artifacts important for maintaining an identity, the control over physical arrangements is also "an essential element." Goffman (1961), for example, discussed how mental patients claim free space for activities, find personal storage facilities, and

establish transportation systems to facilitate the acquisition and use of materials. These ingenuous solutions are examples of patients' "secondary adjustment" to exhibit their individuality in a total institution.

A third aspect of presentational management is information control. People strategically hide, distort, and selectively disclose information about themselves to others. The list of relevant information is long, ranging from serious matters such as illness, personal history, family background, and religious affiliation, to the seemingly more mundane information such as club membership, favorite movies, and shopping habits. A study of high school reunions vividly illustrates how the discovery and exchange of autobiographical information leads to reconsideration of personal identities (Vinitzky-Seroussi, 1998) . Attendees rediscovered long forgotten information about their pasts from other people's memories. They learned new information about friends that contradicted or confirmed old perceptions. They selectively disclosed information about their careers, families, successes, or failures. Through the information game, attendees attempted to control their displayed identity.

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The three categories of practices are used for identity management. Interpretive practices enable people to see problems in a different light. Relational practices are interpersonal maneuvers that shape encounters with others. Presentational practices are attempts to cast oneself in a particular manner to others. The development and employment of the three practices is however a social process. Interpretive frameworks

are developed and refined collectively and passed on; relational maneuvers are socially negotiated; and presentational styles conform to social norms.

The three approaches are interdependent and deployed in various combinations. An illustrative example is a study of emergency medical technicians (EMT) negotiating between two competing identities (Nelsen & Barley, 1997). The paid EMTs see themselves as "experts" providing medical support. Volunteer EMTs view themselves as "amateurs" offering humanitarian help. The competing identities are enacted through a combination of elaborate framing about who they are and what they do, self-presentational styles of appearance, demeanor, and work manners, and ways of dealing with patients, doctors, and other EMTs. Paid EMTs approach their work as if it were a commodity: they talk about their training, wear uniforms, control their emotions at work, and assert medical authority over patients. In contrast, volunteers treat their work as a gift: talk about compassion, dress casually, display their confusion about what to do, and treat recalcitrant patients with kindness. The contrasting rhetorics, styles, and modes of relating to patients solidify the expert and the amateur identity respectively.

Finding and Accounting for Differences

The studies reviewed briefly here present a rich repertoire of practices that people use to construct work identity and counter identity challenges. The vast majority of these studies are however based on a single occupational group -- flight attendants, lawyers, scientists, sales agent, or so forth. The lack of comparison across different groups limits our understanding of why certain practices are used in some situations and not in others. Do different groups of people use the same approach? If not, what are the social

conditions that govern the deployment of one approach versus others? This question cannot be adequately addressed without comparative studies looking at multiple social groups within a similar context.

Theorists propose that people respond to identity threats in different ways depending on the characteristics of their social position. Specifically, social identity theory (Tajfel & Turner, 1986) theorizes three types of reactions to threatened social identity: social mobility, social creativity, and social competition. Social mobility means that individuals leave or dissociate themselves from the group with a negative identity. Social creativity consists of redefining or altering the basis of comparison so that their group looks better than other groups. Social competition implies that actors compete directly with the other groups and try to reverse the relative positions. The authors further argue that the reactions to identity threats hinge on the degree of stratification in a social system and the intensity of the belief system about social change. Social identity theory takes an important initial step to hypothesize different forms of reaction in response to identity threats and to discuss potential mediating conditions. It is, however, speculative and the propositions are not backed by empirical evidence.

Pratt and colleagues' (2006) study of three medical specialties is one of the few examples of empirical comparative studies. They find that residents of three specialties all experienced disconnection between what they thought they should do as doctors and what they actually did on the job. The residents' responses were, in the authors' terms each "customized." The primary care residents engaged in "identity enriching," developing a more nuanced understanding of what it meant to be a primary care physician. Surgical residents engaged in "identity patching," highlighting the toughness

and completeness of their responsibilities to compensate for doing what they called

"grunt work." Radiology residents used "identity splinting" and temporarily resorted to a

student role until they became finally acknowledged as radiologists ready for their tasks.

The authors suggest that the customization type chosen by the specialists depended on the

magnitude of identity violation and the strength of professional identity.

Studies such as Pratt et al. (2006) begin to provide a theory to explain how people

respond to identity challenges. But systemic comparisons of different forms of response

are rare. In the research reported here, I examine how three groups of employees in a

biotech firm manage challenges to their occupational identity. The occupational groups

studied are scientists, purchasers, and contractors. Through comparisons between these

groups, I find the notion of a social boundary to be helpful in understanding why and how

certain strategies are deployed. Social boundaries are distinctions made by social actors

to categorize objects, people, practices, and even time and space (Abbott, 1995a; Lamont

& Molnar, 2002). Writers with a cognitive orientation (in both psychology and sociology)

suggest that how one draws boundaries between people and events is critical for shaping

our conceptions of the world and those around us (Gerson & Peiss, 1985; Zerubavel,

1991). For each group I studied, the specific "other" (or boundary) is different: For the

industrial scientist, the other is the academic scientist; for the purchaser, the other is the

internal client; and for the contractor, the other is the permanent employee. The

characteristics of the boundary between the self and the "other" plays an important role in

understanding how identity threats are handled (see Figure 1).

Figure 1: Interplay of Boundary and Identity Managing Strategies
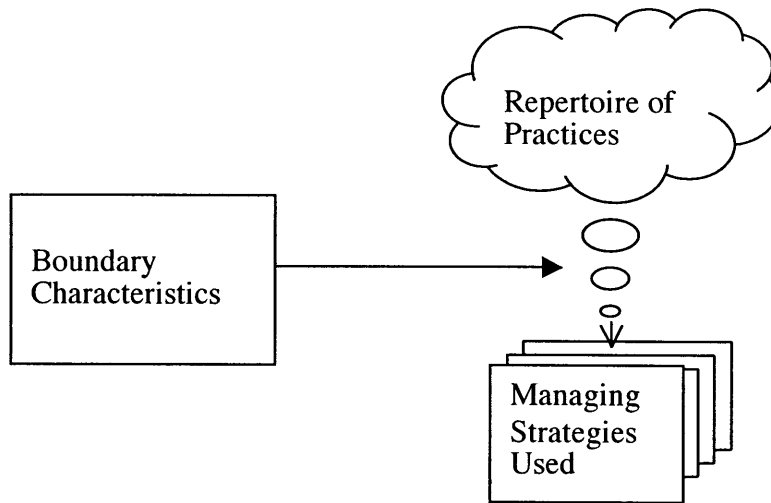
Overview of the Dissertation

The setting that grounds this study is a biotech company, part of an emerging

industry born in the 1970s and 1980s following breakthroughs in the life sciences. In the

last few decades, the biotech industry has evolved into an energetic sector of the

economy and continues to grow. The setting proves to be illuminating for the purpose of

this study because it employs a diverse workforce (Murray & Hsi, 2007). Specialized

knowledge used in a biotech company cuts across several disciplines including biology,

chemistry, engineering, statistics, clinical medicine, business, information technology,

and so on. The level of talent ranges from highly educated PhDs, MDs, and MBAs to low

level non-degreed technicians and clerks. Surely biotech companies are not the only ones

employing a diverse set of employees, but the fact that they do makes them an

appropriate setting to study identity challenges across occupations. The company I

studied has been listed repeatedly as "a best place to work" by third-party studies. The

rapid growth of the company (and the industry) and its good reputation are important for

my study because they show that identity challenges are not the artifacts of gloomy financial performance or an unfriendly culture.

In what follows, Chapter 2 introduces readers to BioCo[2]. It provides an overview of the employees at BioCo and the corporation's history, structure, and culture. The next three chapters describe the identity challenges faced by the three employee groups I studied. Each chapter concludes with an analysis of how the specific employee group managed the identity challenges they faced.

Chapter 3 looks to the core of the company, the scientific researchers of BioCo. While high on the corporate "totem pole," researchers experience identity struggles just as others do. Their move to industry creates tension with the internalized norm of being an academic scientist. BioCo scientists develop alternative frameworks to reconstruct their differences and similarities with academic scientists in order to maintain their professional identity.

Chapter 4 examines a middle-layer staff group at BioCo. Purchasers exemplify a wide range of staff in personnel, finance, facilities, and legal affairs. As internal service providers, they constantly struggle with their internal customers, most of whom are of higher status in the company. They see themselves as experts providing useful service while clients see them as clerks. To alter this view, purchasers at BioCo have launched an "internal campaign" to reshape their interaction with internal clients.

Chapter 5 goes to the outskirts of the firm to examine contractor employees. They are excluded from full membership of the corporation, but their daily presence on site, at

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[2] The name and location of the company are disguised. The names of all individuals are pseudonyms.

least on the surface, makes them no different from full timers. Presenting themselves as permanent members of BioCo – or "passing" – is one way for them to manage the challenge of their temporary classification.

Chapter 6 compares the three groups. The groups experience different types of identity challenges: the potential loss of professional standing for scientists; being undervalued as mere bureaucrats by purchasers; and being in limbo as partial organizational members for contractors. Although all use various combinations of interpretive, relational, and presentational practices, each group has a dominant practice to manage identity threats. The chapter ends by drawing out theoretical and practical conclusions from the study.

CHAPTER 2: Setting The Stage

BioCo is a leading biotechnology company that utilizes life science technologies to develop, manufacture, and market products and services to address a variety of medical needs. While the majority of companies in this industry have yet to bring their first commercial product to market, BioCo has won FDA approvals for several therapeutic treatments. Steady revenue and a growing product portfolio clearly puts it among the top of the industry. This chapter describes the social setting in which the BioCo life is lived. After introducing the historical background of BioCo's development. The next section portrays what it is like working at BioCo. The third section explains the organizational terrain within BioCo. And the final part describes how I gathered the data used to analyze the three employee groups of my concern.

Meet the Characters

Thousands of women and men "badge into" the BioCo facilities every morning and spend many hours in their offices, cubicles, or laboratories. Among them are Bill, Ken and Paula[3].

Bill, a father of two and grandfather of five, has worked several jobs in his life. After serving in the Marines during the Vietnam War, he started a civilian career as a truck driver, working two trips a week to Canada, each lasting two days. The money was good he says but the hours were impossible after a baby arrived in the family. Consequently, he shifted to local store delivery and sales and later founded his own

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[3] The names of the company and individuals are pseudonyms.

business. Two years away from retirement, he was looking for a part-time job when a security company convinced him to work full time as a contractor shuttle driver for BioCo. Although he doesn't get paid much, Bill maintains a strong work ethic. He gets up at 4:15 every morning and arrives at BioCo around 6:15 for an eight-hour shift. Bill doesn't broadcast his status as a contractor to his employee passengers. When it comes to casual chats with the riders, this difference does not seem to matter. However, he listens with some jealousy to the passengers' high-spirited discussion about upcoming holidays, employee stock options, 401K changes, and so on. Bill has none of these and each holiday not worked is a day not paid. Through conversations with the passengers he has discovered that there are many other temporary workers like him in the BioCo offices and labs. Most of them are also discreet about their temporary status and frequently compare themselves to the regular employees around them.

One of Bill's regular passengers is 53-year-old Ken, who is an experienced purchaser managing six people under him. Ken started out on the manufacturing floor in a high-tech company at the age of 19. He gradually moved into managing supplies and suppliers. He enjoyed the job until the company took a downturn and had to lay off staff. Finally it was his time to leave. After some time at several technology companies, Ken ventured into biotech and BioCo specifically. He is optimistic about the new industry and is attracted by the growth potential of the company. In the two years on the job, his priority has been on negotiating with his internal customers about how they should behave on joint projects. He is frustrated when opinionated engineers and scientists think they can do his job better than he does. But he learns to curb his frustration and tries to influence without annoying them. After all, his place at BioCo is dependent on the

cooperation of his customers. This morning, he has a scheduled phone call with an in-house vet to discuss animal serum supplies. The vet is not familiar with the business aspects of supplier relationships, but always tries to intervene with suppliers leavings Ken with fires to fight. He is not looking forward to the call, but it will mark the beginning of his day.

In another part of BioCo, Paula is getting ready for her experiments. After years of being a graduate student, post doc, and junior faculty member in an elite university, she made the leap into industry. Those past days in academia left her with mixed feelings. She says she used to sleep in the lab during graduate school, but at some point she concluded that "You don't live to work. You work to live." The frustrating memories of grant writing, faculty competition and "inhumane" work requirements still upset her. At the same time, she takes pride in doing basic research in a company where revenue is the dominating language. Being able to explore biological mechanisms in the hope of discovering potential treatments makes her feel like a scientist. She compares herself to some of her colleagues who are now doing routine product development and service work. She is happy to continue working as a scientist herself.

Bill, Ken, and Paula differ vastly in their background, current position, and economic status. They probably do not know one another. What is common across them is a need to demonstrate their self-worth on the job. Through their interactions and comparisons with different types of people, both present and distant, they continuously construct their identities. The differences between Bill and full-time employees, Ken and his internal customers, Paula and other scientists, are important to them because the boundaries they enact define who they are, what they value, and how they behave. It is

through these comparisons that they are connected to the corporation and find a place in the complex organizational maze. This dissertation is about interactions at the local boundaries and how these interactions both hinder and help "the humble and the noble" (Hughes, 1971) such as Bill, Ken and Paula build a worthy and satisfying sense of self.

Historical Context

Like other companies established in the first biotech wave in the 1980s, BioCo was founded by scientists with the assistance of business people. After more than two decades, the early history of the corporation is passed on by old-timers and portrayed in the official documents for corporate birthdays. These stories recount pivotal moments in BioCo's infancy. A most important decision that has shaped today's BioCo is a story of persistence against prevailing traditions. An old-timer relays his version of the story:

> "The CEO went around the universities, hospitals, and got the smartest and brightest in a room and said to them, I have an idea of a company making this drug. It's for this disease. Should I make a go? The smartest and brightest in the room shook their heads and said no. He went with his gut feeling. To do that, it takes a lot of fortitude. At first, the drug helped some patients out. Some other people, it didn't help out much. Now it's helping more people. And it's still making a big portion of the company revenue."

Other stories feature the difficult physical and financial conditions in the early days of BioCo. The building the firm occupied was small and shabby. The elevator was frequently out of order. The CEO had to drive around collecting medical materials himself.

Among the employees, memories of the Friday happy hour still remind them of the old casual days. Also referred to as the "Journal Club," the tradition is said to have

started as a ritual among scientists to gather and talk about scientific things. But it soon became a party, a happy-hour, with beer and pizza provided by the company.

These early memories are sagas passed on from old-timers to newcomers. In a way, they reflect BioCo's transition from a small start-up into a multinational corporation. The early risky decision has paid off. It led BioCo to its first and successful drug. Exponential growth followed. The run-down office was replaced by a state-of-the-art building. The shoestring budget has grown into an enviable bank account. Now BioCo generates billions in annual revenue, has opened offices in several continents, employs thousands of people worldwide, and enjoys a high reputation for its success.

The founding and growth of BioCo marks the development of the biotech industry. The industry has built on the mid-1970s scientific breakthrough on recombinant DNA (rDNA) techniques. The initial period of commercialization began in the late 1970s and early 1980s. Since then, the industry has endured waves of expansion and contraction, enthusiasm and pessimism (Carre *et al.*, 2000; Kaplan & Murray, forthcoming) but remains one of the fastest growing business sectors in the world. A brief walk around the area where BioCo is now located provides a feel for the energetic pulse of this sector. Various biotech companies occupy neighboring buildings along the streets. A large billboard at the road intersection features a well-known biotech company logo and the happy faces of a mother and a child. In the midst of the biotech forest is a building marked "BioCo."

Cultural Atmosphere

What is it like working at BioCo? Despite the inevitable differences among individuals, employee experiences share some noticeable commonalities. The pace of work is fast, but the rewards are good. The environment is full of energy and optimism. The work style, according to the employees, is less hierarchical and more autonomous than in many other industries.

Fast Pace

-- *"Randy is so busy that his chair keeps spinning when he's gone."*

BioCo is said by employees to run "lean." The headcount that can pass budget approval is almost always less than what departments desire. Although new openings are filled on a daily basis, the increase of people does not seem to insiders to parallel the increase of workload. On many days people say they are "buried under work," "busy as a bee," "busy as a one-armed paper hanger." A man, waiting for his fax, says "Rush, rush, that's how we are. I need two of me." A woman, on her way to the restroom, quickly comments, "Busy, busy, it doesn't seem it will ever stop. You know? EVER!" The busy-ness has been accepted as the fabric of BioCo life. People tell each other, "It won't get better. It's always busy," "It used to be light in the summer. Not any more."

Sometimes people stay after hours or come in during the weekend. One night guard notes that some employees stay at work until close to midnight. He has seen a man coming to work at 2am. Even if people are not physically in the office, their minds may still be at work. Some people are able to leave work behind when they leave for home. Others find that they have to take work home, or to the park while their children play.

The reentry back from vacation seems painful: "It was good to take time off and just rest and do nothing. But coming back, there're 128 emails waiting for me. You just want to shut down the machine!"

BioCo people notice that new hires from other companies often underestimate the workload when they join. One day at lunch, several co-workers are joking about the soon-to-arrive new person.

> "We'll have him acclimated first. He will not run as soon as he gets here. He's got to SPRINT. Phew. Phew." Sam rapidly moves his arms back and forth, moving his knees up and down in the chair.
> "Did you warn him when you interviewed him? Or did you lie?' asks Betty.
> "I never lie," says Sam.
> Martha adds, "I warned him, though. I said that we're very busy here. We all have a lot on our plate."
> "What did he say?' asks Betty.
> "I've always been busy. I'm used to it." Sam imitated the answer, "I can handle it. I can handle it." He pauses and switches to his own voice, "Ya -- right. Wait till the 3-ton brick comes. Bonk! [Sound of heavy object falling] Where does that rock come from?" He throws his arms up and down, as if being hit by a big rock and getting dizzy.

To sustain the workload, managers warn employees of the danger of burn-out and teach them the importance of time management. Being busy becomes a topic at a casual lunch meeting with a department head.

> "You're on a treadmill," says one man.
> "One person said to me that his to-do list is more than humanly possible," says another woman, laughing.
> A new person ventures tentatively, "It's a little scary. I heard from many people that they're very busy. It seems everyone is just full. You are at the top of the glass."
> The department head responds, "The hallmark of BioCo is people work hard. But I tell people that they need to prioritize. If you start coming in 10 minutes earlier, that will be your start time. If you leave 5 minutes later, slowly you will leave late. You leave at 5, 5:15, 5:30, 6. You will absorb it. You need to prioritize things, not to say that the second on priority is so much less important than the first. But if you don't watch it, you will get into a trap."

Another senior manager also mentions that she encourages people not to work long hours. They try to cut the work into small pieces as short as possible so that people leave after their shift. Some bosses say they tell their direct reports to take time off occasionally to avoid getting sick and having to miss work for longer periods.

Generous Rewards

While the work pace is fast, the above anecdotes suggest that BioCo is not an overworked environment expecting its people to regularly put in 80 or 100 hours a week often associated with work conditions in high-tech, consulting or investment banking[4]. People at BioCo, from senior management to low-level employees, talk about the importance of having a life outside of work. Women in particular say that a reasonable work-life balance is possible at BioCo. On a day-to-day basis, employees can arrange their work schedule with managers although there is no official flex time policy. It is common for some people to come before 8am and leave by 4pm. Working from home is possible when if necessary. Many people say that the company understands the need for a personal life and this is appreciated. A working mother comments: "I wouldn't worry about having to leave at 3:30 to pick up my kids and people would think that I'm pulling off work. My boss, she was the head of the group and she had three young kids like mine. I didn't feel like I need to put family in second place and work here till 7:30 to SHOW that I am working. It's the quality of work, not quantity."

The company also offers assistance for employees' family concerns. A company-sponsored seminar on how to finance college education was well attended by young

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[4] Positive conditions for work life balance are observed in other biotech companies (Eaton & Bailyn, 1999; Smith-Doerr, 2004).

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parents. Co-workers talk about their families frequently. Family pictures and children's paintings can be seen in prominent places on office walls, shelves, or cabinet sides. A mother of five decides to have her children's photos developed, framed, and displayed on her office shelf because everyone is asking about her family.

BioCo people appreciate what they regard as the generous benefits the company offers. During the time of my fieldwork, BioCo increased its 401(K) matching percentage and reduced the vesting period. Health insurance and stock purchase plans are also praised by many employees. Commuters have public transportation subsidies and reduced charge or free parking. Bikers have a designated garage for their bikes. Other benefits include 3-weeks vacation time as a starting package. Taking consecutive weeks off is permitted and used. Desk workers get regular ergonomic assessments. Lab workers can pick their lab-safe shoes from a shoe van every year.

Employees like to compare the BioCo environment with that of their former employers. Most of them come to appreciate what they get in return for their hard work. A former banker gets angry when talking about the past.

> BioCo cares about its employees. Companies don't care about their employees out in the real world. I gave a lot to [the bank]. Look at all the money they're making. They froze our raise for three years. And they cut back three weeks of vacation for people who reinstated their start date. I was one of them. Three weeks vacation, that's a lot of money. I was pissed!! They gave me a retirement package. When I left, they were like bye-bye, now we can hire someone for cheaper.

A man in his 50s volunteers his comments to me several times,

> BioCo is very unique. Nowadays corporate America doesn't care about their employees. BioCo reinvests in their employees. They have good benefits. They make it a good environment to work. Now companies don't care about their employees. If they don't care, the employees don't care either. They just come and get through the work. At BioCo, people like to come to work.

BioCo is a very generous company, very good to its employees, which today, in corporate America, is very rare. They give you benefits, take care of the employees, you know what I mean. They give you free parking, free subway passes, little things. You know what I mean. Other companies don't do that. Corporate America is terrible today. Because the last time I actually worked for somebody else was 30 years ago, then I got into my own business. Now I've come full circle. I've started to work. It's been only 3 years. I don't like what I've seen. If I were a young person starting out today, I'd go for my own business, unless you can find a company like BioCo. Like I said, it's rare."

A prominent intangible reward expressed by BioCo employees is a feeling that the work at BioCo contributes to a noble goal: saving patient lives. From top to bottom, managers and the managed emphasize a patient focus. They tell stories of patients, display photos of dramatic changes, show videos of their stories, and invite patients to talk with employees. Most employees say they enjoy the feeling that their work is making a difference in other people's lives. A man tells me, "Everyone has to have a job. But it's nice to know that you're working for something more meaningful. In Fidelity, we make the fat men fatter. Here there's a sense of satisfaction." This comment illustrates the pride most if not all employees display in what the company does. Another person links the feeling to her own life:

I had a cousin who died from [a disease] last February. We have a drug that treats [one form of the disease family]. She had [another form in the same disease family]. So having seen the disease, it's a bonus that we're making the drugs. Yes, cancer needs are important. But people with these other diseases need treatment too. I see her struggling. She was 23. It's much more rewarding than making a phone so that someone can make a phone call.

Widespread Enthusiasm

-- *"More BioCo buildings! This street should be BioCo Street instead of Lincoln Street! Our stock will go up!"*

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Not only is hard work rewarded in many ways, it is expected to continue for the foreseeable future. As a manager says succinctly, "Nothing succeeds like success." The double-digit growth rate fuels various benefits, the increasing stock price, and a growing enthusiasm. Over the years, BioCo stock has grown steadily, reaching high points during my fieldwork period (2005-2006). The seemingly unstoppable growth cultivates excitement and happiness. Unlike workplaces where people worry about the next reorganization or layoff, BioCo folks say they are not concerned. As far as they can tell, the company is growing. New acquisitions are occurring. New facilities are being built and old ones expanded. The new hire orientation keeps running every week for about ten new arrivals. Running out of space becomes a proud complaint. The stress of being busy is mitigated by the thought that their jobs are not going away. BioCo is described as a "refreshing," "invigorating," and "exciting" environment in which to work[5]. Many middle-aged employees compare this to mutual funds in the early 90s and high tech in its heyday -- the same growth mode, the same "frantic building up, ramping up."

With the downturn in the high tech industry, "high-tech refugees" consider BioCo a safe heaven. A man talks about his former telecommunication employer for 20 years. According to him, half a million people were laid off over the last ten years in the industry.

> People like me, from high tech, you're thankful to be here. It was depressing, mentally abusive. It's refreshing here, invigorating. You don't mind working hard if you are going to be rewarded for it. If you work hard at a company that is going down the tubes, you feel disconnected. Why am I working so hard? This company is growing. They're hiring people. There're promotion opportunities. When they promote people, there'll be more positions open. In high tech, you are just sitting there waiting to be laid off. Here, there're avenues to get promoted. It's secure here. People feel secure. I still have friends at

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[5] At the time of writing, the global economy has slipped into a deep recession. BioCo has had strong earnings, however, and has outperformed major indexes in the stock market since 2008.

AT&T. I called them and asked how things are. They say, you're one of the lucky ones. God, man, it was terrible [at the former company]. There was nowhere to go. I asked my boss for a severance package. I thought I might as well get something before I get laid off and may not get it. He finally gave it to me.

To him, coming to BioCo feels like joining his former company 20 years ago,

When I was in telecom [industry] 20 years ago, it was like this. People were flying around the world, big bonuses, doing well... I said to people that I was working at AT&T. They said, "Wow, you work at AT&T! It's impossible to get in. How did you get in there?" Now I tell people I'm working at AT&T. They go, "Oh you work at AT&T [with a downward tone]" like they're sorry for you. When I joined, there were a million people. Now they have 38,000. The culture here is like what I felt 20 years ago. [I tell people that] I work at BioCo. "Oh, you work there! It's a great company." They're appearing in the paper. They're making drugs. I hope they keep on the rise till the peak until I retire. [He laughs, drawing an inverse U curve] They all go in cycles.

Money and security makes people happy. When I came here, they had a summer picnic. I haven't had any in 10 years at AT&T. That was nice. People are busy but they take some time off. People here help each other out. At AT&T nobody helps other people. You're going to take my job? Here they help out. You want the work? Go take it.

His sentiments are echoed by other "high-tech escapers" who could not take the gloomy

prospective around the high-tech industry any more.

I won't get out of biotech unless they kick me out! I speak from experience in high tech. I used to work at V for 14 years. It was in the semi-conductor business. It was up and down. I saw it before the peak. We grew from an 800 people company to 1200 within 14 months. Then two years later, we dropped from 1200 people to 900 in less than a year. Listen, I'm a guy who doesn't take my job home with me. When I get home, I go to the beach and do other things. When we were down, I was trying to get people to work for us. I was thinking how hard I should push a boy out of college to move and work for us, promising the potential growth, knowing that in two years I will probably stand in front the same person laying them off. It was anxiety. That's the time I took the work home with me. I don't want to do that any more.

Flexible Structure

Employees from other companies are often struck by the level of informality and preference for consensus at BioCo. Informality is manifested in two ways: casual superior-subordinate relationships and the lack of coded rules and procedures. At BioCo, employees and managers dislike putting formal hierarchy on display. An official organizational chart is hard to come by. There is no information about the company's reporting structure in the online directory. BioCo does not have a cafeteria or parking spaces reserved for management. Executives are approachable. The CEO and other upper managers are often seen waiting in the food line and having meals in the all-employee cafeteria. They chat, drink, and dance with employees at Christmas parties. They greet employees in hallways or elevators. One day each year senior managers dress up as chefs and servers to make and serve pancakes to employees as part of a charitable event.

BioCo's new facilities are designed to maximize open space with the explicit purpose of facilitating water-cooler and hallway conversations. Aside from easy, casual social interactions, employees report that their bosses and other higher-ups are accessible for work issues. They feel that they are not punished but encouraged to pick up the phone and talk to people above their immediate superior to discuss work-related questions. Employees say that BioCo's matrix organization also fosters communication unrestrained by a single chain of command. People often have "dotted line" supervisors in addition to a "solid line" boss.

The loosely structured communication pathways can sometimes be overwhelming to new employees. And the lack of coded rules exacerbated their early confusion. Many experienced employees from more strictly run organizations gasp at how things seem to

get done at BioCo in an ad-hoc fashion. The resistance to codified rules is said to come directly from the CEO. People say that the word "strategy" used to be taboo until several years ago. "By strategy, it would be something in a binder and would be put on the shelf." Many say that the CEO does not like to "lay down strict rules" or "impose process." Old-timers say that not everyone can thrive at BioCo. Those who need clear structures are particularly ill adapted. Employees say that people who are more flexible and can take initiative typically do well. Salespeople, for example, are struck by the level of autonomy they have. Compared to the big pharmaceutical companies where many sales people used to work, BioCo does not closely monitor their daily activities by asking them to report each of their call visits. There are few formal procedures to follow on the job. They say they have the freedom to do things as they see fit. Some are perhaps overwhelmed by the lack of structure and the ambiguity. Some refer to BioCo as "controlled chaos" or an "unorganized" environment.

BioCo employees describe the decision-making at the company as "consensus-driven." Far from a cutthroat, competitive environment where aggression is valued, being nice and amiable appears to be important at BioCo. Polite discussion rather than confrontation, they say, is the preferred method for dealing with disagreements. Many employees remember that in their job interviews they were specifically asked how they deal with conflict. A decision-making process based on consensus requires that everyone be brought on board. Old-timers observe that some new managers who desire to show quick results adopt a style of "shoveling ideas down others' throats" or an approach characterized by the phrase "my way or the highway." They say these people do not last

long at BioCo. They also point out that while the consensus approach can be frustrating and slows down decisions, they prefer it to speedier alternatives.

Summary: "The BioCo Way"

According to most employees, BioCo is a splendid place to work. There is more than enough work to keep everyone busy. People work hard but say they maintain a reasonable and valued work-life balance. Hard work is rewarded in both monetary and non-monetary forms. As for working style, employees feel that BioCo is the antithesis of a tightly structured firm. Hierarchy exists but appears rather flexible. Work rules and procedures are generally not rigid. This creates ambiguity for the employees. Some of them like the autonomy the environment allows and enjoy using their creativity in getting things done. Others are frustrated with the looseness, desiring more clarity. Some old-timers observe that people either love or hate working at BioCo. Most, it seems, love it.

Organizational Terrain

Insider as well as outside commentators find it difficult to describe the organization of work at BioCo. It has functions covering the entire value chain of drug development. It has business units that spread over several disease areas. The matrix system adds another layer of complexity to the organizational structure. In addition, BioCo employs a variety of occupational personnel. They constitute distinct communities within the BioCo system.

Figure 2 illustrates the relationships among different parts at BioCo. The major

functions reflect the lengthy drug development process (shown in Figure 3). When

product ideas are in the early concept stage, R&D takes direct responsibility for

developing concepts into potential candidates. As promising candidates move to clinical

trials, clinical specialists take charge. They work with regulatory personnel to ensure that

the design and conduct of clinical trials meet regulatory requirements. They also involve

operations staff who produce sufficient supplies for large-scale trials. As the final filing

stage arrives, regulatory specialists take the lead in putting all materials together. Once

the products are approved and commercialized, they move into the business units for

marketing and sales. This process from start to end can take over ten years (Goozner,

2004). During the entire period, business units are engaged with the functional groups to

make sure that product decisions are made with up-to-date market information.

Figure 2: Corporate Departments at BioCo
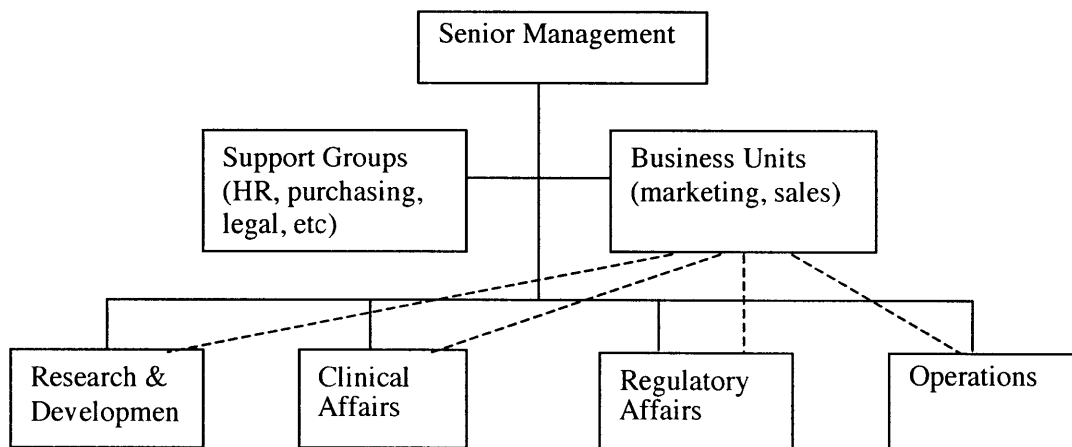
Figure 3: Three Stages and Five Steps of Drug Development

Discovery	Development	Commercialization
• Find leads • Predict toxicity • Project commercial appeal	• Refine leads • Manufacture drug • Determine safety and efficacy	• Scale manufacture • Market drug • Distribute • Sell

Identify a useful target	Find and refine a drug	Pre-clinical trials	Clinical trials	Market and sell drug
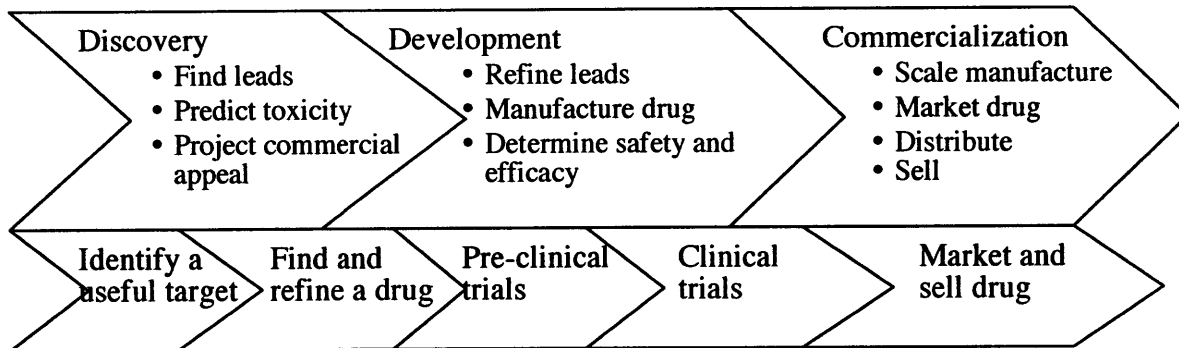
Source: Friedman (2004)

These departments cannot function without help from a number of support groups. They include human resources, IT services, office services, corporate communications, purchasing, environmental health and safety, legal, metrology, engineering facilities, government relations, and so on. The support groups work with all the departments and business units. Since the support groups are not directly involved in developing, producing, and marketing of the products, they are called "auxiliary" functions. From an accounting standpoint, they are cost centers without P&L (profit and loss) responsibility.[6] From a status perspective, they are considered by most BioCo employees as secondary in comparison to the other units.

Between 2005 and 2007, the total number of employees at BioCo increased by 17%. In 2007, R&D accounted for 10% of the total employee count at BioCo. Support Staff accounted for 12%, business units 20%, and manufacturing 14.5%.

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[6] R&D is also a cost center, but they enjoy high status for their contribution to the product pipeline.

Like other biotech companies, BioCo employs a large number of life scientists for

their R&D. They also make use of a wide range of knowledge workers as do other

biotech firms (Carre et al., 2000; Murray & Hsi, 2007) (see Figure 4). Besides PhDs,

MBAs attend to business development, MDs design clinical trials and link BioCo to the

medical community. Statisticians are hired for data analysis. Engineers keep the

machines running. Lawyers protect the intellectual property of research results. Computer

experts take charge of the network needs of all employees. The co-existence of various

occupational communities presents challenges for collaboration since each community

has its own culture, norms, languages, and priorities.

Figure 4: Occupational Composition at BioCo
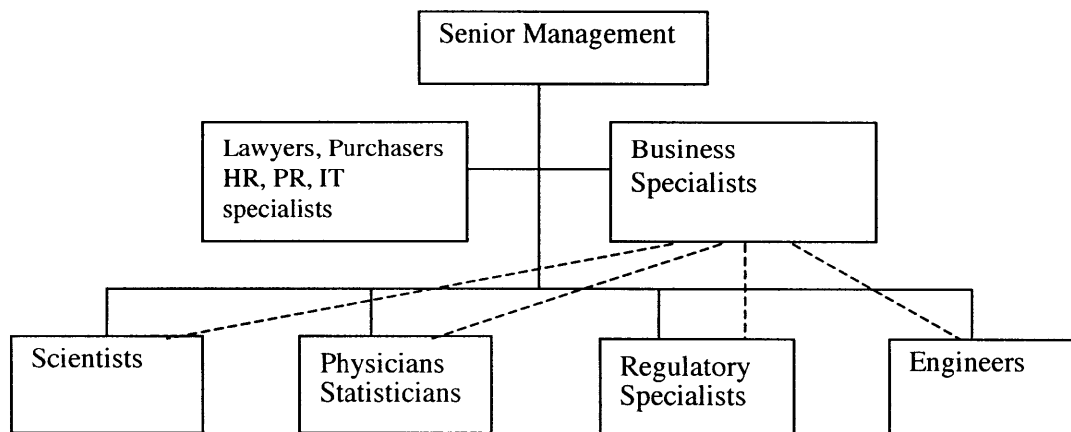
As for workforce demographics, women represent 55% of the employee

population at BioCo. The percentage is the same in R&D, consistent with past

observations of the biotech scientist population (Carre et al., 2000)[7]. The racial composition is white dominant (76%)[8], with a growing effort to increase diversity.

Summary

The company provides an overarching identity base anchored around "saving lives." This, however, is abstracted from people's daily work activities. How do people make sense of their work on a daily basis? What are the challenges brought about by the specific practices adopted in their work? How are they managed? The lack of clear structure at BioCo offers few concrete guidelines. Members have much freedom to design their work, shape their interactions with others, and make sense of what they do. The environment encourages people to come up with local strategies for constructing and maintaining their work identities. Moreover, the co-presence of various occupational communities complicates the issue. Different communities embody different ways of thinking about themselves and others. Yet the consensus working style calls for communication and collaboration across communities. The interaction forms a stage for different identity claims to clash, creating the need for active identity maintenance and reflection.

Data for This Study

I collected data on three groups of workers in the BioCo population (see Figure 5). The first group os the R&D scientists, who work in a core function at BioCo. These

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[7] The gender makeup varies somewhat depending on the department. In manufacturing, which is traditionally male dominated, women count for 40%.

[8] The racial makeup is the same for R&D and manufacturing departments.

are highly educated and specialized life scientists, enjoying much prestige for their

knowledge. The second group, the purchasers, is part of the support staff. Purchasers are

responsible for securing the goods and services necessary for the daily operation at

BioCo. The third group, not represented in organizational charts, consists of the

contractors. They are on temporary contracts to provide service to BioCo. They are more

or less prominent in almost all the departments but mostly in lower-level positions. This

is a growing group of workers at BioCo as well as in other companies (Barley & Kunda,

2004). The three employee groups represent decreasing centrality to the corporation. The

scientists constitute a central group that contributes to the product pipeline. The

purchasers are second-tier members of the company. Their work is useful but not widely

recognized as crucial. The contractors live on the outskirts of BioCo and are not

considered full members of the corporate family. The three groups also exemplify a

decline in general status from the core to the periphery with the scientists endowed with

the most prestige, the purchasers considered professional but nonessential, and the

contractors deemed disposable and replaceable.

Figure 5: Three Groups in the BioCo System
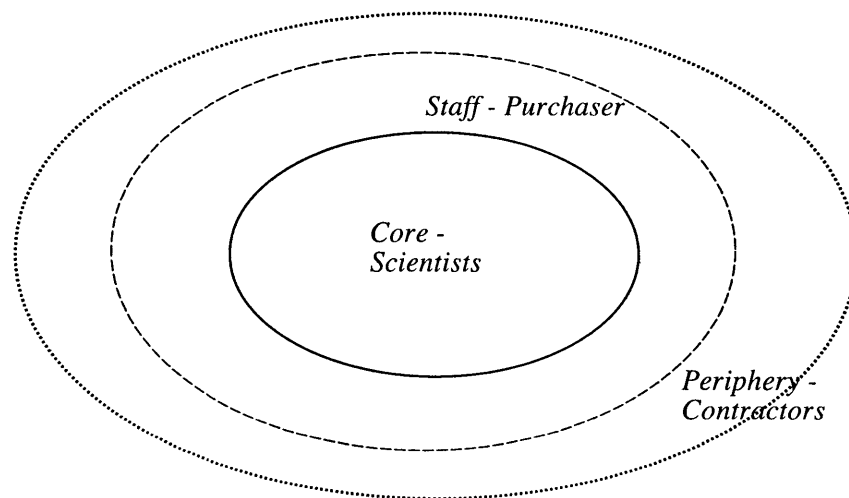
I conducted a year-long ethnography at BioCo from February 2005 to January 2006. I started my fieldwork in the purchasing department as a participant observer in meetings, trainings, and daily office work. Six months later, I began meeting R&D scientists through my purchaser contacts. While the labs remained closed areas, I met researchers in their offices, cubes, and conference rooms for semi-structured interviews and observed them in public spaces. During this time, I continued my observation with the purchasers. Scientists and purchasers often interact with each other and I was able to often observe members of both groups in one setting. Throughout the period of my fieldwork, I came into close contact with the security guards and drivers who are contractors working onsite. I talked with them daily, mostly in the morning and evening when I came to and left the facilities. Frequent long rides on the company shuttle proved to be productive data collecting moments as I met employees (both permanent and temporary) from different departments. Through my temp friends, I also interviewed representatives from placement agencies who recruit contractors. A year after leaving the field, between August and December 2007, I returned to BioCo for more interviews with scientists, engineers, production workers and the sales personnel. See Table 1 for the main data sources used for each chapter. The Appendix provides a detailed description of my methods.

Table 1: Main Data Sources

Group	Observation	Interviews[9]
Scientists	Limited to public space and scientist-purchaser meetings	37
Purchasers	11 months, 33 purchasers	49
Contractors	11 months, 27 contractors	35
Others[10]	Limited to public space and meetings	62
TOTAL		183

The following chapters are organized around the three groups, from the core to the periphery. As Figure 5 illustrates, I start at the core in BioCo exploring the professional identity of its R&D scientists. This set of analyses is mainly based on 1-2 hour semi-structured interviews with 32 scientists and my daily unstructured interactions with scientists while I was at BioCo. Then I move to the divide between line and staff, examining how purchasers try to establish a new identity as experts equal to their internal clients. This section is based on eleven months of participant observation with the group and interviews with all purchasers. Finally, I reach the periphery of the organization and look at how contractors handle the unique challenges of being "half-members." This part builds on observation, spontaneous conversations and semi-structured interviews with various types of contractors.

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[9] Some informants agreed to multiple interviews.
[10] Others include sales force, manufacturing workers, engineers, supplier reps, and HR personnel.

Chapters 3-5 each begins with demonstration of the identity challenges faced by members of the group, followed by a discussion of techniques people use to manage these challenges. Although all three types of approaches – interpretive, relational and presentational - are employed and discussed, each chapter focuses on one type of practice that is most prominent – an interpretive approach for scientists, a relational approach for purchasers, and a presentational approach for contractors. A conclusion section ends each chapter with a discussion of how relevant theoretical concepts illuminate the observations and vice versa.

CHAPTER 3: Justification at the Bench: Interpretive Approaches at Work

"I always remember when I went in and told Harris [his academic advisor] that I was leaving, giving up my postdoctoral position with the MRC [Medical Research Council]. He looked at me, and he accused me of prostituting."

– A scientist from Cetus Corporation (Rabinow, 1996, p.69)

Walking into the lobby of a seemingly commonplace office building, a visitor immediately notices the special artwork on the walls. Each framed poster consists of colorful bands, dots, and structures in pink, red, blue, or green. They look like abstract color paintings to the innocent eye. But the small captions at the bottom give them away. "Transplanted neural stem cells, shown by staining BrdU (red) that differentiated into astrocytes and shown by staining for GFAP (green) following transplantation into the mouse brain[11]" "Light microscopy of X disease" "DNA sequence color bands" "Hematoxylin and eosin staining of multinucleated tumor cell in a murine model of Y cell carcinoma" "Stem cells immunostained for neural markers." The Science as Art display is a signal that one has entered a science facility.

Central to BioCo, as to other biotech companies, are the scientists – biologists, chemists, immunologists, geneticists, virologists, and other specialists trained in areas of life sciences. The birth of the industry was the result of noticeable scientific breakthroughs and the sector has been associated with scientists and their esoteric knowledge ever since. Hundreds of scientists are members of the R&D organization

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[11] The technical terms have been disguised for confidentiality reasons.

(over 10% of all employees), conducting most of their work in laboratories. They,

particularly the PhD-level scientists, are the main characters of this chapter.[12]

These scientists share in common prior professional training and present status as

"industrial scientists" (Kornhauser, 1962), an identity label they would not publicly use.

Becoming a scientist is a long process, requiring four years of undergraduate study, from

four to six years of graduate training, and often several years more of post-doctoral

experience. This long learning process occurs at university laboratories. During this

period, young aspiring scientists not only acquire technical skills but also are socialized

into a set of norms about what it means to be a scientist, and what the professional ideal

holds for them. As we shall see, becoming an "industrial scientist," in a way,

compromises some core elements (Merton, [1942] 1973) of that ideal identity including

the altruistic goal of science, the cutting-edge quality of work, and the intellectual

challenge of day-to-day activities.

Faced with the charge of deviating from their professional ideal identity, the

scientists at BioCo use a combination of interpretive, relational and presentational

practices to meet this challenge. But they draw most heavily on an interpretive approach

to construct a framework of comparison that puts industry science in a better light. This

chapter focuses on this primary approach and discusses the elaborate interpretations the

industrial scientists of BioCo develop to justify alternative values. The interpretive

framework enables BioCo scientists to contest and shift the "order of worth" (Boltanski

& Thevenot, 2006) established by the norm of science. Defensively, they suggest that

academe is not as pure as it portrays itself, reject claims that industry does not produce

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[12] The majority of the data quoted in this chapter comes from 37 interviews with 32 scientists. Of them, 20 had a PhD, 3 with a Master of Science, and 9 with a Bachelor of Science. 17 worked in the research function and 15 in development.

good science by citing examples of visible publications, and highlight the intellectual challenge inherent in their work. Offensively, they frame industrial science as more desirable than academic science. They interpret the intensive funding pressures in universities not as a selective mechanism but as an institutional barrier that deters individuals from pursuing science with full force. Companies, they say, provide the needed infrastructure and thus become a better place for them to continue their scientific work.

The following sections start with an introduction of research and development scientists at BioCo. This will provide the necessary context for the subsequent description of the identity challenges they face. Both types of scientists, though with some differences, experience identity challenge resulting from a career deviant from the academic model. I then discuss three aspects of their interpretive approach to manage the identity challenges: reconstructing similarity to academic science, reconstructing difference from academic science, and establishing other comparisons. Further insights are elaborated in the concluding section.

Research and Development Scientists

Industrial scientist is a general term to refer to all scientists working for commercial organizations. However, they fall into two categories based on their work tasks at BioCo and where they fit in the general drug development cycle.[13] As Figure 6 shows, research, also referred to as "discovery" or "basic research," is most often "early

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[13] This is a simplified visual representation. There are overlap and grey areas between the two phases.

stage" work to identify therapeutic targets, either compounds or proteins, with desired

biological characteristics. As promising therapeutic targets go through more tests -- in-

vitro and in-vivo – they gradually move towards the development phase. The purpose of

this phase is to iron out the problems and push the drug towards FDA approval. The

questions to answer go from "Does it do what we want? Can this work?" in the research

stage to "Does it really work in a living organism? Does it work at a larger scale? Can we

make this thing in a reproducible way? Is it safe?" in the development stage. Research is

supposed to feed development with new product ideas. When the development group

starts pushing products forward, research people then spend the next few years on

second-generation products.

Figure 6: Biotech Discovery and Development Activities

Discovery   *Development*

| Target Identificatio | Target Validation | AssayScreen Development | | Lead Identification | Development Candidates | Preclinical Development |
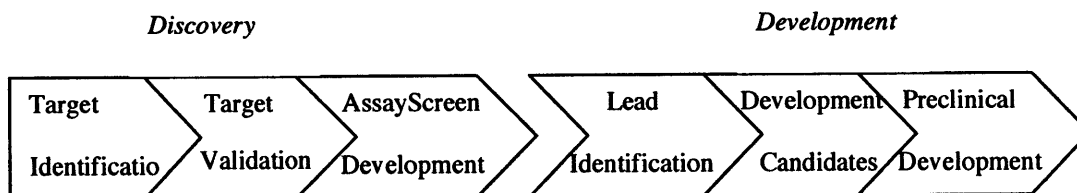
Adapted from Murray and Hsi (2007).

Several differences exist between research and development. My informants tell

me that as projects move towards development, teams get bigger, from 10 to 25 or even

100 people. Interactions become more complex, with input from manufacturing,

regulatory, and medical groups. More importantly, the level of procedural control, the

temporal structure of the work day, and the skill requirements also change.

Research and development scientists enjoy different levels of control over their scientific procedure. Development work is regulated by the FDA because its results are compiled into regulatory submissions. It is conducted under GLP (Good Laboratory Practice) guidelines, which dictate many details of the day-to-day bench work. Every step of lab work needs to follow the SOPs (Standard Operating Procedure). For instance, if a scientist weighs out a certain amount of compound, she needs to record how much she weighs out. Then another person has to review the notebook weekly and make sure that it is correct. In the research environment, scientists have significantly more discretion, in Bailyn's (1985) term more "operational autonomy." The requirement for scrupulous protocols and recordkeeping is much more slack. It is not uncommon that those in research labs cannot recall the details of experiments they performed a year or few before because their records are less comprehensive.

A second distinction is the temporal pace. In both research and development, scientists work similar hours (about 40-50 hours a week). But in research, projects are more unpredictable and what needs to be done from one day to another is more varied. Jackie, an Associate in research, describes her days this way:

> So basically my week is very variable. I don't come in every day and do the same thing from 9 to 5. Our week is variable all the time, depending on what type of experiment I'm doing. So basically one day I might come in and run an X assay. The next day I might start doing some amino staining on some tissues. Then I let that sit for two days and finish it on the third day. And in between, on the other two days maybe I run another assay. So you can plan your week around meetings, around presentations, seminars, things like that. It's constantly changing and constantly variable.

Work days in the development area, by comparison, are more structured. Projects are more defined. Billy, a research assistant describes his days:

I come in around 8. We'd start the testing. Get the phone call that I've got to go down and pick up the boxes of samples. Bring those back and process them. Log them in and then go back to what I'm testing, whatever the procedure was. It was always like do a test, wait two hours, change up the method of the test, wait another two hours. There is a lot of lag time between but during that lag time you have to be there. That's when I'd process samples. And then the next lag time is when I'd go mix radioactive labeling. You see everybody running around wearing timers on their lab coats. Every day was just dictated by the timer. The timer goes, you've got to be there to change the samples over. Do the test, receive the samples, continue the tests. Tests complete by 3:30 or 4 o'clock. And then report it and leave. Come back and do it again tomorrow.

This is the testing work for clinical submission. It represents an extreme of a repeated day structure. The days of many scientists fall between those of Jackie's and Billy's.

Because research and development tackle two different kinds of problems the skills required differ as well. Research scientists need to explore open areas and deliver "proofs of concept" on a small scale. Development scientists take selected promising ideas, further test them and fine-tune techniques to make them on a larger scale, faster, more efficiently and consistently. A research scientist describes the different problems and skills for both areas,

So in discovery I need to be abreast of a lot of different technologies around basic biological assays. I need to be adept at a lot of different pieces of equipment to be able to do those different types of assays. I also need to be aware of the biology behind disease states, to understand how you would develop assays to look for compounds that would be effective in a disease state. And so all of those things I need to be aware of and be able to do, to be able to identify compounds of interest. Someone in development needs to understand much more physical properties, toxicity, what makes a compound stable at room temperature if that's how you're going to store it. How you would formulate it for delivery to a person. A lot more of the physical characterization. Once we hand them a compound they want to know is that compound safe? They want to know is it safe? Is it stable? Can it be manufactured? Can it be delivered? Those types of issues.

These descriptions show that while both research and development scientists' work deviates from academic science, development work differs to a greater degree. As

"industrial scientists," both groups face identity challenges that they are a sell-out from academia, that their work is not good enough, and their work is too routine for a true scientist. Development scientists experience more of these challenges since their work has less resemblance to the academic mode. The following section describes these challenges in detail.

Identity Challenge: Deviating from the Scientific Ideal

For most BioCo scientists, the decision to pursue an industrial job instead of an academic one was not easily made. It is a departure from the expected trajectory after many years of training, and for most, is a road with no return. An associate in research says that it is difficult to be a scientist in a pure form in industry,

> "To be a true scientist [it] is very difficult to work in a corporation. Very few true scientists, I'd say, in any company. I mean true thought leaders. There are no professors. So it is actually more accurate to refer at least to most of us as actually technicians."

At the time of career decision and even beyond, many scientists experience doubts, hesitations, and even disapproval. The challenge of not living up to the ideal scientific identity is the result of a deep internalization of scientific values, great social expectation, and strong pressure from peers and mentors. The data reveal that BioCo scientists are confronted with several evaluations that mark their deviance from the professional ideal identity at the time of their career decision and thereafter. They feel as if they are sellouts or are not good enough. As the following discussion will show, these

challenging identity evaluations do not disappear as people get through the decision-making phase. Even after they move to BioCo, these challenges blend into laboratory life.

The Charges: You're a Sellout.

One of the first biotech companies in the country is the Cetus Corporation. Stories from early pioneers at Cetus were filled with pushback against their joining the company (Rabinow, 1996). One scientist was "accused of prostituting" when he joined Cetus. That was the late 1960s. Decades have elapsed between then and now, and the explicit accusations of prostituting themselves that some of the Cetus scientists experienced are no longer prevalent (at least not for BioCo scientists). Both industry and academe have seen many changes in these years. The line has become increasingly blurry as stellar professors and prestigious universities start companies (Stuart & Ding, 2006), faculty file commercial patents (Ding *et al.*, 2006), and universities build alliances with industry (Owen-Smith & Powell, 2004). The finding that the industry-academia divide is now less antagonistic is consistent with some BioCo scientists' own observations. Mike received his PhD in neuroscience in 1995 from a lab with a prestigious endowment. He recalls a change in the general atmosphere at that time:

> I think at that time there was also this whole idea of connection between industry and academe. Industry used to be thought of as kind of mercenary, but then at that time this was starting to break down. Like early '90s and so on - they were starting to realize academe should be working with industry and there should be a close relationship. Look at how close relationships are now with academe and industry. And so I think the stigma was breaking down at the time.

The harsh distinction may have been alleviated, but not eliminated. The sense of selling out – selling one's knowledge for profit, betraying one's professional training – still

resonates in the experience of today's scientists. Mike, after two years doing a post-doc at an Ivy League university, decided to join BioCo for a research position. He recalls,

> When I told my boss when I was doing my post-doc, I was going into industry, he said, "You can get THOSE jobs. They're available at any time." There was still this kind of stigma. They still had this kind of idea that you're selling out and going to industry. I thought it was -- actually I was surprised. We had interactions with companies even then, like with Bayer. Although we didn't think highly of them! [Laughing] It was kind of like academe was here and industry was here. [Making a hand gesture of high and low]

A development scientist, Eileen, also received cues from her fellow students when she told others that she did not want to set up her own academic lab. "It was kind of like, oh--" Though she chose to ignore it, the prolonged silence that greeted her announcement was a subtle but clear signal to her of the low status held by industry scientists. Eileen clearly remembers those, in her words, "prima donnas" of her lab in the '90s who thought going to industry was a "sell-out" or "compromise." Those graduate students were strong advocates of the idea that "industry shouldn't have a hand in pushing the advancement of science."

Whether a scientist is better paid in industry is not clear-cut.[14] A survey of life scientists found that the median salary for industry jobs was $107,000 compared to $77,900 in academia and governments (Zielinska, 2008). Other data showed that while early academic careers pay significantly less than industry equivalents, the gap decreases for tenured professors (Abbott Langer Association, 2006). Some BioCo scientists are not shy about acknowledging the role of finance in their decision. One scientist tells me, "I was at the poverty level. I want to be able to afford food, not worry about healthcare, and one day buy a house, and a car that works. So I decided to move on."

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[14] For average salaries for biotech professionals, see (Gans, 1992).

The Charge: You're Not Good Enough.

The second identity challenge that emerges in conversations with BioCo scientists

is the idea that industrial scientists are those who cannot survive in academe and are

washed out by the tough selection process. As Erik, a chemist trained in the UK, puts it:

> It's always been hard to move into academe in England. It definitely is not an
> easy path to go down. You really have to be extremely dedicated and talented. It
> really is the crème de la crème who ends up in academe in England.

This is the same perception that led Henry Carhart, a professor of physics, to boldly state

that "the quality of mind that discovers the laws of nature is of a higher order than that

which makes application of them" (Carhart, 1895, p.399). Many students had aspirations

for an academic life at the start of their graduate years, but select themselves out or are

selected out of that trajectory. Emma did her undergrad in chemical engineering. She

traveled around the world for a year before she was admitted to a doctoral program in

chemical engineering. After completing the program, she worked in a government

laboratory in two post-doc positions and eventually chose to join industry. Speaking of

her plan in graduate school she says,

> When I started I didn't know what it [being an academic] involved. So I thought it
> would definitely be a possibility. I was open to any task. And I think if I had been
> more successful earlier on as a graduate student, maybe I would have thought
> "Oh, this is something I can do." But in fact, my project changed after about four
> years and I could see that it was very difficult to get a project that would lead you
> to working on something very successful. And so my chances were better
> elsewhere.

41% of the 32 BioCo scientists whom I interviewed persevered through

postdoctoral periods and 9% held junior faculty positions at one time. They now all

remark that academic life is "cutthroat" and to them represents a difficult environment in

which to survive. Amy received her PhD in cell biology from a top university followed

by a post doc fellowship at one of the most prestigious medical schools in the country. She stayed there for 17 years and became a tenure-track junior professor. Looking back at the academic environment she says: "It's competitive there. It was a good but tough environment. The competition was stiff. Not everyone can survive." In her view, those who can tough it out stay whereas those who cannot leave.

Jennifer remembers that the principal investigators (PI's) in her program used to look down on people who went into industry, thinking they could not make it in academe.

> You would hear of somebody -- "What did so-and-so do with his PhD?" --That's what they'd [i.e. faculty] say. "What did he do?" "Oh, he's at University of Maryland." "Oh, Ok." Somebody else. "Oh, I think he went off and he's working for this small biotech." "Ohhhh, OK." [disapproving tone of voice]. It's like, he couldn't make it. He couldn't get a job as a PI in a lab or something. That's how their [PI's] career went. Back then, the status was whether or not you got a mostly research position or whether you got in like a four-year college or even a community college where you're mostly teaching. That was considered the less desirable. When you got your PhD you want to get your OWN lab. That's the gauge of success historically for scientists, to get your own lab and to get funding.

Ryan was a PhD in molecular biology and thought about staying in academe during his graduate years. He went on to a post-doc position where he wrote a grant, got some money and funded his own post doc. Compared to many peers, Ryan was doing well. But he said he soon realized how hard it was to fund a reasonable research effort and how many people just like himself were out there. "I was pretty good, but [there were] a lot of very good PhDs and post docs out there. It was the situation where I said, that doesn't really look that attractive to me, trying to slave away and maybe doing another post doc." He found the decision to leave the academy a difficult one. "The academic life in many ways is quite beautiful. It can be very good." His closest mentor and PhD advisor had been quite negative about industry and considered industrial work

to be "second-tier kind of research." Although this was more than ten years ago, Ryan thinks that it is still true today,

> I think there's still a degree of that in academe today. We actually do a lot of funded research for leading academics here in the area. We have very good relationships with the V and W Institutes. We fund post-doctoral researchers there. But I'm not sure that if those folks who are having post docs coming through their labs are not telling them - the very best post docs - they may be saying "You should be going to Harvard and looking at an academic career."

Deviance as Identity Challenges

A sellout implies a loss of academic purity. Being forced out implies inferior scientific competence. Both present an identity challenge that industrial scientists are not "true scientists." As is seen from many of the previous quotes, identity challenges become particularly salient when people find themselves at the juncture between academia and industry as they make their career choices. Faculty as well as graduate students can evoke these challenges. Through casual comments, they indicate that industrial jobs are second-tier, mercenary, and an inferior career choice. Given the importance of mentors in graduate students' lives, these evaluations greatly affect the students. At other times, the scientists impose these evaluations on themselves. It is difficult for them to openly admit the loss of the professional ideal identity, but we can infer it from fleeting comments such as Erik's. Saying "it is the crème de la crème that ends up in academe" suggests that scientists have great respect for those who could make it in the tough academic environment. Some of them still consider academic life as great if "you could make it work."

Though both research and development scientists face these challenges as they leave school, those in development continue to encounter them more frequently at BioCo.

Both the management and scientists (in both functions) acknowledge that many at BioCo

hold a view that a development scientist is less of a scientist than those in research. This

becomes pronounced when situations call for a choice between the two. Matthew, a

research scientist, tells me about a recent recruiting effort in his group. They interviewed

a candidate for a research position, who also had an offer from a development group at

BioCo. Though compensation is identical in the two groups, the candidate eventually

joined the development group. Matthew simply could not understand it.

> We were shocked! We thought, how could she want to do that? What a mistake!
> She's losing -- How could she go over there? It's not interesting. It's not very
> exciting. It's dull. I don't think she really knew what she was getting herself into.
> I mean personally I just don't think she had a real good understanding because she
> didn't understand the projects that we described to her. I mean the stuff we do is
> remarkably interesting. And if you don't get it, you don't get it. So I don't know
> why she might...

> Typically people really want to come into this group, this area. Typically the
> smarter ones will come here. It might sound biased again, but I think it's just this
> whole idea that this is as close as you can get to academe in an industry. It's
> absolutely the closest you can get, so in that sense it's great. If you look at the
> whole spectrum of drug development, all the way through to final approval, we
> are at the very beginning. And when you're beginning, you can try all kinds of
> things out. You can create a rationale and once you have that rationale in all of
> your presentations, you can essentially do whatever you want towards that
> direction. So there's a tremendous amount of freedom there AND also creativity.
> So in our area, my feeling is it is the creative, innovative part of BioCo. So how
> could anybody want to go somewhere else?!

Matthew did not say what he thought "she was losing." But from his remarks we can

infer that he meant that she was losing the opportunity to do interesting science, to have

freedom in her pursuits, to use her creativity, and in a sense losing the chance to be a

"real" scientist.

Matthew's statements were made in private, but in public interactions between the

two types of scientists at BioCo there are plenty of signs for these identity challenges as

well. When research scientists show disinterest in the presentations given by development scientists, they signal that they consider the work to be boring. When joint teams discuss project plans, research scientists indicate that development work is unchallenging and unnecessary by questioning the need for repeated tests. The continuous comparison between research and development makes some people uncomfortable. A development scientist says,

> One of the high-ups, he gets upset when people say science and development. "We are all science!! [mimicking him]" Do you do discovery research or development? There's some distinction there. Sometimes people say science only when they mean discovery research. He doesn't like that at all. "No! We are all science! We are ALL using scientific techniques, thought processes and so forth."

The identity challenges rarely come from people outside of science. They are, instead, often presented by peers in the scientific community: advisors, faculty members, fellow students, and colleagues. Scientists learn to take peer evaluations seriously (Merton, [1942] 1973). And as this last quote shows, the challenge of compromising the ideal scientist identity is upsetting for BioCo scientists, both the research and development kind. How do they manage it?

Justification with Alternative Interpretations

The foundation of the identity challenges for scientists is a principle that values "academic" over "industrial" research. To meet the challenge, BioCo scientists use interpretive, relational, and presentational practices. The dominant approach is an interpretive strategy, developing interpretive frameworks to dispute the underlying principle that assigns more value to academic activities over industrial work. The interpretive framework establishes an alternative "order of worth" that raises the

evaluation of industry science. The approach consists of several aspects: defending

against the charges of impurity and inferiority of industrial science, and reconstructing

differences and similarities between industrial and academic science. In doing so, BioCo

scientists justify their choice and position – to both themselves and others.

Defending the Charges: Purity of Science

To call the departure from academe to industry a sellout is to suggest that

academic research is pure in its intent – the pursuit of knowledge for its own sake -- and

that industry is financially driven. BioCo scientists readily dismantle this assumption. All

the scientists I spoke with in the company acknowledge that they need to link their

research to potential products, "driving it to therapeutics." But, they hastily add,

academia is going in that direction as well. A scientist, Amy, says that her work is going

"translational" (i.e. linking her work to patients). Yet, she adds this is what she was

already doing as a junior faculty at a prestigious university

> If your program is not focused on patients [at BioCo], it will be shut down. NIH is
> becoming like that too. It's not enough to say you want to work on molecule X or
> this cell. You had to say how it relates to patients. So I do that as an academic. In
> 1992, I wrote a grant. I had a clinician read it. He suggested writing a project by
> putting in an animal model of [an organ] injury. He sat on the review board at
> NIH. It depends on who at NIH reviews your grant. Some are more clinical. No
> matter what's in science, you need to have something to do with disease. Cancer
> and wound healing are common ones.

Another scientist observes, "There're not many people who have the freedom just to do

academic research without some type of industrial focus." A senior VP at BioCo

comments that nowadays financial concerns are becoming prominent for academics as

well:

Usually the feeling we get from academics these days is, "We would like some of your money." Quite honestly they're looking for sponsored research. And part of that is the relative lack of availability of funding from NIH these days. I think it's causing people to really be looking for alternative sources of funding.

Another aspect of academic purity is the public sharing of knowledge in the form of publications. A scientist at BioCo disputes this mark of distinction as well,

One of the academic aspects of what we do is we publish papers, probably no different than academia now. It used to be that one of the differences between us and academe is we always filed patents before we published. We'd wait to publish until those patents were reasonably far through the system. Academics do that now too. There's hardly anything of import that comes out of academe where the intellectual property offices have not carefully considered when the patent and the publication should come out. We do the same thing.

Patents, which are at odds with free circulation of findings and link to future financial rewards, caused controversy in the academic community but now are widely accepted in academia (Ding et al., 2006; Murray, forthcoming). The BioCo scientists take this as a sign that academics are as "guilty" of the impurity charge as their industrial counterparts.

Mike, whose advisor subtly challenged his decision to go to industry, is bewildered by the inconsistency of his advisor's advice and actions. He points out that this same advisor had a number of interactions with companies and had partaken in the entrepreneurial movement. He says,

Everybody was opening companies left and center. All these faculty members who had anything, any kind of ideas would actually set up a company!

Mike finds it hard to reconcile his advisor's participation in companies and his objection to Mike's move to industry.

These observations can be viewed as attempts to counter the assumption that academic science is pure, not financially driven and of a "higher purpose" than that of BioCo. Thus scientists at BioCo often point out that NIH, the most frequently sought

funding agency, rewards research related to diseases. They note that faculty start

companies, serve on advisory boards, seek sponsorship from firms, and use patents to

protect property rights more often than before. In their view, financial influence from

industry to academe is no longer rare. Highlighting this pattern is an interpretive strategy

designed to devalue academic research and hence elevate their own research effort. They

argue that industrial scientists cannot be sellouts if academics tailor their research to gain

financial advantages as well.

Defending the Charge: Quality of Work

The second challenge -- that the quality of work in industry is not up to par with

that from academe – is met in a similar fashion. Counter examples are put forth. For

instance, Ryan, whose advisor indicated to him that industry does second-tier research,

says with laughter,

> I would point out that I published many more papers in *Science*, *Nature* and *Cell*
> than he [the advisor] ever did. I did them all here. And my post-doctoral advisor
> actually works for me now [Laughing]. So I may have had an influence on him!

He continues with other counter examples:

> A huge amount of research has come out of corporate. You look at [Company X]
> and the work that a guy named John Smith there has done in [a specialty of
> biology] that has led to many drugs. He is the world expert in his area. He's not
> an academic. We did, I would say in the early 1990s, the world's leading research
> on [a disease] here at BioCo, in a very, very competitive area. We were
> competing with academic groups, but I think we out competed them. During that
> time, as I said, we published huge numbers of papers in absolute top tier journals.
> It's something we continue to do today. So I actually have no challenge at all
> getting up in front of anybody and talking about what we do from a quality
> perspective.

Ryan responds to the charge of work quality by invoking the same criteria that academics use – "publications in top journals." Citing evidence that he and others have accomplished what academics would regard as major achievements, he implies that corporate research is at least on par with academic research. It is worth noting that the examples he gives are highly selective and most likely they are "outliers" in statistical terms. He does not talk about average counts of publication but uses particular data points to refute the quality inferiority hypothesis. He is not alone among BioCo scientists. Ann was working with a well-known professor for her post-doc in a most prestigious university when she learned of a job opportunity at BioCo. She was hesitant,

> When you hear about industrial jobs when you're in academia, you always think the science isn't as good, the people you are surrounded by aren't that good, the pace isn't as fast, and you're looked at as a tool, as a technician as opposed to the thought you bring.

She took her time thinking it through, and the six-month interview process convinced her, she says, there is good science being done at BioCo. She took the job.

Reinterpreting Difference: More Impact

Besides using alternative interpretations to defend the charges against the purity and quality of industry science, BioCo scientists also develop other interpretive frameworks to highlight the differences and similarities with academic science. One interpretation leverages a feature unique to industrial work. The traditional professional ideal holds as its tenet the pursuit of knowledge for its own sake, even if there is no practical use (Gieryn, 1983). The BioCo scientists, while acknowledging the importance of furthering theoretical knowledge, take personal pride in working on practical problems

that may have a tangible impact on health. This scientist talks about how he weighs industrial and academic science,

> There was sort of the aspect of trying to avoid the ivory tower, which is, I could go and do research that's unconnected to human health. Or I could try to do something that might have a more immediate impact. I started, almost as a lark, interviewing with biotechnology companies. I just got very excited by it when I started doing it and hearing what was going on, and what people were doing. And also seeing that some of the things that people were doing actually had substantial potential impacts on human health. When I was interviewing at companies, I saw things that are now products. I talked with people there who were working on them back then. And it's sort of exciting to see some of that stuff move forward. You don't really get that sense when you're thinking about academic jobs. It's more, "How am I going to make my own career? How am I going to survive?" It's not, "How am I going to make a difference?"

In his statement, he is typical of many BioCo scientists. By presenting two types of research – an "ivory tower style" that is disassociated from application and an "industrial style" that is linked to disease treatment – he reframes them as equal choices. BioCo scientists often talk about this preference as a personal inclination and then relate the preference to their early inspirations and dreams. A scientist in research says,

> I wanted to get into industry. Because I always felt industry was so COOL in terms of developing drugs and so on. Research that would end up in like therapeutics, that was really cool. I think it was also true because when you're a kid you watch these kind of science television shows and so on. There's always this kind of relevance to application. [I asked about what shows he had watched as a kid.] I think there was a show called… I think it was "Science 2000." I vaguely remember. If I were to look at it now, it's just kind of like very low level kind of thing. But really actually that was so inspiring to kind of see how research could actually become practical. Whereas in academia you ask questions for the sake of questions. Very interesting nevertheless, you get completely absorbed in the question and try to answer it. But in industry you can get completely absorbed in the question, and at the same time you can think about how it can be used.

It is not uncommon for BioCo scientists to talk about their personal experiences in support of their choice for applied research. A woman recalls why she chose to start in a spinal cord injury lab while in school,

The spinal cord injury lab was really kind of a special thing to me because when I was in high school a couple of close colleagues of mine got into a car accident, two brothers who I ran cross country with both have suffered spinal cord injuries. And it basically changed my whole life, to know that this really traumatic thing happened to these two good people. They just published an article in the local paper that they both went to college and got their degrees. And one of them, the one who was paralyzed from the waist down, got married and the other one was all the way from the neck down and he's still living at home but still surviving, which is amazing. They were just very inspirational people to begin with and had a lot of good family support and strong faith and just a really inspiring family story. And so as an undergrad a lot of my friends were working in labs where they were characterizing yeast or doing different bacterial research and that just really didn't interest me. So when I found the spinal cord injury lab opening, it just totally made me feel like I could go and do something that was meaningful, that was close to my heart.

She chose to join the lab and that led her down the road of neuroscience. Not only do the BioCo scientists publicly profess a personal preference on applied research over basic research, they also attach different values to different kinds of applied research.

Personal stories that involve sick family members, neighbors, and friends are prominent in the accounts BioCo scientists provide for choosing to do applied research. The private and public sharing of these stories is a mechanism that strengthens the reconstructed advantage of industry science. Patient visits are organized; videos are disseminated; pictures are sent around. Scientists tell about the "emotional moments" in these encounters. A man recalls an event three to four years earlier,

One time, they brought in the father of a boy who had [the disease] and died. And he showed his son's picture and said it was the last picture taken of his son and he talked about what it was like having a child who died. We ate lunch together with him and we just talked. And it was a pretty emotional experience for me just to see this dad who has lost his son.

Stories like this, apparently, strengthen his commitment to his career choice.

There's no doubt that at the end of the day I feel like if we're successful it's going to be great. You kind of feel like you're making history a little bit. You never know when the next result might actually be meaningful to people. And I always

feel like it's right around the corner. Could happen today, could happen tomorrow. And that impacts me every single day.

Reinterpreting Difference: Less Distraction

A second aspect of the new interpretation emphasizes the institutional and structural shortfalls of academia that would interfere with their ability to carry out scientific work. They argue that the way academe works actually makes it difficult to do the science they want to do. They claim that an affluent corporate environment allows them to pursue science with less financial distraction.

The most common complaint about academic science is the intensive pressure for funding. Amy spent 17 years at the nation's top university struggling to get the infrastructure set up for her continued work. She points out that funding in academe is "soft money" as opposed to "hard money" in industry.

> Soft money means if you want research assistants, you need to have a grant, to pay your supplies, people and yourself. Here it's hard money. There's no grant. Your salary is guaranteed. At the University if you don't have grants, you can lose your lab and your job. It was a struggle at the University. I was looking for a start-up package to make significant movements. Even if you are the smartest and most brilliant, if NIH doesn't like what you do, you're gone. You need the chairman's backing and support. The department needs to invest in you. They need to set aside a sum of money for you.

She looked at a few academic positions around the country for start-up packages, but without much success. She notes:

> Since NIH cut back the budget, departments are reluctant to hire. I would get interviews, go there, and the chair decides not to fill the position in the end.

With limited support, Amy finds that her hands were tied when it comes to running the lab. As we chat, she does some mental calculations for me:

> The company treats me better than the University. Some little things. There was no place to park at the University. If you want a place, you need to pay $200. Here you just pull into the parking lot. At the University, xerox, phone call, fax, everything comes from the grant. Xerox was 8 cents a copy. And it was linked to your grant. If you want to make a phone call outside of the school, you have to punch in a 16 digit secret code. Then you need to decide whether to give that secret code to your students or not. If you give it to one person, then suddenly you have 50 calls [on your bill].

It is unusual to see a mid-career scientist from a renowned institution counting pennies. But other scientists at BioCo echo Amy's financial concerns. Keira says she talked with new assistant professors when she was a graduate student. She remembers that all of them were complaining to her about spending their time doing paperwork and writing grants, "keeping them from being in the lab doing experiments." "That's NOT what I wanted to do. I wanted to be able to FOCUS on the science." She declared her intention to join industry against the norm in her elite program. This apparent loathing about having to "compete for grant every three years or see ya" is a common reason given by BioCo scientists for why they prefer working in industry.

And there are grounds for such perceptions. Science is becoming increasingly "big" and expensive (Price, 1963). Setting up a lab, keeping it running, buying materials, and hiring personnel require significant and continuing investment. A scientist explains the infrastructure required for doing science:

> I have to go in the lab and work, so I need chemicals. I need reagents. I need to use the animal facility. I've got all the things I do and all the support. We have a janitor. We have a dishwasher. We've got all the support that goes into just one person working in the lab.

In an academic lab, these expenses all come from the PI's grants. As Amy says, losing grants means losing the lab and losing the job. So, she says, if NIH does not like the research, even the smartest and brightest cannot progress in their careers. Endless grant

chasing is limiting for many aspiring scientists. Several of my informants cite the need for "grantsmanship" as a necessity for an academic career and say that they consider it a significant distraction of their time and energy. The kind of support and infrastructure Amy had sought for almost two decades in the University but could not get, she says, are now readily available to her at BioCo after only three years.

> BioCo lets me continue my research like it has always been. And they asked me to set up my own lab, which is the same in academe. Additionally, I can bring in people to continue the work. I built the lab. Now I have four research associates and two PhDs. This is an opportunity I worked so hard to get at the University. Associate professors have about this level of personnel there. If you ask me, do I miss the University? In some aspects, yes. In some aspects, no. I miss the intellectual banter with my colleagues. But overall, I'm doing the research I have the passion for. If you want to succeed, you need support. So far, BioCo has been supportive.

Many scientists talk about BioCo as the best of both worlds, where they can conduct research with sufficient infrastructure. Another scientist elaborates:

> So the nice thing about BioCo is our research really feels very academic and that's like writing publications and doing research. It feels like an academic setting but you're working in industry and getting the benefits of working in industry. So that's what is ultra desirable. We're in the thick of generating new research ideas and new indications. You don't have to apply for grants. You have the funding. And it's really nice actually.

The new order of worth is established on the practicality of getting science work done. Although those I talked with say the freedom to pursue scientific ideas is higher in academe, the necessary material support is seen as less available and grant writing, teaching preparation, and committee work become distractions pulling one away from science. Choosing a situation that allows scientists to "focus on the lab work" without other obligations is then construed as preservation of the professional ideal identity instead of a compromise.

Some scientists adopted more personal interpretations to justify their choices. These frameworks are typically based on personal life preference -- not professional norms -- and are used less often. "Work-life balance" is one example. Women use this framing frequently. I never heard male scientists use this justification. To some women, the degree to which academic success subsumes the rest of their life is not worth it. One scientist said she decided against a university career after observing her role model up close in school. She said her mentor's two-year-old daughter relied on the telephone for a "connection" with her mother. This struck her as a vivid example of sacrifices scientists have to make in universities. Another female scientist exclaimed, "We don't live to work. We work to live!"

A second example of a less frequently heard justification is a preference a few BioCo scientists say they have for a collaborative versus isolated work. The scientific acculturation process in life sciences is keyed to individual and personal achievement (Knorr-Cetina, 1999). In a sense, it trains people on "how *not* to collaborate" (Rabinow, 1996, p.44). Long hours are demanded and social life outside of the lab is limited. Several scientists at BioCo mention that they desire a more collaborative environment instead of the "dog-eat-dog" world of individual competition they say characterizes the university. They note that being nice and being good can be mutually exclusive at universities and academic freedom tolerates, even fosters, "jerk PIs." Again, women use this reason more than men.

The view that industry science is mercenary and inferior is partly based on the perception that the work in industry is repetitive and not intellectually challenging. Development scientists bear this challenge more than those in research. Thus in response, development scientists emphasize the intellectual challenges of their work. Talking about what is needed of their work, development scientists stress rigor, discipline, and thoroughness as necessary qualities for doing good science. For example, a development scientist says:

> We have PhD people who come in fresh out of school, and they think they can do assay development. They put together an assay. But they never take it through the rigor that you have to take it through when you do REAL assay development and validation. We have to look at toxicity. We have to look at robustness. We have to look at precision. There's really a lot to it. A basic researcher would put something together.

She tells me with frustration that there are occasions when the assays put together by researchers did not pass the various tests and her group had to redo them.

A few labs do both research and development work. They experience the difference in the two types of work, but also learn to appreciate what it takes to produce quality work in either area. A scientist, who is a process chemist doing both, explains,

> Development side you need a lot of patience. You do the same reaction fifty times over and tweak out the nuances of that reaction. Whereas in discovery you sort of make something once and then you can move on and make something else. It's definitely a different mindset. The process chemists are able to do both. Medical chemists [typically in discovery/ research] won't work in the process area. It's quite funny. They see it as boring. But we're fascinated by both. You will do the same reaction 15, 20, 30, 40 times until you work out all the different variables with the temperature, stirring speed, all the different things that would affect the reaction play into it. We find that challenging.

His interpretation resonates with other development scientists. They find "fun" in both types of work. Many of them emphasize to me that scaling up from what researchers can

produce in a petri dish to bulk production in bioreactors is not a simple linear process.

They say tremendous time and energy go into understanding precisely how each

ingredient and environmental factor affects the reaction, so that they can produce a

reliable and repeatable process. There are many unknowns development scientists try to

understand and they call themselves "problem solvers." A research scientist agrees to this

view:

> I do think that they [i.e. development scientists] come across problems that are
> very challenging and they need to be creative in how to solve them. But they are
> not pulling in novel biological observations to try and exploit those to generate
> therapeutics. So there is a different type of creativity.

Viewing development scientists as "problem solvers" neutralizes their distinction

from research people. According to this view, they, like the research scientists, solve

difficult technical problems. Only their problems are different and the creative skills

required are of a different type. This interpretive framing makes development scientists

more similar to those who do research, at BioCo or in universities, thus mitigating the

challenge that they are not doing real science.

Conclusion

Industrial scientists face the identity challenge that they have not upheld the

professional standard and have betrayed their training. Throughout its history, the

scientific community has been governed by a strong ethos and has effectively used it to

claim credibility to the general public and construct meanings for themselves (Gieryn,

1999; Merton, [1942] 1973). Although evidence demonstrates that scientists' actual

behaviors do not necessarily follow the expressed norms (Mitroff, 1974) and that

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scientists follow heterogeneous career patterns, the normative pressure continues to underscore a prototypical identity which people *ought* to develop and display (Hermanowicz, 2007). Traditional academic science in research universities is still regarded as having a professional status premium.

With commercial activity becoming more acceptable in academic science very recently (Etzkowitz, 1989; Stuart & Ding, 2006), the professional stigma has lessened as the conversations at BioCo reveal. As I have shown, however, it has not disappeared. Becoming an industrial scientist is still a devalued career path for PhD trained professionals who are under the normative pressure to follow the traditional paths.

An interesting observation is that research scientists at BioCo challenge the identity of their colleagues in development. They express the view that development work is more routine, more restrictive, and less creative. They view development scientists as lesser scientists the same way that they are themselves viewed as lesser scientists by academics. What the data at BioCo suggest is the increasing identity challenge as one's work moves further from the prototypical scientific model.

As the quotes show, the identity challenges occur most prominently during career changes. The scientists I spoke with can still recall that period in their early career in vivid detail. After they enter the BioCo world, the challenges persist but mostly emerge during interactions with other science groups. When they interact with non-scientists at BioCo or outside of the company, however, the challenge occurs rarely, according to my observations of meetings and other events.

To manage the challenge, BioCo scientists use a combination of interpretive, relational, and presentational practices. They present themselves as similar to academics.

They try to stay on top of the expanding literature with piles of papers on their desks and scan electronic publication alerts in their inbox. Presentationally, the hallways are covered with large conference posters just like the hallways in universities. Their offices prominently display scientific reference books, textbooks, posters of biological processes, and models of molecule structures. They get together for "Journal Clubs" where participants read and discuss papers. Not only do BioCo scientists present to each other as preserving the academic work styles, they also use relational practices by keeping engaged in the academic research community, attending conferences alongside academics, giving presentations, and publishing papers in academic journals.

The interpretive approach, however, is the dominant strategy among the BioCo scientists to ward off identity challenges. They collectively reconstruct and reorder similarities and differences between industrial and academic science. The new comparisons are intended to provide justifications for their career choice. Justifications, according to Lyman and Scott (1970), are "socially approved vocabularies that neutralize an act or its consequences when one or both are called into question. To justify an act is to assert its positive value in the face of a claim to the contrary" (p.117). The justifications function as "alternative measuring sticks" (Lamont, 2000). They are repeated, modified and reconfirmed over time (Silber, 2003), and provide "scripts" (Barley, 1989) for scientists to interpret and present their work.

CHAPTER 4: Campaign From the Cubicles: Relational Approaches at Work

"We are service. We are not servants."
     -- A lab support employee at BioCo

A variety of support services makes the scientists' work possible and smooth. Engineers install fume hoods, maintain lab refrigerators, and keep equipment running. Environmental and health specialists ensure that the storage and disposal of chemical and biological hazards are within safety standards. Lab support personnel make sure that flasks and other reusable glassware are collected and washed properly. Computer experts maintain the network and troubleshoot software and hardware problems. Purchasers provide sufficient and timely lab materials for scientists' daily experiments, and the materials and services that engineers, environmental specialists, lab support staff, and computer experts need for their job as well.

People often use the label "service organization" to refer to these support groups, which roughly include HR, finance, customer services, facilities, quality control and assurance, environmental health, and security.[15] This chapter takes a close look at one group of those service providers. They cover a wide range of functions and constitute a considerable proportion of BioCo employees (12%). Those working in these groups are keenly aware of their service role and tell me that the definition of a service role is that they do not produce any tangible goods, but provide help to internal clients. The service providers experience a different type of identity problem than scientists. Far from having

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[15] Even in non-service departments (e.g. R&D, manufacturing, sales and marketing), there are subgroups providing service to others in the same department. Conversations with them reveal similar dynamics as those of general administrative staff.

a strong (and controlling) professional identity like the scientists, purchasers feel that their work is not well understood or valued by the people they serve.

This chapter tells the story of a group of purchasers as a detailed and concrete example of service providers. Some background information about what they do is in order first. In general, a purchaser's job is to facilitate the business transactions around materials and services needed by BioCo employees. They buy materials such as pipettes, centrifuges, IT hardware and software, promotional items, and so on. They also outsource services for clinical trials, marketing research, placement service, construction services, and the like. The job entails a range of activities from processing individual purchase orders, to assisting other groups in the selection of suppliers, establishing supplier contracts, and managing ongoing supplier relationships. For example, if a researcher needs gel for experiments, she can submit a purchase order and a purchaser would process the order for it to be delivered. For larger transactions, the process is more complex. For instance, if the company is launching a clinical trial and needs to outsource it to a CRO (Clinical Research Organization), purchasers can help the research group identify potential CROs, evaluate them, reach a final decision, and establish contracts with the chosen CRO. During the course of the trial study, purchasers may also assist with problems as they arise. They are organized into small groups by specialized commodity areas and the departments they support. These departments and specific individuals in these departments are called "internal clients."

Unlike the scientists who deviate from the well-established professional ideal identity, purchasers struggle to establish a professional identity they desire. Consequently, they rely primarily on relational responses to build a worthy image of

themselves vis-à-vis others. As I argue in this chapter, they engage in an on-going

"campaign" to market themselves to others in the organization and try to shape their

clients' perceptions and behaviors toward them and what they do.

Identity Challenge: Discrepancy in Identity Claims

Purchasers think of themselves as "subject matter experts" who provide

specialized services to clients. However, they feel that this is not how their typical client

perceives them. They say they are disappointed that internal clients treat them as low-

skilled clerks. This discrepancy between an identity they espouse and one that clients

grant them presents a constant challenge and a source of frustration.

Espoused Identity

The purchasers, particularly those with extensive purchasing experience in

industries such as high tech, telecommunication, defense, government, said that their role

was the "sourcing expert." Although they were still called the purchasing group, their

counterparts at some other companies had the title of sourcing department. Regardless of

the name, the people envisioned their job to be helping clients find the best sourcing

solution whether the clients need tangible goods or intangible services from third party

firms.

Their aspiration to be viewed as experts is built on an understanding of the

knowledge required in this line of work. Three areas of expertise are relevant here. First

is the knowledge of the market. Internal clients need a wide variety of commodities and

services. A scientist could need materials such as reagents, chemicals, pipettes, animals

and tissues, instruments such as bioreactors, protein machines, and centrifuge, equipment such as special gowning, freezer, or particular software programs, and services such as testing and data analysis. Research facilities need special setups such as water treatment for different water types for experiments, or cleaning services to ensure compliance with Good Clinical Practice (GCP). Each of these needs represents a separate market with a great number of suppliers whose quality and price vary. Purchasers consider it their job to be familiar with the markets they specialize in. This includes knowing the commodity, for instance, knowing what a monitoring visit in a clinical trial entails. The market knowledge also includes an understanding of the major players, their reputation and offering.

The second area of expertise is the sourcing process. To pass the purchasing certificate exam, candidates need to have both theoretical and practical understanding of how to conduct bids and work with an RFPs (request for proposal). Some purchasers identified this as a crucial area of their contribution. "We are the process experts," they said.

The third area is knowledge about contracts. This includes the ability to work with legal languages and negotiate terms with outside suppliers. Purchasers see the drafting of a contract as a work of art. They talk about the art of contracting in many ways:

> When I have all the ingredients, it's like a recipe. How do I mix the ingredients? It's an analogy of baking. Sometimes it can be a gourmet meal, and it's superb. Other times, I may experiment. Try something new. I may mix things wrong. Is the recipe for omelet the same? All restaurants serve western omelet, same name and even same ingredients. They taste different.
> ***
> You put it [a draft contract] on a table, and then you wait a while. You see it in different light. You reflect on it. The same with writing. Do you send your first draft to people? You read it after a few days. It may look

> horrible. You may find that the things you want to convey are not communicated well. So is contract [difficult to write]. It can be interpreted in many different ways.
> ***
> It's like I'm marrying you, and [the] contract is like a pre-nuptial agreement. If things are good, this is what we will do. But if we divorce or separate, this is what's going to happen.

Part of purchasers' work resembles that of a lawyer. In fact, lawyers would help with contracts, but according to purchasers, lawyers deal with many kinds of legal documents and often lacked the business knowledge to understand the specific arrangements peculiar to sourcing needs.

The espoused expert identity translates into the practice of early involvement in projects in particular, helping with the vendor selection stage. A purchaser described the ideal model,

> The minute you need something, you would work with us whether or not you have the budget. We can start the process. When you are ready to go, the information will be ready for you. If you have budget, you will get the contracts almost ready to sign. If you didn't have budget, you have the information.

Another person shared the same idea,

> I think, and a lot of people talk about this, we need to integrate purchasing at the early decision process as soon as possible. We become a member of the functional group, part of the selection, negotiation, decision process. The role needs to be shifted. First, develop and get technical specifications. Second, establish sourcing strategy, work with purchasing group to find potential suppliers. Third, participate in bidding process, statement of work. Then [send out] proposal, RFP [request for proposal], and put into contract.

The espoused identity is based on purchasers' desire to be respected for their expertise. It also comes from their prior experiences at other companies. 63% of them had worked elsewhere as a purchaser for an average of 9 years. At most of those companies

(outside of the biotech industry), purchasing, they say, is more valued and engages a more active role in the managerial decision-making process than is here at BioCo.

Early involvement projects occasionally occur but they are, to the purchasers' lament, not the norm. The ideal can be observed occasionally. For example, Stan has finished an outsourcing project for a cleaning service. He collected floor plans from the internal clients and made a spreadsheet of square footage and different cleaning requirements for various parts of the facility. He attached the documents to an RFP. Several interested cleaning companies sent their representatives for a walk through the facility and an opportunity to ask clarification questions. When the potential suppliers handed in their proposals, Stan put together a spreadsheet that compared them on a variety of dimensions. The internal clients received the summarized spreadsheet and were able to make an informed decision. Stan proudly announces that this is a model project:

> It's very clean. We do the process. That's what purchasing brings in. It's clear what we have done, and why we make the choices.

In another project for customized training materials, Hans follows similar practices. He conducted bidding for the work, qualified potential suppliers, collected proposals, and evaluated them for the internal clients to make the final decision. Then he negotiated the contract. He says,

> In theory this is how things should be. This one has a clearly defined need, prequalified vendors, bidding, evaluation, negotiation and engagement. This is a good model in the perfect world.

Practices where purchasers are involved early in the project are, to purchasers, the most desirable. They can understand the needs of the project from the beginning, gather the information they need for effective selection and negotiation, and possibly influence a project's trajectory. However desirable the practice is, Stan and Hans as well as others

acknowledge that these early involvement projects are not typical. Most of their work

deviates from this model.

Enacted Identity

The actual projects typically feature no involvement or late involvement on the

part of purchasers. No involvement is the case where the internal clients have picked

whom they want to buy from and on what terms. In other words, the internal clients have

conducted the selecting and contracting phases of the project on their own without letting

the purchasers know. They then forward their decision to the purchasers to get the

necessary paperwork done. In a meeting with an external sales rep, I observed the

following conversation:

> Purchaser: At BioCo we try to get in the decision early, [but] we don't see the
> order till the end after everyone has signed it.
> Sales rep: That's unusual. It's the other extreme at [a big pharma company].
> Everything goes through purchasing first.

No involvement happens when internal clients have picked the vendor and

decided on the terms as well. The only thing left for the purchaser to do is processing the

order paperwork to get the transaction complete.

Here is an example of a no involvement project. A research group needed to build

a kilo lab for $2 million. Bill, a VP scientist, wanted company Alpha to do the job

because as he said he had 20 years of experience with Alpha and liked them. Randy and

Tom, the purchasers on the project, felt it necessary to consider other vendors and

different options first, given the size of the project. Bill was insistent on using Alpha and

repeatedly pushed the purchasers to clear the paperwork. Further talks with Alpha made

Randy and Tom more and more uneasy. They knew from experience that a project like

this required large capital investment upfront on the part of the vendor. Alpha was a small operation and seemed to show signs of financial stress. The purchasers pushed back on Barry but could not change his mind. They, however, slowed the process down. Several weeks after the initial project meeting, Alpha filed for bankruptcy. Everyone was relieved that they were not stuck midway with an unhealthy vendor. In this project, purchasers were asked to do the paperwork and if they had followed that model without question the project would have ended up in trouble.

Not all projects were of the same scale as the kilo lab project. Many were smaller. One afternoon, Henry received an electronic requisition for promotional items. He called the woman who made the request because he was working on a deal with the same supplier for another internal client group. This was an easy opportunity to reduce pricing by lumping the two deals together. He explained the opportunity on the phone and coached her on how to work with this particular supplier. However, he was unable to convince the woman to consolidate her deal with that of another group because she "had already awarded the business" and notified the supplier. This was a common case for him and he told me, "This would be an example of us not involved in the project." Sometimes purchasers did not learn about these deals until long after the transaction. One person humorously referred to these instances as "the dead body rising from the grave."

Another practice deviant from the ideal is what purchasers called "late involvement." It occurs when purchasers are not included in the selection phase but are brought in to negotiate better terms after the clients have already chosen a supplier. George is working on two projects with his scientist clients. In one project, the internal clients have a five-year reagent rental agreement with a supplier but want to break the

contract to switch to another supplier for better technology. On the other project, the internal clients want to buy several pieces of expensive equipment from a supplier they have already identified. For both projects, the internal clients want to engage in a reagent[16] rental agreement instead of a standard purchase. Brought into the negotiations, George is frustrated with the researchers' choice:

> For some reason they prefer rental. I was trying to ask why. They couldn't tell me. In rental agreement you are making commitments.[17] Why would you want to make commitments? You want to be able to switch to the next guy if they're better. They said that reagent rental agreements have worked well in the past. I said the first one I saw was the one we wanted to get out of.

But he also says that the internal clients will not listen to him because they have their minds set already: "I wish they could involve us earlier. But this is typical." Pessimistic about his chances of convincing the internal clients that he knows best, George takes a distancing stance and looks at these as "interesting cases" to see how the internal clients can pull the projects off.

When purchasers are brought in late in the process, they may also find themselves having to make up for clients' lack of due diligence. Jerry describes one of his projects,

> They came and said we want Company Y [for testing services]. And then there was some suspicion with the data [provided by Y]. Then I found and suggested two other companies. We brought one in for a presentation and we want to do a pilot study with them. The process is almost reversed. The procedure should have been that we bring in several companies for presentation, we give them the spec of what we want, and ask them to give us a proposal, pricing, et cetera. And we go from there, to come down to one.

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[16] Reagents are chemical materials used by scientists in their experiments.
[17] In a standard purchase agreement, the company buys the machine first and buys reagent for the machine subsequently according to project demand. There is no quantity commitment. In a rental agreement, the company gets the machine for free but commits to buy a certain amount of reagent every year even if it does not need that amount.

Nonetheless, the practice of late involvement is, to purchasers, better than non-involvement. But it still keeps purchasers out of the key decision-making phase. They are asked to perform a negotiator role, getting the contract in place. If purchasers disagree with the choice (as in George's case), they have little chance to persuade internal clients to change direction because the clients have already made a decision. Clients, it seems to purchasers, are willing to give the project a second thought only when things have gone wrong (as in Jerry's case). The extra trouble, according to purchasers, could have been avoided if they, the purchasers, participated early on and performed their own due diligence.

The identity internal clients enacted with purchasers through their practice differs significantly from that formed by purchasers about themselves. Clients routinely keep purchasers out of key decision-making processes and bring them in for the busy paperwork or the dirty work of haggling with suppliers. The no-involvement projects, in particular, support an identity for purchasers of "paper pushers," who, in my informants' words, deal "mindlessly with paperwork." This contrast sharply with the identity purchasers envision for themselves: "experts."

Campaigning for a New Relationship

Since internal clients initiate projects, they determine how and when to involve purchasers. They have a good deal of control over their projects. Purchasers do not passively accept the status quo, however. They think they deserve to be treated as experts and are determined to change the opinions and practices of their clients. To that end, they have launched an "internal campaign" to market themselves. It is a campaign to reshape

the relationship with clients, to change client interaction patterns, and to expand the tasks

purchasers carry out. In this campaign, purchasers take initiative and approach their

clients to demonstrate their ability and try to integrate themselves into client teams. When

met with resistance, they nonetheless stand their ground and carefully maneuver forward.

This section details how they manage their delicate relational distance with their clients.

Approaching the Clients

Given that the clients determine the trajectory of a project, purchasers often

approach them assertively in order to be integrated into their teams. They work on getting

close to the clients both in terms of physical location and psychological familiarity.

Purchasers do not work out of a central office. Instead, the department locates subgroups

close to their client departments. In a purchasing staff meeting, the topic of office

relocation comes up. A three-person subgroup has been sitting on the same floor as their

client groups. But the building they are in is running out of space and an adjacent

building is available. Managers are deciding who should stay and who should move to

the new building. The question of whether this small group of purchasers should move or

not comes up in the meeting discussion. The manager solicits input from his staff. They

tell him that they would prefer to be with their clients in the same building. The manager

concurs: "Your folks [i.e. clients] are here. I think you should move only if your people

are leaving [for the new building]. But they are staying here. So probably it makes more

sense for you to stay." Both the manager and the purchasers agree that their choice of

location should not depend on which building they personally like best. Instead, they

should follow their clients. Physical proximity provides purchasers with more informal

face time with the clients. They run into each other in hallways and the cafeteria. The

purchasers' view is that visual presence keeps purchasers on clients' minds and easy conversation builds a rapport.

With geographic proximity, purchasers hope to gain easy access to clients. On the other hand, they also try to create a comfort level by hiring people who share the clients' background. In each group, there is at least one purchaser who comes from the client side. They used to work as, say, a scientific researcher, facilities manager, IT technician, manufacturing worker, and the like. Their groups value their experience on the other side of the fence and believe such experience will bring them closer to the client. A new hire, Paul, is proud about his connection with the internal clients:

> My background is in facilities. I know very little about contracts. They [i.e. the purchasing department] don't want someone with a lot of experience. They want to train their way. I know what the facilities people want because that's what I would want. That's what I bring to the table, the value added.

He goes on to explain the problems a facilities manager faces,

> A good facilities manager needs to be good financially. We say a facilities manager is a juggler, juggles between many different things. You want to make the customers happy. You want to make sure that you can afford to make them happy. The way I was brought up, a good facilities manager needs to do budgeting, planning for capital projects.

Paul's boss also values his facilities background and thinks that this will help Paul to get more projects from the clients.

Purchasers hope a commonality in background can lend them more credibility with the clients. In some cases it works. A scientist appreciates that Gordon, the purchaser working with her, comes from a lab. She says, "He told me that he worked in a lab. He understands labs. He tries to understand the technology." In fact, Gordon tries to bring up his prior working experience whenever possible during meetings with internal

clients and suppliers. Statements about his prior biotech employer and lab position, usually delivered in a casual manner, draw visible reactions from the listeners. They would turn to him more attentively, with a sudden raise of eyebrows and occasional nodding.

A sense of comfort also comes from purchasers' claimed ability to share the thought process of their internal clients. A purchaser specializing in clinical trials explains to me that she considers herself a member of the clinical team:

> I told [my boss] that I see myself as a team player with the clinical team. That's our client. When I was at the Christmas party [organized by the clinical department] and heard Roger [the clinical department head] talk, I can understand what his goal is. We want to do what we can to do a good study, to get drugs to the patients.

Being a "team player" means that she "wants what's best for the study." This requires purchasers to display that they employ the same thought process or priorities as their internal clients. An example is the importance of project cost. Cost saving is one of the performance measurements for a purchaser. But clinical clients often regard quality and timelines as more important. To be a team player, one needs to show that they understand and take the client's perspective when weighing different options.

> If you point out that the vendor forgot to include some costs, you are getting at a more accurate cost. But the price goes up rather than going down! How can you put a cost saving there? Sometimes the team agrees with the vendor. You don't have opportunity to get cost saving. But you help the study continue. They [managers in the purchasing department] talk about the number of contracts, the amount of cost saving. What about quality? What about how many clients you work with? What about how satisfied they are? We are not just going in to cut the price.

In sum, purchasers try to influence their clients by locating close to them geographically, by demonstrating that they share common background, and by appearing to take on clients' perspectives. These are self-initiated efforts that do not require client

approval. However, these tactics alone are not enough. Purchasers believe that in order to learn about upcoming projects, hear about changes in current projects, and be influential during purchasing decision-making, they must also attend and participate in clients' staff meetings.   .

... But Facing Rejection

Purchasers want to get into clients' meetings where important project information is exchanged. They want to know what projects are being considered so they can plan ahead. They can also capture opportunities for consolidation across projects that would otherwise go unrecognized. If they know what is being planned, they can work more "proactively" than "reactively." Unlike geographical and psychological closeness, attending meetings requires approval and acceptance from internal clients. Most staff meetings are exclusive. Internal clients often forget to invite purchasers, either accidentally or purposefully.

Kim works with scientists and tries to get herself invited to the annual science meeting. One afternoon, a health and safety specialist, Cynthia, is complaining to her about a bottle of inflammable chemical left in the hallway. Kim promises to check with the supplier rep regarding this. Then Cynthia mentions in passing that she is having a table at the science off-site meeting to give out health and safety information. Kim quickly reacts to that and asks if she could go. "They don't allow everyone to go," replies Cynthia. After the conversation, Kim tells me in her car,

> That's the science off-site meeting. It's for the science community, the people we support. They go off site once a year. We try to get in. It's good to see what they're doing, to have a sense of what's coming. And

it's good to mingle, to get to know people. Sidney [her boss] and I went in 2003. I was pregnant, so someone gave me a seat. But there were people literally sitting on the floor. They talked science. There were presentations, many posters. It's like a science conference. They talk about their technique, and so on. They don't want anyone in there.

For an ordinary person, for someone in purchasing, maybe it's not so exciting. But I have a science background. Gordon [her co-worker] has a science background too. Last year, they were cutting back on the invitation. They limited people. We tried to get in, but they said they don't have enough space. So when I heard that Cynthia has a table there, I thought maybe I could sneak in with her. We'll see how it goes.

To Cynthia's disappointment, she was not able to get herself on the attendee list.

Another group of purchasers is trying to get into their clients' regular staff meetings. The discussion comes up in their own weekly meeting. Ralph, the manager, attended Bruce's [i.e. their client manager] staff meeting the week before. He was invited to communicate what purchasing does. He is now summarizing the visit to his staff, Catherine, Todd, and Daniel.

> "There were 20 or so people at Bruce's staff meeting. Generally, I'd say they're receptive."
> Then he turns to Catherine, "Catherine, how about you attend some of Bruce's staff meetings?"
> Catherine is startled and immediately replies with a high pitch, "No. Nancy will eat me alive." She is referring to a woman in the client group who repeatedly complains about the purchasing people.
> "How about I rephrase it," says Ralph, "I want us to go to Bruce's staff meeting."
> "Okay -- then I will go," Catherine says, reluctantly.
> "You and Danielle can alternate going there. One of the most effective ways is to attend customer's staff meeting, to set our presence."
> Catherine and Danielle exchange looks with each other, and quietly write that down on their notepads.

The following week, the same topic is brought up.

> Catherine reports, "The staff meeting, Nancy DOESN'T want us to go. They don't want us there. She said 'no, you're not coming.' She does the scheduling."
> Todd murmurs, "That's an interesting word."

Daniel nods.

"I'd go to Bruce," says Ralph.

"I emailed Bruce, no response," says Danielle.

Both Ralph and Todd are surprised now.

"Bruce's got no reason to say no," says Todd.

"I can see if they want to talk about personnel issues, I can see why they don't want us to be there. But if they talk about projects, it's good for us to be there. Have you tried to attend before?" asks Ralph.

Daniel answers, "Several meetings over 10 years, not much."

"On special invitation? No open invitation?"

Daniel nods.

Ralph says, "I got an email from Bruce the other day. He has some invoice problems and wants us to send mail to 'all our service vendors.' I haven't replied for a few days. I don't have the resource to manually send 200 mails. I will talk to Bruce. I could talk to [Bruce's boss]. But I don't want to go over his head. Maybe I will use this email. If you can let us know, we could be more responsive."

Ralph thinks for a few seconds and talks to the whole group, "Nancy is just one individual. We need to keep pushing. There seems to be so much barrier between WE and THEY. We've got to break down the barrier."

"There's barbecue on Thursday [i.e. client department's annual event]." Ralph moves on to another topic, "I can't go. I've got to do some networking." But he wants the other three members to attend the barbecue.

Illustrated by this episode in a weekly staff meeting is a struggle to penetrate the relational barrier with the clients. Purchasers and their internal clients do not report to the same person. Structurally, they belong to different parts of the company. From the internal clients' perspective, purchasers are not part of "them." Adding them to staff meetings is like placing a stranger into the established group. Clients resist allowing the purchasers to get too close and penetrate their groups. They keep the purchasers at a distance. Therefore, purchasers' efforts to approach the internal clients often meet with rejection. Rejection can come in various forms: polite exclusion for Kim, restricted invitations for Ralph, and a blunt no for Catherine.

There are nonetheless a few cases of success and perhaps it is this partial reinforcement that keeps the purchasers' campaign going. For instance, Madeline has

been able to earn herself regular membership in a resource utilization subcommittee of her client group. Yet, to achieve such success, purchasers must deal with rejections. For Catherine and many others, rejection is "overwhelming and scary." For managers like Ralph, they need to come up with winning strategies as well as continuing to encourage and push their people to try and try again.

Being Assertive

The second dimension of the relational management is a balance between assertion and tolerance. Since clients typically resist purchasers' change initiatives, it is up to the purchasers to pick the worthy fights. In a purchasing staff meeting those attending go around the table to update their projects. The manager running the meeting challenges his staff to stand up to their clients. Jason reports a project where the internal client has already identified a supplier he wants to use.

> "What if we bid?" asks the manager.
> "We'll have two other vendors, who we don't want to work with," replies the
> purchaser, Jason.
> "But we know the market." The manager insists.
> "Peter [the internal client] knows the market." Jason rebuts.
> "Are you going to sign your name on the basis of that? You want me to sign my
> name? Peter may convince you, but may not convince Fred [purchasing
> upper manager]." The manager raises his voice suddenly.
> Everyone at the meeting is stunned at the seriousness of the words.
> Then the manager calms down. "We'll be challenged more to have comparative
> information."
> Jason's ears and face are getting red.
> "That's our area of expertise." The manager continues, "You [i.e. internal
> client] sign the requisition. We sign the contract. Our name is on the
> contract, the legal document. You want our name on it? How? You let us
> participate in the decision. We need to challenge the direction."
> Jason nods, while everyone else keeps quiet.

This project is a representative example of late involvement. Peter, the client, has identified a supplier based on his past experience and hands it to Jason to negotiate the

rates and finish the paperwork. The manager is not satisfied with Jason's passive acceptance of a client-molded role without the slightest fight. Being assertive does not mean forcing an idea on the clients. It means repeated attempts to propose alternative practices and to persuade clients. He urges Jason to stand up for himself and try to convince the client to do a more comprehensive selection, one in line with purchasing standards and ideals.

Purchasers realize that if they had a clear company rule and policy that backs up their position, they would have an easier time standing their ground. This is something that the purchasers talk about eagerly. During the time of my observation, two policies were being formulated -- one with a particular internal client department, and the other at the corporate level. Both policies started out with strong terms. This was received enthusiastically by purchasers. One man spoke of the corporate policy,

> The policy is in its 6th, or 7th draft. Every time it's getting stronger. The first draft was "purchasing recommends" "whenever possible". David [A senior VP] said there's no teeth in it. Now it's "thou shalt."

The possibility of an iron-fist rule is appealing to purchasers, particularly those tired of ongoing negotiations with the clients. The prospect of having a written document to fall back on brings comfort even though they often say they do not like bureaucracy. One man tells me about his prior company ridden with rules:

> I worked at Delta [a pharmaceutical company] before. They're huge. It is very bureaucratic. They have ten forms for everything. Formality does not help transaction, does not earn you respect. It's like the rules of English. You can't do this. Commerce is not about rules, but relationships.

Then, reversing his position, he goes on to complain about his own clients at BioCo:

> When I send a requisition to be signed, it sits for three days at someone's office. You call and he says, oh, it's sitting here. Can you get to it soon?

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I will get to it when I get to it. One requisition may need many signatures. Sometimes it's just a person upstairs. I can't say anything.

There needs to be a rule that says they should sign things as soon as possible, within three or five business days. If you need to take longer, you can designate someone. If there's a rule, I can say something to the people.

Within minutes, he shifts from objecting to formal rules to suggesting one. This perhaps reflects his frustration of not being able to assert himself with clients and a hope that formal rules might help him in his quest.

As the policy drafts went through more discussions among upper management, they evolved. BioCo's renowned distaste for too many rules began to manifest itself. The department policy was softened in wording. And the senior management eventually rejected issuing a corporate policy.

Meanwhile, purchasers take advantage of small opportunities to exercise their control. Several of them are developing a survey for the client group about purchasing service. One of the questions asks respondents for their opinion on competitive bidding. One manager suggests eliminating this question. His co-worker relays his reasoning, "He says, don't ask them. He's sick of asking them. You develop a process and they [i.e. the clients] will do it." The survey question, in itself, is minor but it implies that competitive bidding is optional. Omitting it denies clients the opportunity to object to it. Another purchaser also explains how she uses her ability to block a transaction to get clients do what she wants,

They [i.e. internal clients] don't like to learn. For requisitions, they don't have any backup document. I tell them you need to provide the backup. [Mimicking the internal clients] "I don't need to." You will have to or I won't process your requisition.

Purchasers try to communicate to and convince clients of the rationality and wisdom of their ways of doing things. They propose alternative practices when clients initiate projects in what purchasers regard as the old fashioned way. They strive to establish rules and gain more institutional backing for their position. And, in the absence of rules many individual purchasers use their ability to slow down or block a transaction to coerce clients away from old practices.

... But Exercising Restraint

Making clients change their practices must be done with sensitivity. Too much of an iron fist and coercion would alienate the clients further and drive them deeply into resistance. Therefore, while purchasers try to be assertive about their ideas, they do so with moderation. There are several forms of self-restraint. First, they often refrain from taking credit for ideas even when it is well deserved. One purchaser talks about his project,

> [A client group] has worked with [a particular vendor] for 15 years.
> They don't want to change. I ask them, what do you like to have? Is
> there any question you want to put on the bid? We will do research for
> you. What do you want to see? You tell us what you need. What will
> make you happy? You know, you have to help them to come to an idea.
> I don't care if it's my idea. If they think it's their idea, that's fine, as
> long as they're doing it.

The second form of restraint is "letting the clients drive the decision making process." Purchasers provide information, assessments, and recommendations. But how they are used is up to the internal clients. When working on a project or talking with suppliers, purchasers repeatedly make statements such as "I'm not going to decide," or "We get information to the scientists to make decisions." In the face of potential

decision-making conflicts, purchasers usually take a back seat. One evening, a purchaser

hangs up the phone and tells me about the internal client who was just on the phone,

> She wants to be the captain. I've had power struggle with her in the past.
> She wants to be the boss. She's got it. I had to step back.

Michele makes her observation on this, "Everything is so sensitive here. When I speak

with Peter [her internal client], I always say when YOU make YOUR decision. I don't

say I, or WE." Purchasers, it seems, have learned not to threaten the perception that their

clients have the final authority in making decisions.

The third form of restraint is simply to adapt to the role that the clients demand.

One common role clients want purchasers to play is "crisis relief." This occurs when

clients have finished the selecting and contracting phase of a project on their own, but

tough issues emerge in the managing phase of a project. As a purchaser says: "They like

to have you especially when the relationship [with the supplier] goes sour and things are

not working. [They ask us] What do we do?" Purchasers are often asked to take on the

role of a chronic troubleshooter. As a purchaser observes, "That's a good project. Gees, it

worked well. It was a touchy project. Now that group tells me they have some other pains

in the neck to give to purchasing." Purchasers readily accept these "pains in the neck" as

a way to involve themselves with clients.

Taking on a client-demanded role is done with the understanding that it is a

temporary measure to access the clients instead of a permanent settlement. Purchasers

take every opportunity to convince clients that these troubles – "pains in the neck" - can

be avoided if they consult purchasers early. In the long run, they hope to establish their

ideal identity vis-à-vis their internal clients.

Judy, a scientist, provides an example here. She recalls her first project with Keith, a purchaser. She wanted to buy a piece of equipment worth over a hundred thousand dollars. But the vendor she chose would not agree with the terms and conditions. Discussion went back and forth. In the meanwhile, she found another company and bought the equipment from them. This infuriated the original vendor. "Constantly, they are calling. Why did this happen? What vendor did you go with? Bla bla bla. I basically said you know what, I don't want to talk to them." She went to Keith, and he "just handled it all." Keith's efforts have paid off. After he solved a few "stinky situations" for Judy, she decided that Keith and his colleagues "are a great group of people. They never mind helping out." She and her lab gradually "developed respect" for Keith's group and now consult them often and early.

The three types of self restraint are undesirable (but unavoidable) for purchasers. They need to give up credit, yield decision authority, and temporarily take on roles deviant from their ideal role. But they realize that these restraints are necessary because they soften their assertive edges and make purchasers less threatening to clients. These are strategies to accumulate goodwill, win trust, build a basis for reciprocity, all of which may help to establish the espoused expert identity they desire.

A Love and Hate Relationship

As noted, to establish a set of practices that support purchasers' self-claimed expert identity, they use several measures to win the clients over. The strategies are

balanced. Purchasers try to get integrated into the client teams but face frequent rejections. They assert their opinions but usually have to surrender to client demands.

A love-and-hate relationship exists between purchasers and their clients. While they compete for influence in outsourcing decisions, purchasers must depend on clients to enact with them the status they desire and to validate their social position in the company. This dependence is manifested in three ways. The first is that internal clients can treat purchasers as experts or not by the way they carry out their projects. I have already discussed this advantage.

The second manifestation is that internal clients are the anchor points for purchasers to fit in the corporate landscape. As service providers, purchasers' contribution to BioCo is contingent on their assistance to the internal clients. Without service recipients, they would have no ground for existence in the firm. A purchaser positions himself this way,

> I service the project managers. Jack Hancock [the plant manager] is their customer. The manufacturing people are Jack Hancock's customer. The people who use the products [made by manufacturing people] are BioCo's customers. It's a chain of service. And I'm at the bottom of that chain.

The link with internal clients is critical to connect purchasers to corporate objectives. An illustration of purchasers' dependence on interactions with the clients for identity is the organizational chart exercise I have done with them. For the exercise, I asked purchasers to "draw an org chart for the entire corporation as they understand it."[18] As they draw, they qualify their charts:

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[18] I typically included this exercise in the interviews with purchasers with whom I already established a working relationship and whom I was interviewing for a second or third time. I asked them to help me understand the corporate landscape. The request for them to draw something on paper made them cautious, so my relationship with them helped to overcome this hesitation.

Facilities is my world. I don't know much beyond that.
***

I don't have a lot of time to do that [get a big picture of the company]. I talk to Kate [internal client], then I ask her who do you report to.
***

I only know my clients. I'm not sure that I'm the best to give you the right information.

I collected five charts. Each is distinctive, yet there is one thing in common – a detailed knowledge of their client groups and ignorance of the other parts of the company. Here are two example charts (see Figure 7 and 8):

Figure 7: Gordon's Org Chart
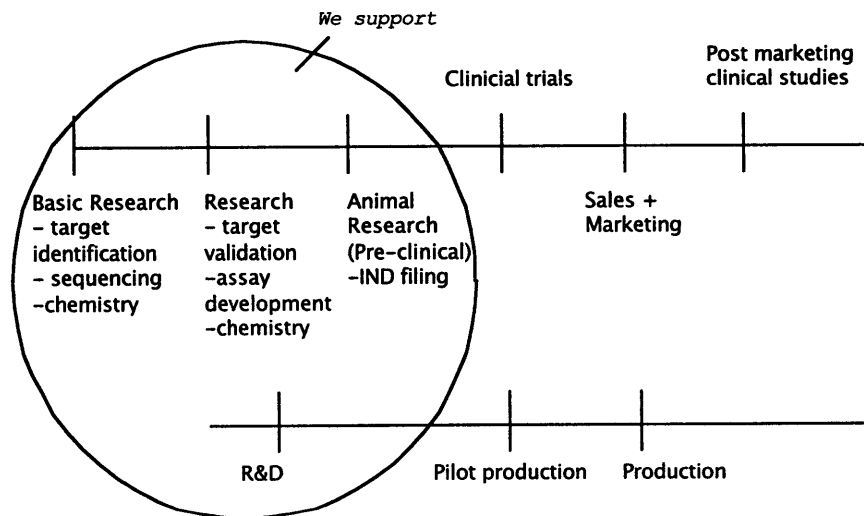
Gordon conceptualizes the company along the product pipeline. This perhaps reflects his science background. He goes into details about the breakdown of his client groups. For the rest of the corporation, he admits having little knowledge of how they are organized.

Figure 8: Paul's Org Chart
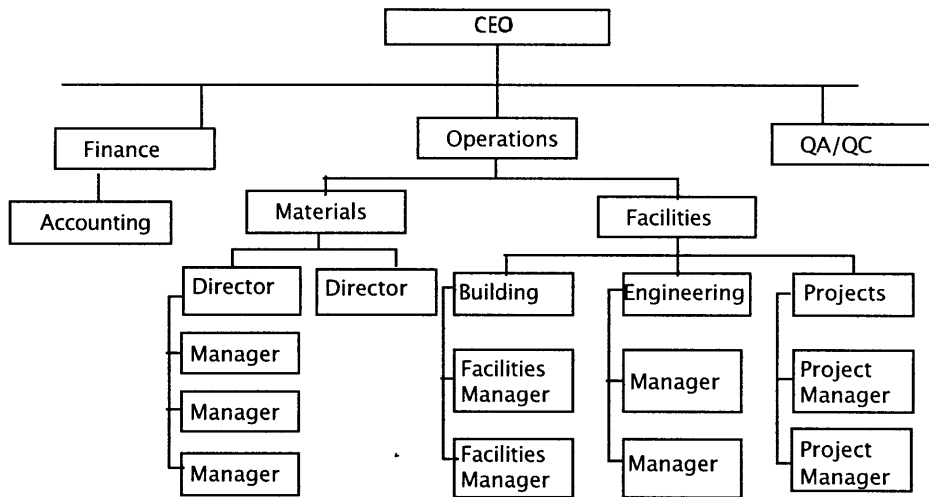
Though different in style, this chart elaborates on the facilities client group. And

Paul tells me that he "does not know much beyond that."

This exercise is not to show whether or not their perceptions are accurate.

Instead, it reveals how important client groups are to purchasers for their conceptual

orientation to BioCo. The way they relate to the corporation is through their association

with internal clients. They understand where the clients are positioned in the company

and what the clients' roles are, and purchasers anchor themselves around that.

The third manifestation of their dependence on clients is that important

business information is passed on to them through clients. Purchasers learn about

diseases, patients, and issues in the core business areas from their clients. A

purchaser explains to me what he has learned from his clients:

> I work with senior product managers who do market research, medical
> writing, publication planning, KOL (key opinion leader), e-learning.
> KOL is doctors or people established in the field who will help to
> increase awareness of the disease and the drug. [Drug X] is probably the
> most exciting thing happening in the company right now. They're filing
> for FDA approval next year. You know drug X? It's for Y disease. It's a

terrible disease that kills babies. Doctors didn't know much about this
disease. It was only through autopsy that they found that there were
some patterns among these babies. Now through key opinion leaders,
doctors are more aware of it, and there's more diagnosis.

If it were not for working with product managers, he would not have learned about the

drug or the disease. These kinds of information are abundant in client staff meetings and

are picked up by purchasers when they attend them. For this reason, Jesse says she likes

meetings.

I like meetings [she chuckles], sitting there. Then you know the project.
Like the STUDY meeting that I go to [a bi-weekly meeting on a trial
project], I know what's going on. I know how many patients are
enrolled, what the sites are doing. I don't love science, but I like to know
the background information.

The need for anchoring and access to information makes purchasers dependent on

their internal clients. This dependence leaves purchasers often at the mercy of the clients

for information, for cooperation, and ultimately for the validation of their ideal identity.

The vision that purchasers have of themselves is curtailed by their dependence on internal

clients. They do not have control of their own identity. It is this dynamic that leads to

both the ambition and moderation in their relational strategies to create the identity they

espouse.

Conclusion

Purchasers face a type of identity challenge different from that of scientists. They

think of themselves in an expert professional capacity but that view is not supported in

their interactions with by internal clients. Support is critical to the validity of purchasers'

espoused identity because purchasers depend on clients for their existence. For their ideal identity to be accepted, changing clients' perception and practice is a must.

Some of them use interpretive strategies to reframe the relationship. More specifically, they develop idealized images to describe themselves and their clients. One popular and powerful image is that of a tolerant parent and educator. A young man in his 30s puts his internal client meetings in the calendar as "Pamper the babe meeting." One newly hired woman uses the phrase "pampering the clients" to refer to her activities with the clients. Another young woman, stressed about her work and client demands, thinks of the relationship as "teaching the dog new tricks." In these metaphorical images, the purchasers occupy the role of a parent or trainer. They are more knowledgeable and powerful. The clients are like babies and pets who are ignorant, learn slowly, yet keep making silly demands. These metaphors enable purchasers to think of themselves as providing a favor instead of giving up power.

Purchasers also utilize presentational strategies to project themselves as trustworthy, understanding, knowledgeable professionals. They try to voice their opinions at meetings, employing jargon that clients use to show that they have subject matter knowledge. They maintain a "friendly front" with the clients even though they may complain about the same person after hanging up the phone or returning to their offices.

But the primary response purchasers use, however, is a relational approach intended to shift interaction patterns. They create conditions that help them to integrate into the client team by increasing geographic proximity and background commonality. They propose alternative project solutions, try to set up formal rules to gain top management support, and demand the clients change behaviors when possible. These

efforts are met with resistance from clients who prefer to keep purchasers at a distance and utilize them in ways they see fit. By occasionally asserting themselves and sometimes yielding to client needs, purchasers gradually communicate their point of view to clients, in each meeting, through every project. Many clients have been won over in this fashion. But it is a continuing struggle. Employees turn over. Client team composition changes with each new project. The same clients have different needs as projects change. And purchasers need to constantly work at establishing and maintaining the relationships that enable them to claim an expert identity.

The struggle that purchasers experience with their internal clients and their effort to reshape the relationship are not unique to this particular group. There are many other types of service providers at BioCo. A data management person in the clinical research department describes her job as "a service provider to the clinical people. We do the data." There are service groups within the science department running analysis and making proteins for other groups. Their specific tasks differ a great deal but they all talk about themselves as jugglers balancing what clients want and what they would like to do. But, as argued, there is much tension in these situations. The dependence and the lack of respectful cooperation from clients is a common struggle. As a lab support person mentions casually at the end of a meeting: "We are service. We are not servants."

CHAPTER 5: Mobility On The Margin: Presentational Approaches At Work

On a winter afternoon before the beginning of a regular software training session, only a couple of scientists have arrived at the seminar. One of them is reminiscing with a trainer. Both of them have been at BioCo for almost ten years. They are trying to remember earlier efforts to make an online employee facebook. Separate attempts have failed in both departments.

Trainer:	*I think it all has to with the privacy thing.*
Scientist:	*Yah, because you never know who is going to hack into the system, or who is going to take that information off.*
Trainer:	*And you don't know how many people who are not actually BioCo employees that are out there, that are within our sites, and stuff like that.*

* * * * * *

On a summer early afternoon, a group of middle managers are crowded around the conference table to discuss warehouse controls. The discussion goes off on a tangent.

One man suddenly asks about cleaners, "The new cleaners, there is something in the contract mentioning screening the employees, right?"

"It's not just the cleaners, what about, say, consultants? They go to places they shouldn't go. Do we know where they go?"

"Securities [department] is supposed to monitor that, BUT ... [they may not be doing it]"

"We don't do background checks on independent contractors. They just fill out a form. It says I will not do this and that. BUT..." She shrugs her shoulders.

"I'm surprised that even in the production area, how people have access to those areas."

The subjects in these spontaneous conversations are people who do not belong to any "traditional" category of a BioCo employee. Their presence and growing prevalence at BioCo[19] strikes the old-timers as odd. They are mixing every day with the "regular"

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[19] The HR system at BioCo only keeps records of permanent employees. Thus no numbers are available for contractors. The fact that the number of contractors and their compensations are not within the recordkeeping of regular BioCo system shows that the company views them as marginal and disposable. In the purchasing department, 11 out of 33 purchasers were hired as contractors (33%). 5 of those 11 became permanent employees later (45%).

employees in the buildings, hallways, cafeteria, and offices. There is a wide variety of them – cleaners, business consultants, office workers, security guards, landscapers, and so on. And they seem to have access to secured work areas. The speakers in the quotes, all of whom are "regular" employees, are disturbed by the growing presence of "non-employees." What to make of them? Can they trust them? Control them?

Indeed, non-employees have been growing in number and variety. Locally, they are referred to as "temps," "contractors," "consultants," "interns," or "onsite reps."[20] They vary in the frequency, length, location in the firm, and terms of their work arrangements. Some of them, such as repair workers or technology service reps, are called to BioCo whenever needed. Some, such as landscapers, come two or three days a week. Some, guards and cleaners for instance, come to work every day but on their own schedules. Still others, like the office workers, follow the same daily schedule as the regular employees. Moreover, their employment length at BioCo differs. Some stay for a short period, from a few hours or days to months. Others stay for years. They cover a wide spectrum of jobs. Some do "dirty jobs" such as cleaning. Some do boring tasks like copying, typing, and filing. Others do more skilled work such as training, data analysis, and project coordination. In terms of employment, some are officially employees of other companies and are supervised by their own non-BioCo bosses. Others are loosely organized by a placement agency that provides a paycheck but not an employment home and no supervision.

These contingent workers are the focus of this chapter. Their increasing presence is not a unique phenomenon at BioCo but a reflection of the current trend towards what

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[20] For simplicity purposes, I will use "contractor" to refer to various contingent workers unless I quote the native terms used by the informants. I use "regular employee" to refer to a person hired by BioCo in a non-contingent fashion, also referred to as "permanent employee" by some informants.

we often call "lean" and "flexible" organizations (Barley & Kunda, 2004; Osterman, 1999; Smith, 1997). I will mostly discuss two types of contingent workers: "individual contractors" and "corporate contractors." Individual contractors usually work in offices and labs to staff particular projects. BioCo managers decide on their selection and termination. But the employment paperwork goes through a placement agency (pseudonym PeopleService). All three parties – BioCo, the individual contractor employee, and PeopleService – need to agree on the pay rate. PeopleService takes a percentage commission as a fee. This is a widespread arrangement in many industries, called "vendor on premise" (Smith & Neuwirth, 2008). Corporate contractors are employees of other companies with which BioCo outsources certain services. BioCo pays a lump sum to the outsourced company for service and the company in turn decides the workers' wage. The outsourced companies manage staffing decisions, occasionally in consultation with BioCo.

This chapter will first describe the identity challenge confronting contractors. They live on the periphery of the BioCo social system, constituting what Kunda (1992) calls an "extra culture." They work at BioCo but are not accepted as full members. Socially, they are on the border between being an insider and an outsider. This unusual position places workers in an unstable, liminal state from the day they start at BioCo and throughout their daily work experience. They rely heavily on a presentational approach to manage their identity challenge. I show how contractors negotiate with managers about when to pass as regulars and when not to pass. Finally, I discuss the final escape from liminality as contractors "turn permanent."

Identity Challenge: Experiencing Liminality

The non-traditional employment arrangement places contractors in a special social situation. They are neither full members nor complete outsiders. This "liminal" state is ambiguous and troublesome. Turner (1969: 95, 125) suggests that those in liminal states, "are neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremony." They "elude or slip through the network of classifications that normally locate positions in cultural space, [...] fall in the interstices of social structure, are on its margins, or occupy its lowest rungs." The liminal position of contractors is reflected in the disagreement over what term should be used to label them. Terms such as "temps," "consultants," "PeopleService person," and "contracting employees" carry quite different status meanings. Some contractors resist being called "temps" but refer to themselves as "consultants." They say that temps are low-skilled inexperienced people and consultants are more experienced and independent. A "PeopleService person" is an undesirable term because it highlights the non-BioCo affiliation. "Contracting employee" is more often used by regulars but less by contractors themselves.

Liminal people are often stigmatized by others and their social interactions with the so-called "normals" is, in Goffman's (1963) phrase, a "mixed contact." The co-presence of the stigmatized and the normal in the same social situation constitutes moments during which identities are contested, defended, and modified. I will use contractors' mixed contacts with regular employees to illustrate their experience of liminality: being in but not fully in, being out but not fully out.

Initial Contact

The first moment of demarcation occurs on the morning of orientation.[21] A group

of new people wait quietly in the lobby. There is little chatting among the strangers and

they have no idea what department or position the person sitting next to them is headed.

At 8:50, an orientation organizer shows up. Everyone picks up their bags, stands up,

ready to proceed. She makes an announcement: "If you are here for the full-time

employee orientation, come with me. If you are on an assignment with PeopleService,

stay here. Someone will come to take you." Some who have just stood up sit back down.

One young fellow approaches the organizer unsure about what group he belongs to and is

told to stay in the lobby. The contractors then are left sitting and standing while some

new regular employees follow the organizer through the security gate. Ironically, those

who are left behind are considered by other contractors to be the "lucky ones." The

unlucky ones are mistakenly taken to the BioCo orientation, find out they are in the

wrong place, and are then taken back downstairs. Ashley was one of the "unlucky ones."

She says that the incident embarrassed her,

> PeopleService hires you instead of a HR person from BioCo. You almost feel like
> you're second rate. You are not good enough. You need an extra help to get your
> foot into this door. Your resume alone wasn't good enough for BioCo to hire you
> on their own. You need a recruiter to campaign for you.

When I asked these workers to tell me about their orientation they reply, "it's too

boring to remember." I was told that they do not have the same 30-40 minute headquarter

tour that regular employees receive on their orientation morning. After finishing some

paperwork, they get their pictures taken and receive a badge. The badge looks almost the

same as a regular employee's ID, except there are additional red lines around their photo

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[21] Only individual contractors through PeopleService receive the orientation described here.

and the name of the employment agency is printed on the badge below their names. In the afternoon, they join the new full-time employees for a lecture on safety. After two hours of trying to stay awake, they are sent out to assume their positions.

A separate orientation and the conspicuous red on their badges mark contractors' difference. Other aspects of the initial contact, such as the merged safety training, signal their similarity to the regular employees. The contradictory signs continue as contractors start their work.

Early Days

Another moment of symbolic import in the early experience of a contractor at BioCo is their introduction to others in the department. Introductions vary from person to person and from group to group. In some places, they are publicly called "temps." For example, a lab associate recalls her days as a temp, "I had no title. I was just called temp." When asked if people like to be called temps, she laughs, "People don't like being called temp. Everybody knows you're a temp. On your badge, there is a red circle around your name or your picture. Everyone knows." Now she is a regular employee and has a temp in her lab. She says she always introduces him as "This is Peter. He's our temp while Cathy is out." She acknowledges never giving much thought to how she introduces Peter:

> That's the way it is. I don't know how he feels. I don't mean anything negative by saying that. That was how I was introduced. That's the way it is. There's no [defined] role [for a temp]. It's hard.

The introduction is less stark in offices. Managers usually introduce contractors by their name and the person they report to, such as "This is Peter. He works for Jeff Baker."

Office contractors do not have titles. The work role is defined by the manager on "a need basis."

Within the first few days, managers have typically found a physical space for contractors. It is usually a spare desk, or a place in a small conference room. They might have a computer set up for them to use and receive a corporate email account. Some contractors take particular notice of what company announcements they get in the email. Those emails are considered by many employees to be junk and are deleted without even reading. Contractors regard corporate emails rather differently, at least in their early employment experience. One middle-aged contractor tells me during a coffee break why she likes BioCo:

> It's a people-oriented company. The last company I worked for, I was a contractor. They wouldn't give me email. [She had an account, but] if the president sends an email or there was an email about virus watch, I wouldn't get that. [At BioCo] they treat you like an employee even though you're a contractor.

Another contractor in the lab also notices her email access, "I have a BioCo email address. It makes me feel like I have an inside track here. I can read and there's nothing kept from me."

Similarly, contractors treat other matters, what they sometimes call "silly things" as meaningful signs of inclusion or exclusion. For example, a man in the lab finds signs of demarcation from his mailbox and lab coats. He says: "You don't have your own mailbox. You have to use somebody else's. You have no lab coat with your name. The one I got had someone else's name and I had to tape over it."

Regular Days

After the orientation and introduction individual contractors begin their work. They follow similar daily schedules as their co-workers. Managers give them tasks. They report their progress. They start to mingle with co-workers, go to lunch together, get to know one another. The distinction between a contractor and a regular employee seems to almost disappear during the course of a regular work day. From time to time, however, occasions arise to remind them of their temporary status in the company.

Every Friday afternoon is a reminder moment. They need to fill out a timecard, have a manager sign it, and turn it in to the PeopleService representative. Otherwise their paycheck will be delayed. Some reminders are prompted by naïve questions. For instance, one evening a man asks his co-worker why she cannot take the work home rather than staying late in the office. The co-worker replies, "I don't have access to home access." She can use the laptop in the office to access the BioCo intranet system but will not be able to do so at home. "I'm just a temp," she says, "I don't have that access." Both resume working after seconds of silence following her last comment. On another day in another part of the company, Sarah says she is very happy about the company's new 401(K) announcement. She calls it the best plan she has seen in her 10-year career. While waiting outside a conference room, she excitedly asks Jeff and Berry, "Have you seen the 401(K) announcement?" "I'm a temp. I don't have stocks," answers Jeff. Silence follows.

Sometimes both individual and corporate contractors are reminded of their outsider status when they unknowingly cross a line, such as when they try to get into the building after hours. Their contractor badge only works between 7am and 6pm. Regular

employees can enter the office at any time but contractors are locked out after hours.

Consider the following episode:

> It was almost 7am, still dark outside. Two workers in jeans and dirty boots walked into the lobby. They flashed their badges in front of the detector, but it did not work. They returned to the reception desk and put the badges on the table. The red lines indicate that they are temporary workers from a construction company. A young guard said to them, "It's not seven yet. You're supposed to come after seven." The older guard searched on the computer and confirmed their names. The clock on the wall was two minutes past seven. He asked the men to try it again. Still not working. Beep, beep, red light. The two men were Asian and Hispanic. They were a little embarrassed and didn't talk much. "Are you dying to get to work?" the young guard made fun of them. They smiled. The guard opened the door with his badge, "This one is on me." They went inside. "They love the job, don't they?" the young guard commented to an old guard when pouring some sugar into his coffee. [from fieldnotes]

Lockouts like this are not serious and the guards are usually helpful. Nonetheless this moment reminds contractors they are different.

Special Days

The individual contractors, working side by side the regular employees, are singled out on certain special occasions. One day, several floors in the office building are extraordinarily quiet because there is a departmental offsite meeting. Among clusters of empty offices and cubicles are scattered people busy working. When I ask them why they are not at the meeting, one of them says, "I'm a contractor." The people left behind say that they would have liked to attend the off-site. Similarly, in the labs there are meetings that are closed to contractors. A temp says: "While everyone was welcoming to us, we are not allowed to certain meetings. It's like you're wearing a T (for temp) on your back. You are not an employee."

The year-end holiday season is another time for these "reminder moments" to occur. For regular employees, it is a popular period for taking vacations. Contractors live in a different world. A contractor with a master's degree says about her regular employee friend: "Carolyn gets a holiday for Christmas. I don't. If I don't come to work, I don't get paid." Many contractors report "feeling different" about holidays than they used to when working elsewhere as a regular employee. Holidays are still enjoyable but they come at a cost. A middle-aged contractor with two children says that if he were allowed, he would rather work on Thanksgiving because he needs the money.

Each year, BioCo organizes a Christmas party at an upscale location. Women wear designer dresses and men come in tuxedos or suits. It is an occasion where both top managers and lower level employees bring their families to socialize. Weeks before the party, many people are excited about the occasion. Among them are four friends in their 20s, three of whom are contractors. The company has sent out a nicely printed invitation card to all regular employees with an option to bring a guest. Invitations are not sent to contractors. But somehow, one of the three contractors has received one. Charlie, who discovered an invitation on his desk a week before, takes this as a welcome sign of inclusion,

> Since I got here, in this position that I'm in now, I've been treated as well or better than some of the full time employees. I think it's part of the department I'm working in. It's really a good department. I've worked as a temp at other companies. They definitely treat their temps differently. For example, the last company I worked for, when there was an event, they would make sure that it was clearly stated that temps were not invited. They have a table set up in the cafeteria to register for corporate events. They either say it, or they have a sign that says temps not invited. They are very blatant about it at that company.

> Here, at least in my department, I'm just one of THEM. There's no difference. For example, the Christmas party that BioCo has, they don't state it, but they don't invite temps. I got an invitation. I don't know where it came from. I don't

know why I have it. But I had one sitting on my desk when I got back one day. So I'm pretty sure it was somebody in my department. That would never happen in my last company. It's nice to see that they're treating me as one of their own.

Charlie happily attended the party with his appropriately well-dressed girlfriend. One of his other two friends was upset, "Charlie got a paper invitation. He's not supposed to get one. I don't know why he got one. I'm [going as] Diana's [i.e. the only employee in this group of friends] date." Getting an invitation may seem trivial, but in the eyes of contractors it is a big deal, a privilege, a sign that indicates one's status. It was a particularly meaningful sign for Charlie because he was seeking a permanent position in the department.

"Mixed contacts" can thus be reaffirming or disconfirming as to whether or not the contractor believes he or she is regarded by others as "one of them." Daily interactions throughout the assignment period oscillate between exclusion and inclusion. This reflects the liminal state contractors are in - neither insiders nor outsiders. The indeterminate condition poses challenges to contractors. They cherish being treated as regulars and are particularly conscious of slights, big or small.

Managing Liminality

Contractors of all types are difficult to fit into the standard BioCo social structure. They often present themselves and are treated by others as regular employees. On occasion, however, they purposefully distinguish themselves to show that they know their place. Both these situations are worth examining closely.

Passing

A common way people deal with their stigma is to control the social information associated with the stigma. Goffman (1963) calls this "passing." It is a social game of how much personal information one discloses to others. Goffman argues that passing is of most interest when the person has some control over disclosure. Among contractors, both individual and corporate, passing is widely practiced. There are three ways of passing that I have observed: managing "props," talking like a regular, and working like a regular.

The first way of passing is to manage "props," (Goffman, 1959), physical materials that convey one's identity. As I have explained, everyone on the BioCo premises is required to wear badges at all times and contractors' badges look different from the regular ones. People usually clip their badges at the waist. Contractors know that when they wear the badge everyone can see the red lines and therefore know their status. But, there are ways to hide it. Flipping the badge around is an easy measure. With the back facing front, others cannot see the red lines. Another way is to cover the badge with one's clothing. With the badge hanging obscured by the corner of a blouse or coat, others may not see the prints on it clearly. Contractors also use other objects to heighten their BioCo affiliation and thus "pass." Regular employees are given a business bag with the company logo during their orientation. This of course is not available to contractors. However, they can collect other BioCo artifacts. A cleaner supervisor always wears a hat on the front of which is embroidered "BioCo Team," a souvenir given out at a BioCo celebration. Some decorate their desks with BioCo mugs, envelope openers, squeeze

balls, posters, and other BioCo ornaments. Some contractors make copies of newspaper or magazine articles about certain BioCo events and post them in their cubicles.

The second passing behavior is talking like a regular, using subtle language cues to give the impression of being a BioCo person. The use of "we" and "us" is especially prominent in this regard. To wit, a guard showed me an exhibition cabinet of shiny BioCo trophies. He explained,

> They're awards. You may call them trophies. I call them awards. Award trophy. I think of trophy as something from a competition. These are not from competition. They're awards recognizing *us* for doing something great. [smile].

When answering phone calls, contractors talk in the same way as regular employees, "Hello, this is John Doe at BioCo." A few contractors tell me that they like to receive phone calls because the caller has no idea of their contractor status. Calls from outside the company are more desirable than those from inside since the status distinction is invisible if not irrelevant to outsiders. To them, contractors are just like any other BioCo employee.

During a break, a 26-year-old contractor comments to her contractor colleague about the unexpected respect she gets from outsiders. She has called a company and left a message regarding a prospective project and receives a return call almost immediately: "He [i.e. the person from the other company] literally called back within a minute and he said sorry! I asked him what's your title. He said I'm the CEO. He thanked me, like I'm a 50-year-old. I was thinking, if you see me you wouldn't thank me." She laughs and can hardly hide her excitement. She asks her co-worker if this level of responsiveness is normal. "I like calling people on the phone," her colleague, an old-timer contractor, answers, "They usually are pretty responsive. They want to work for BioCo."

When dealing with outsiders, contractors are told to show the same level of professionalism they would be expected to display if they were permanents since they represent BioCo. A group of regular employees and several contractors gather around the lunch table outraged at a new contractor. The young fellow called a physician participating in a clinical trial and asked her to sign and fax some documents immediately. The doctor later sent a long email to the group manager complaining "how rude the fellow was and how could someone like this work for BioCo." This young contractor's inappropriate manner is severely criticized by his co-workers, regular employees and fellow contractors alike.

The third passing practice is to work like a regular employee. This includes working extra hours without extra pay and trying to avoid small mistakes at work. Regardless of position, skill level, or pay rate, individual contractors are paid by the hour. As noted earlier, they submit a time card each Friday. If they work overtime, they get 1.5 times the regular wage. In contrast, most regular employees receive a monthly salary without overtime pay (although they almost always work more than 40 hours a week). To show that they are not in it "just for the money," many contractors imitate the time arrangements of the regular employees. Many work over 40 hours but do not report it. For example, one new contractor says that she works about 42 hours a week but chooses not to report her overtime. Her explanation: "When you are on a learning curve, you have to put yourself aside." Another contractor says that she has been told that she can leave after eight hours but she says she still stays another 30 minutes. Those "stingy" about their work time are regarded by fellow contractors as not pulling their weight.

Not only do contractors put in a few extra hours for a good impression, they also pay particular attention to details. As a lab contractor says, "the contract thing just really makes you want to work hard to make a good impression" because it is as if "every little thing that could potentially go wrong has that consequence of losing the job." Even though individual contractors have an assignment period (typically for three or six months), BioCo can terminate the contract with a 24-hour notice. The procedure is rather easy: Managers inform PeopleService of the decision and PeopleService tells the contractor not to come to work that day or the next day. No elaborate reason is required in writing. The easy termination keeps contractors on their toes, trying to do their best. A contractor who is brought in to cover a person on maternity leave says that she goes out of her way to work hard and impress her colleagues, "not ever letting it up." She remembers a small incident about three months into her six-month contract. Her group was having a meeting in another facility. She went to the wrong building and showed up twenty minutes late. Although this occurred about three years earlier, she still vividly remembers her anxiety,

> I remember walking in with my sunglasses on the top of my head and finding the room in the end. But I was very stressed out that I was giving everyone a very bad impression. It was the first time I was meeting the other half of our group. And so I expressed my apologies for walking in late and double checked with some colleagues who were people I knew. "I'm sorry." I used the word like "waltzed in." Like I hope it didn't look bad. And then they reassured me, "It's OK. Everybody gets lost going into that building."

She acknowledges that the contractor status is "a looming cloud" over her shoulder, making her afraid that if she forgets to order something or does some small thing wrong, she would be let go. Therefore she tries to behave like a "responsible" employee attending to every detail.

Contractors strive to look, sound, and act in the same manner as their regular colleagues. People from outside BioCo usually cannot tell the difference. Sometimes even BioCo people are surprised to find out that the person with whom they have just interacted is a contractor.

When Not to Pass

Passing eases the identity challenges. But contractors do not want to pass in all situations. When it is unclear whether a privilege is exclusive to regulars, contractors err on the side of caution and distinguish themselves as outsiders. They do not want to be seen as taking advantage of things not granted to them.

The use of physical indicators to distinguish oneself is relatively rare. Contractors mostly learn to govern their own behavior so that they will not be perceived as "crossing the line." One example of not passing happens in the purchasing department and involves the ordering of supplies. In the BioCo online ordering system, contractors, like regular employees, have accounts and can order office supplies by following the same procedure as other employees. However, a temp of several months tells me: "I can order but I don't because I'm a temp." She has legitimate reasons to get office supplies. No one has told her that she cannot place orders necessary for her work and the official system allows her to do so. Yet, she chooses not to because ordering does not seem to her "like something a temp should do." Instead, she asks her employee co-worker order the supplies for her.

Most no-passing happens in situations where there is no explicit exclusion or inclusion of contractors. The semi-annual benefits and health fairs are an example. At

these fairs, booths are set up in a large area to offer information on various issues. People can learn about crisis assistance, transportation options, and voluntary programs at the Benefits Fair. At the Health Fair, they can learn about stress management, cancer detection, and diabetes treatment. They can also test their blood pressure, cholesterol level, and bone density. Attendees of the fairs often leave with small souvenirs from the booth vendors, such as toothbrushes, mouse pads, stress relief balls, and so on. At some companies, I was told, these events are exclusive to regular employees. But no announcement like this is made at BioCo. Corporate emails advertising the fairs also reach contractors. Though the fairs are open and no ID is checked, some contractors (particularly newly joined) choose not to go, they say, because they do not feel entitled to these perks. Another illustration is joining corporate volunteer programs. BioCo organizes volunteers to read to schoolchildren during lunchtime. The program always welcomes more volunteers. Several contractors tell me they are very interested in the program but hesitate to sign up because they are not employees. One woman, however, immediately signed up for the program the week after she became a permanent employee.

If contractors manage to pass in these otherwise no-passing situations, some express guilt for crossing the line. At an internal science-for-non-scientists seminar, a woman next to me introduces herself. "Actually, I'm temping," she whispers shyly. After almost a year at BioCo, "I'm not even officially – um –" she says with embarrassment implying that she should not be in the seminar. She goes on to say: "I work for Lance and he really wants me to learn. He really encourages this [i.e. coming to the seminar]." The seminar begins and no one checks who is an employee or not.

Some contractors are explicitly reminded by their supervisors not to behave like regular employees but to maintain a certain distance. This applies particularly to corporate contractors. Outsourced companies send their employees to work onsite at BioCo. Boiler watchers are one such group of corporate contractors. They are certified firemen who monitor the boilers (machines that generate steam and power) twenty-four hours a day, seven days a week. Although the watchers come to BioCo for work, they are employed by the company who sells this service to BioCo. Watchers spend all their work time dealing with BioCo equipment and sometimes when they notice things that can be improved they do so. But the BioCo people do not like it. They say changes unknown to them could cause problems to the steam and power system. The watchers' employer also prefers the contractors to work under the specification of the outsourcing contract. If they do anything outside the contract and something goes wrong, the outsourced firm would be held responsible. A supervisor explains to his BioCo customers how he teaches the watchers to limit their initiatives and be careful:

> [I tell them] not to step on other people's toes. We're visitors here. I always tell my guys we're not employees of BioCo. You don't work for BioCo. If people ask you to do something, you do it. Sometimes guys are curious and look around. [I tell them] If you don't know if you should do it, call me.

He reminds the watchers that they are "only guests at BioCo," and should behave as guests. A similar sort of distancing was noted by Barley and Kunda (2004) among contracting software engineers. One of them said: "I'm a guest in somebody's house. There are certain things you don't do as a guest. I'm a long-term guest" (p.213).

Passing and No-passing: A Manager's Perspective

As contractors choose when to attempt passing and when not to, BioCo managers also develop their own criteria as to how to treat contractors. Some managers are clear that certain meetings where confidential information is shared are not open to contractors. A scientist heading up a project who himself started out as a contractor explains his criteria,

> We have technical meetings where we talk about procedures and new technologies that we're going to apply. Those usually end up with very general data. Usually it's a particular machine, a new way to do a particular assay that was being done. And contracting employees are more than welcome to come, provide insight, and reap the benefit of the work that's being done in the group. But if it's direct project related, update meetings, or there's going to be a summary of submission to the FDA, then they're definitely excluded. Or meetings where there's going to be a presentation or coming together of data from a lot of different groups working on a particular project where the future of the company is being discussed, then they're excluded from those types of meetings. I see contracting employees being excluded from meetings, and rightfully so because they are not under the same confidentiality agreement so they don't have the same investment in BioCo as full-time employees do. And they may if they do get turned into full-time employees.

For small group meetings, managers at BioCo have considerable discretion as to whether to invite or bar contractors from attending. Allowing contractors to attend meetings is used as a gesture of inclusion. A scientist talks about how he manages his lab:

> Temps are not allowed to go to confidential group meetings or attend lab meetings. Well, everything is supposedly confidential. But she works in the lab. She needs to know what's going on. So I include her in our small group meeting.

Managers recognize that such signs of exclusion are taken seriously by contractors. So they often try to help contractors pass on some occasions. One incident that demonstrated this effort happened at the end of a contractors' assignment period. As described below, her manager did much work behind the scene so that the contractor could come to work as usual, rather than being locked out.

After several consecutive meetings, the manager returns to his office. He is checking voice mail and his email inbox is full of new messages. "Oh no! Today is Vera's last day for her contract. She is going to be locked out tomorrow. No!" He sees an email from the PeopleService staff asking for an extension form. "Because she's over 90 days, it needs the cost center manager, senior VP, financial controller to sign on it." He stands up to close the office door [because Vera sits around the corner from the office] and immediately calls his boss, leaving a message. Then he calls the cost center manager, again, leaving a message. It is already 5pm. The email was sent at 3:55pm. "I don't want Vera not to be able to come to work tomorrow. What if they won't extend her contract? Then she won't come to work tomorrow. Oh!!" He calls the PeopleService staff. No answer. He calls another manager. "She [i.e. the PeopleService staff] sent it to me at 3:55pm. Last time I got it earlier and there was enough time, and there was no danger of her being locked out. Vera is going to be traumatized." He rushes upstairs to discuss this with another manager.

[The next day] Vera gets into the office without incident. She doesn't know what had happened. Her manager came in around 7am because he's worried that Vera wouldn't be able to come in. He contacted the PeopleService staff, who apologized for the late notice. And that person was able to take care of the access issue but asked for the extension form to be filled out soon. [from fieldnotes]

Managers assist in contractors' passing when they want to construct a normal work day for contractors. They set limits when they believe "confidential" business information is shared. What managers view as "confidential" however, varies widely in the company.

Escaping Liminality

There are two ways out of the liminal state. The first occurs when a contractor's status is reversed and the hierarchy is momentarily reversed. The low becomes high and the high turns low. Several instances with corporate contractors illustrate this. A driver, who is a contractor through an outsourced company, tells a story about one of his passengers with great amusement:

When I was driving, there was a woman. She was a snobby dog. And she started talking down to me. Had her nose in the air. Thought she was Queen Elizabeth [raising his chin to imitate her]. Just little things [she said], I could feel it. But

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then I started talking to her and I told her that I was a jeweler for 30 years and I sold diamonds. All of a sudden, her whole attitude changed. And I started talking DOWN to HER! You know what happened? She shut her mouth. [Laugh]

Another episode happened when a guard exercised his authority over a regular employee. He enthusiastically reenacted the shifting dynamics of their conversation,

> Yesterday, there was a guy. He wants to validate his parking. I said I need your cost center number. "Why do you need that?" "I need that to validate the ticket." "No, you don't." "Yes. I won't validate it unless you give me the cost center number, or I can look it up from the computer." "Oh, you can't do that!!" "Yes, I can." I finally got the number out of him. He has to put his employee ID too. "Now, it's going to be charged to my cost center?" he asked. "Ya, right." I scared him. Some people don't like to pay. You can only validate the parking if you're an employee in another facility. You can't validate it if you work in this building.

Corporate contractors like guards and drivers do not like to advertise their status as contractors. They say that it changes other people's views of them: "You're just a little contractor. You lose credibility." They utilize minor opportunities like those above to assert their credibility and authority over regular employees. Status reversal does not happen often. And, in an ironic way, the temporary reversal may, in the end, confirm the contractors' low status. As Turner (1969) notes: "The masking of the weak in aggressive strength and the concomitant masking of the strong in humility and passivity" confirms the social hierarchy as the moments are followed by "a sober return to a now purged and reanimated structure" (p.167).

A second and more permanent way to escape liminality is status elevation. After being put in a low and humble position, one is elevated into a more powerful position. For contractors, status elevation comes from "turning permanent." All of the individual contractors I have talked to regard being a contractor as a transitional arrangement leading to regular employment, either at BioCo (preferably) or at other companies. None

has expressed to me a desire to be a "lifer" temp. In fact, many positions are advertised as "temp-to-hire," although such ads make it clear that the passage is not guaranteed. The overall BioCo "temp-to-hire" ratio is unavailable, but of all the contractors I met in the purchasing department during my fieldwork period, 45% of them eventually became regular employees.

Hiring managers also like bringing in contractors for several reasons. They can use the time as an "extended interview" or a "trial period" to test the person's ability on real tasks. Moreover, some managers like it because they do not have the same development responsibility for contractors as for their regular subordinates. They can assign contractors any task and not worry about their career development. When a project is over, managers are not concerned about finding other work to keep their people busy. Getting the budget for a regular headcount entails a lengthy process of justification and approval, whereas hiring temporary help can be done rapidly. Firing regular employees is rare at BioCo. To let regular employees go requires putting the "underperformer" on improvement plans multiple times. Contrary to the difficulty of "getting rid of the deadwood," terminating contractors does not require elaborate justification. One day's notice is enough.

In general, I find that young contractors want to turn permanent more urgently than older contractors. They are eager to start a career, make a decent living, and receive what they see as generous benefits. I frequently heard them say: "I hope to get hired permanent. I will look into their tuition reimbursement program," or "It's my first day. I don't know what I'll be doing, maybe filing. But I want to become a permanent. I want to work here forever." More senior contractors have worked at other companies before,

have some savings, and are more relaxed. They appear less anxious about becoming

permanent and say they want to take time to "feel the working environment," to figure

out what it is like to work at BioCo.

Most contractors, however, old or young, prefer to be regular employees. Higher

pay and better benefits are not necessarily the primary motives for them. The respect and

inclusiveness that come with being a regular employee is equally attractive. A woman

tells me: "I was a consultant once [at another company]. But I would prefer to be

permanent. It feels like you have a purpose." Although she is now making less money as

a regular employee than when she was a consultant elsewhere, she still prefers the current

situation.

"Becoming permanent" at BioCo typically takes a long time, from a few months

to over a year. From anticipation to confirmation is an anxious and exhausting process.

But contractors say they are happy to eventually shed the contractor identity.

Anticipation

Contractors are typically on a three-month (sometimes six-month) contract. At the

end of their contract, a decision is then made to terminate, to renew their contract, or to

change the employees' status to permanent. The decision is influenced by a combination

of organizational needs, personal performance, project progress, and budgetary concerns.

It poses a great deal of uncertainty for contractors. A middle-aged woman whose contract

has been extended a couple of times says that she starts worrying a month before the

expiration date. Thus far she has kept the contract.

Kate is a 26-year-old college graduate on contract doing office work. She had been in another department at BioCo for several months before switching to her current group. She requested the transfer because she says she learned through the grapevine that there would be a full time position here. She has spent three months in her new group and a permanent position has yet to open up. She says she is getting frustrated and has started looking for a job with other companies.

Another three months passed and she tells her friends that her department is still unsure about her position: "They're not sure if they have the budget." A friend responds with some sarcasm: "They have a lot of profit. I'm sure they can make somewhere between $40-50K for you." Another six months pass and a friend of hers mentions to me: "We're worried about Kate. People would talk about it [i.e. making her permanent] for a while. Oh, this time it's sure to pass. It will definitely happen. Then it would just fade away. People won't talk about it. It's been so many times. Kate sometimes would get fed up when they gave her extra load of work. But then she would get okay." A few months later after waiting over a year, Kate finally made it into BioCo as a full time regular employee.

Confirmation

Contractors are nervous about the availability of openings and their own chance of being chosen. They search for indications of a forthcoming decision. Steve's supervisor told him that he was going to discuss with his department head Steve's likelihood of becoming permanent. The next day, Steve was working with a colleague at his desk when the department head walked by his cube. Steve clenched his hands and

prayed to himself: "Approve my business card. I want to work here." Contractors like Steve have no title and no BioCo business cards are issued to them. Ordering business cards for themselves is one of the things new regular employees do on their first day. Steve whispered to the colleague, "He hasn't approved my business card yet. [My boss] said yesterday that he's going to talk to him [i.e. department head] about me today. I was thinking if he approved the business card, it would be a good indication." He chuckled and opened the Internet Explorer to his request for business cards. "Oh, he hasn't approved it yet. Approve it!"

Usually when managers encourage the contractor to apply for an open permanent position, the person has a good chance of getting it. But they still have to go through the interview process. This phase can be stressful for the hopeful contractor. A young woman has learned from her manager that she is likely to be hired but must be interviewed by HR first. She tells me that she is so anxious that she dreamed about it last night. In her dream, she was late for the interview.

> When I walked in, Larry [another contractor in the same group looking to be hired as a permanent employee] was talking with the HR person. What are you doing here [referring to Larry]? I was upset. Then I sat down, but she [the HR person] was talking to Larry the whole time. I was shuffling paper to get attention, but then I thought maybe I shouldn't because I WAS late. There was a panel there, just watching us.

It usually takes weeks if not months to complete the hiring process. During this period, temps appear happy but noticeably curb their enthusiasm. They are frustrated at how long the paperwork takes. Each extra week as a contractor means deferring pay and benefit advantages. Julie, a 30-year-old office worker, came by my desk one day:

> "I'm going to be full time," she told me calmly. "I didn't want to say much because everything wasn't done yet. But a few weeks ago, my manager's manager talked to me. She said that there would be a position approved for April next year.

She asked me if I'm interested. I said yes. Now they have a position approved for January. They're going to open the requisition and upper management will have to sign it." [Are you happy? I asked.] "I want to wait until I start training or go to orientation. That's when I will be happy. There's so much red tape. The other guy that works with me, he turned full-time a month ago. They said he would be full-time by November. But that's when they START the paperwork. My manager became full time after a year. BioCo is trying to convert contract people to full time soon if they're good enough to keep." She paused, with a smile, "I guess I'm good enough to keep." [from fieldnotes]

Celebration

Once the paperwork goes through, contractors are relieved. There is rarely a party or formal celebration among co-workers for such an occasion. Yet the temps-turned-permanent find their own ways of marking the successful jump. Consider the following examples.

Kate's hiring procedure was finally completed. She has had her new hire orientation this week. At the orientation, she says: "I loved the trip through a BioCo facility [it is open only to permanent hires]! All those tubes and tanks. It was like in a Bond movie or something." She is very excited, speaking with her eyes wide open and hands waving. Steve has also confirmed his transition. He has already enrolled in the benefit programs after figuring out various options online. And he takes a business card from a full box and hands it to me with a cheerful laugh: "I'm REAL now."

Other "lucky" temps also have their moments. A woman, after several anxious contract renewals, finally became permanent. When she stepped out of the office, several friends at work put a big hand-written note on her computer screen saying "Congratulations :)" She has now put the note on the whiteboard in her cube. On another occasion, a man in his sixties happily tells me the news while walking downstairs, "I'm an employee now. No red any more." He pulls out his badge and shows it to me proudly.

After the long-awaited transition, the newly appointed regular employees gradually adapt to their new status. Their work often remains the same, but they say they feel different about coming to work, "more secure and legitimate." Many are relieved that their career is finally on the "right track." For others, old problems remain in place. A woman had suspected that her supervisor did not want to teach her new things when she was a contractor. But things have not changed after she turned permanent.

Of course, not every contractor is able to make the transition to permanent. A number of reasons can influence the process: no budget, no position, poor performance, or not getting along. They leave quietly with a goodbye given only to a few friends. People outside the immediate work group may not even notice their departure. One morning, Mary came to work and noticed that Carl, a contractor in another department who sat in a cube outside of her office, was not there. She said she knew instantly that Carl was not coming back because some of his belongings were gone. Days later, she found out through the grapevine that Carl was let go after clashing with managers because he ate some snack food ordered for a staff meeting.

Conclusion

As I suggested early in this chapter, the contractors' experience can best be described in anthropological terms as "liminality" – transitional periods between cultural stages or states (Van Gennep, 1960). Falling between the cracks of socially ascribed categories, contractors are "threshold people" at BioCo (Turner, 1969). They are suspended outside of defined roles. The key challenge for them is coping with ambiguity, uncertainty, and paradox. As many contractors observe, having no defined role is

difficult, resulting in a feeling that they are not "real." Similar identity challenge has been

observed for high-skilled contractors (Barley & Kunda, 2004) as well as low-skilled

clerical temps (Henson, 1996). Turner (1969) observes that most people experience a

liminal state temporarily. But as contracting practices gain popularity in the corporate

world, it is becoming a more common condition, even a way of life for some people

(Barley & Kunda, 2004).

To cope with the identity challenge, contractors mostly use a presentational

approach, complimented with interpretive and relational responses. Some contractors

emphasize the flexibility of their arrangements to argue that it is actually nice to be a

contractor than a regular employee because they do not have to commit to an

organization before they know it would be a fit. They say that they view a contractor

arrangement as a good way to "get a foot in the door," allowing them to "wait it out" for

openings, and "taste its culture" to see if they like working at BioCo. People who use this

type of interpretive framework tend to be older and more experienced, thus are under less

career pressure to pursue the more stable employment. Relational responses are also used.

In a previous section, I discussed examples of status reversal. Contractors seize the

moments to exert their authority over regular employees in brief interactions. These

provide temporary relief where the relational dynamics are reversed.

Most importantly, contractors as well as their managers develop their own criteria

about when to pass as regulars and when not to pass. These decisions are situational and

call for individual discretion. The general goal for contractors when making the passing

decisions is to present themselves as decent workers, mindful of their status, respectful of

regulars, and not taking undue privileges. On the part of managers, their goal they say is

to create a harmonious working atmosphere while maintaining their control. Similar presentational responses are observed among temporary workers in other settings (Henson, 1996). Dressing appropriately, acting with deference, and looking busy are some tricks temps use during their assignments.

For most contractors, their desired final escape from a liminal state comes through status elevation as contractors become permanent employees. It is a long process full of anxiety, but marks an important "status passage" (Glaser & Strauss, 1971) for contractors as they shed their contractor identity and embrace being a full member of the corporation. Managers who used to be contractors sympathize with their contractor subordinates, but after crossing the boundary they gradually adopt a regular's perspective. They participate in the negotiation of the contractor identity, only now they are on the other side of the border. The unfortunate contractors are let go. They may go on to contractor arrangement with other companies, or if they are luck may find a regular position. Their experience, in a way, is status termination. Their identity challenge as contractors at BioCo is terminated, but they are likely to continue a similar experience elsewhere.

CHAPTER 6: Conclusion: Pulling it Together

This dissertation began, in the spirit of Hughes (1971), to examine social

mechanisms common to diverse work communities which allows comparison "between

the junk peddler and the professor" (p.342). This aim has led the study to the issue of

identity challenges in a contemporary workplace. Through detailed depiction of everyday

work life across three employee groups at a biotech company, what can we learn about

how such challenges are managed? This chapter synthesizes the findings into patterns of

identity challenge and managing practices. I then use the concepts of social boundaries

and boundary characteristics to discuss how these approaches constitute distinct

boundary-making strategies.

A Summary of Identity Challenge and Coping Practices

Scientists, purchasers, and contractors all differ in the work they do, the social status

they enjoy, and the organizational roles they occupy. Yet the data reveal commonalities

across these diverse groups. Regardless of occupation and status, they all experience

identity challenges and have developed elaborate approaches to manage those challenges.

For all three groups, the challenging occasions are typically not of dramatic types but

fairly mundane. The person who experiences these moments, however, derives

significant meaning out of them. My data suggest that these identity challenges are

ongoing and widespread. This does not mean that they are paralyzing. They are part of

the daily routine that people deal with without much deliberation.

The three groups show distinctive patterns of the challenges they face and the approaches they use to manage the challenges (see Table 2). Identity challenges manifest in different ways. For scientists, the challenge is the stigma associated with a career path deviant from the science ideal. For purchasers, the challenge lies in the discrepancy between an identity they espouse and one they enact in projects. For contractors, the challenge is living in a liminal state as neither an insider nor an outsider.

Table 2: Patterns of Identity Challenge and Coping Approaches

	Identity Challenge	**Primary Coping Approaches**
Scientist	Deviance from the science ideal	Interpretive
Purchaser	Discrepancy between espoused and enacted identities	Relational
Contractor	Liminal state	Presentational

The groups' approaches to managing their challenges exhibit distinctive patterns as well. They all utilize interpretative, relational, and presentational approaches, but the data show different emphasis for each group. *Scientists* make heavy use of the interpretive approach to develop framings and schema that allow them to re-interpret the meaning of being a scientist. They reconstruct comparisons with academic science by highlighting their similarities that commentators ignore and by reinterpreting the differences in a more positive light. The *purchasers* depend most heavily on the relational approach. They seek to change their relationship with internal clients by meeting and teaching them, communicating their perspective, using "carrots and sticks" to get clients to behave in a desirable way. In the case of *contractors*, a third pattern emerges. Their use of presentational techniques stands out from the other two sets of approaches. They conceal

information about themselves, trying to pass as permanents. They adopt hard working styles and refrain from behaviors that they believe would project them as irresponsible and disrespectful temps.

From Micro Responses to Boundary-Making Strategies

The patterns of identity challenges and managing practices are based on observations of micro interactions. However, they have important implications for the reconstruction of social boundaries at a more macro level. In this section, I use the notion of boundary characteristics to link patterns of micro practices to macro boundary-making strategies.

Types of Boundary-Making Strategies

In a recent review of studies on ethnic boundaries, Wimmer (2008) proposes five types of strategies for boundary making among ethnic groups. Groups may shift ethnic boundaries through "expansion," incorporating groups into a new expanded category. They may shift boundaries through "contraction," promoting narrower categories. The third strategy is "inversion," not targeting the location of the boundary but the hierarchical ordering of groups. The fourth strategy is "repositioning," which does not contest the hierarchy or the location of the boundary. Rather, actors seek to change their own position vis-à-vis the boundary. The last strategy is "blurring," using other criteria to overcome ethnicity as a principle of categorization.

Wimmer's (2008) typology was derived to understand ethnicity, but three out of his five categories are surprisingly relevant to my observations at BioCo (see Table 3).

The scientists engage in the strategy of *boundary inversion*. Their interpretive

justifications contest the hierarchical order of worth between academic and industrial

science, and strive to change academic science's moral superiority over their work. The

purchasers use relational practices in pursuit of *boundary expansion*. They want to

include the work of contracting and making deals in their task domain. These tasks were

traditionally considered to fall under their clients' domain. The contractors engage in

boundary crossing[22]. They neither contest the superiority of being a regular employee,

nor do they attempt to expand their task domain. Rather, individual contractors use

presentational practices to project themselves as good workers and seek to become

permanent employees. Then they can change their own position within the existing

hierarchy. I choose not to use the two other boundary-managing strategies that Wimmer

(2008) identified (boundary contraction and blurring) because neither of the three BioCo

groups appeared to exhibit those approaches.

Table 3: Types of Boundary-Making Strategies

	Boundary-Making Strategy
Scientist	Boundary Inversion
Purchaser	Boundary Expansion
Contractor	Boundary Crossing

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[22] This is similar to what Wimmer (2008) calls "repositioning."

Boundary Characteristics for the Three Groups

Many properties of social boundaries are worth studying, such as their permeability, salience, durability, and visibility (Lamont & Molnar, 2002). Two characteristics are relevant and important here. The first is the level of institutionalization of a social boundary (DiMaggio, 1992). Some social boundaries are well-established and difficult to change. Others are new and open for negotiation. The second is the permeability of boundaries. Some boundaries are exclusive, "closed" and not "open" (Gans, 1992). Others are receptive of diverse ideas, or as Peterson & Kern (1996) say "omnivorous."

In this section, I discuss the boundary characteristics for each of the three groups, drawing on other studies of similar groups and their social boundaries (see Table 4).

Table 4: Boundary Characteristics and Boundary-making Strategies

	Salient Boundary	**Boundary Characteristics**
Scientist	Academia - Industry	Institutionalized, Permeable from high to low status
Purchaser	Line - Staff	Not well institutionalized, Permeable from high to low status
Contractor	Insider - Outsider	Institutionalized, Permeable from low to high status, or from high to low status

The Academia-Industry Boundary

The boundary salient to the BioCo scientists is that between themselves and academic scientists. The intra-professional stratification system that places academic over

industrial science is thoroughly institutionalized over centuries and is widely accepted

across many institutions in the society (Gieryn, 1983, 1999; Merton, [1942] 1973). This

boundary is permeable to individuals but only in one-direction (from academia to

industry).

Historical studies show that the science ethos was slowly institutionalized over

hundreds of years. Although considerable evolution occurred over time regarding what

distinguishes science from other types of intellectual endeavor, some of the dominant

contemporary norms took shape in Victorian England. The idea that science is the

foundation for technological progress, aims at theoretical discovery of facts as noble ends

in themselves, and does not need to justify itself by technological application was well

formulated and publicly articulated about 200 years ago (Gieryn, 1983).

The institutionalization of what type of science is more prestigious parallels the

gradual institutionalization of scientist as a vocation. Shapin (2008), in his

comprehensive historical analysis, shows that up to the 19th century doing science was "a

calling." There were few paid positions so only people who were rich or had another

livelihood could afford to do science. In the beginning of the 20th century, the scientist's

work was "still something of a calling but it was becoming something of a job; it was still

associated with the idea of social disengagement" (p.46). As science became more

intertwined with commerce and government, commentators came to the recognition that

there were different motives among scientists. But high profile scientists, such as Einstein

(1954), continued to express the view that those who "take to science out of a joyful

sense of superior intellectual power" are more important to science than those who "offer

the products of their brains on this alter for purely utilitarian purposes."

As more paid positions became available for scientists, in both academia and industry, the tension between the two intensified. A popular novel, *Arrowsmith* (Lewis, 1925) depicts a scientist troubled by whether or not to follow the pure, traditional ideal of research like his mentor. The main character in the novel, Arrowsmith, carried the philosophy passed down by his mentor: "to be a scientist – it is not just a different job.... The scientist is intensely religious – he is so religious that he will not accept quarter-truths, because they are an insult to his faith..." Arrowsmith eventually chooses the traditional path and sets up his own laboratory. This popular novel influenced a generation of youths as they later became scientists.

The tension between academic and industrial science continues till the present day. Scientists, social scientists, humanists, and commentators argue that in post-WWII society the university still remains "a refuge and the natural home for science as an intellectual and moral pursuit" (Shapin, 2008, p.91). Murray's (forthcoming) historical analysis shows that the resilience of academic institutions is so strong that they changed the meaning of patents as the traditionally industrial activity of patenting began to infiltrate universities in the 1980s to 1990s. She concludes that even with the increasing meshing between academic and industrial science, maintaining the boundary between the two is still of great importance to academics.

The deeply institutionalized boundary between academic science and industrial science makes it difficult for individuals to navigate the two worlds. The career flow has largely been from academia to industry, i.e. from high status to low status. Currently, a prominent reason for this unidirectional flow is the overproduction of PhDs (particularly in the life sciences who are those recruited at BioCo) in comparison to the available

academic positions. For example, NSF reports (NSF, 2008) that in 2007 annual doctoral

awards in the US had increased for five consecutive years. The highest number of

doctorates is in the biological sciences (7,173 or 14.9% of all doctorates). This represents

a 23% increase from 1998, compared to 12.7% average increase in all science fields over

the same period. At the same time, the number of academic positions (in science broadly)

grew more slowly than opportunities in the private sector and full-time tenure-track

positions grew even more slowly, particularly at research universities (National Research

Council, 1998).

How educational institutions handle the excessive supply of PhDs is now

problematic. Schools seem caught in the middle, trying to help PhD graduates find

appropriate research positions yet not undercut the scientific ideal. Such prestigious

universities as Caltech, MIT, and Pennsylvania are beginning to offer career help to

students seeking an industry career by providing counseling and industry career fairs

(Steinberg, 2001). At the same time, the National Research Council recommends caution:

"The PhD degree remains a research-intensive degree with the current primary purpose of

training future independent scientists. [...] The idea of alternative careers should not be

oversold to PhD candidates" (National Research Council, 1998, p. 86-87).

The norms governing the academia-industry boundary are, it seems, still strong

and resemble those from centuries ago, testifying to the thorough institutionalization of

this social boundary. Although some scholars comment that the academia-industry

boundary is being remade (Colyvas & Powell, 2006), that process has only recently

begun. Individual scientists at BioCo, they are not at the forefront of changing this

institutionalized social boundary. The most prominent strategy they use is boundary

inversion by constructing interpretive schemes to highlight the value of their own scientific work in contrast to that produced in academia.

The Line-Staff Boundary

Internal divisions also exist among purchasers, but the boundary that is the major concern to them is the one between themselves and their internal clients. Unlike the division within science, the functional boundary faced by purchasers is less institutionalized. The purchaser-client relationship takes a wide range of forms across industries and companies. Industry benchmarking shows that the percentage of total spending controlled by purchasers ranges from 95% in electronics and aerospace defense industry, to 70% in pharmaceuticals and 56% in financial services (CAPS, 2007). A survey of 284 companies suggests that purchasing's organizational structure varies from centralized to decentralized, with 66% utilizing some hybrid form (Johnson & Leenders, 2004). They also find that the reporting line for top purchasing manager varies a great deal: 38% of them report directly to chief executives (CEO, COO, CFO or president), 32% report to an executive or senior VP, 23% report to a VP or director. Another study finds that purchasers' involvement in new product development varies significantly across companies, ranging from 1% of the total work time to 30% (CAPS, 2004). This is another indication that the boundary between purchasers and their internal clients is far from uniform across companies.

Research reported in academic journals paints a similar picture of divergent practices. A survey of purchasers shows a wide range of perceptions of the occupation from top management. One study notes that of the 85 purchasing executives surveyed,

31% report that their function is viewed in their company as a "professional group," 21% as "profit contributor," 13% as a "strategic unit," and 35% were viewed as a "clerical and expense function" (Guinipero & Fogt, 1997). Their descriptive statistics show that purchasers in some companies perceive themselves as more respected than those at other companies. Interviews and surveys of purchaser-scientist interactions in 57 research centers in Canada and US distinguished firms with high purchasing involvement from those with low involvement (I. Stuart, 1991). High involvement firms have more frequent, earlier and more intensive interaction between purchasers and R&D scientists.

My informants often told me about their experience at other industries such as defense, electronics, or automobiles. They said many of the organizations they used to work for had more "mature" practices that, to them, suggested that purchasers have more decision authority and were more deeply involved in projects.

The existence of a wide range of possible purchaser-client relationships is important because it signals less boundary institutionalization and hence more room for change. The variation suggests that situations could be improved from the purchasers' perspective. Their prior experience at "more mature" companies provided the basis for what purchasers aim to achieve at BioCo. Another source of envisioning what is possible comes from "thought leaders" of the occupation. Many publications promote a normative vision that purchasing should be a "strategic" function integrated into the beginning of a project (Wolf, 2005), linked to corporate strategy (Watts et al., 1995), extending the "reach" through the value chain of the firm (Carter et al., 2000), directly impacting company profits (Tully, 1995), and improving business partnerships (Bensaou, 1999).

While the boundary faced by purchasers at BioCo remains open to negotiation, it does not seem open to people moving from purchasing to the client side. The majority of BioCo purchasers have come from line functions. That is, they used to work in a capacity similar to that of the internal clients they now serve. Some came from labs. Some used to work on clinical research. Some were engineers. Some were sales representatives with suppliers, and so on. However, none of them currently plans to switch out of purchasing back to a client function. As with scientists in industry, the flow seems to be unidirectional. Some possible reasons include the timing of career transition – people switch to purchasing after a few years in client functions, and a few more years later they are at a career stage at which they prefer stability over change. Another reason is skill sets. After leaving the client function, it is hard to keep up with the technical knowledge required for a return to the client function. Third, people may leave the client functions in the first place because there is something about the nature of the work that they did not like. Therefore, they are unlikely to want to return to the same environment.

To help overcome the identity challenges BioCo purchasers face, examples of other companies and ideas from thought leaders provide a rich repertoire for envisioning what a new relationship could be, provide ways of rationalizing why that should be the case, and allows them to formulate what can be done. Such guidance supports the relational practices used by purchasers for boundary expansion. The unidirectional career movement also provides additional motivation for boundary expansion since purchasers cannot improve their status by moving into the client functions. What they attempt to do is the expand the "jurisdiction" (Abbott, 1988) of tasks vis-à-vis their clients and gain respect for carrying out the additional work more effectively.

Organizational Insider-Outsider Boundary

I have argued that the academia-industry boundary is thoroughly institutionalized and the purchaser-client boundary remains flexible, and that both are permeable in only one direction. The organizational boundary that contractors straddle presents yet different characteristics. This boundary is set by well established social norms and legal contracts. But, as noted, it is also porous.

Who is inside the firm and who is outside has until recently been a clear-cut matter. Those employed by a firm were typically regular employees. This practice was solidified during the New Deal and institutionalized in labor law and collective bargaining (Barley & Kunda, 2004; Smith, 1997). Under this practice, generations of workers grew to understand employment as a family-like notion of becoming an in-member. This notion has been deeply shattered since the 1980s when downsizing and layoffs became rampant (Heckscher, 1995; Moore, 1996; Newman, 1989; Smith, 1992).

The rise of contingent workers both results from and contributes to this drastic change in employment (Council, 1999, for trend analysis). The temporary agencies are part of an industry that has thrived and continues to promote the use of temps (Smith & Neuwirth, 2008). Many in-house jobs are now externalized, filled by people on a temporary basis, through a contract company, or through independent contracting. The broad consensus among researchers is that companies turn to these arrangements for economic reasons: to avoid having workers on payrolls if demand is slack; to reduce wage and benefits costs; and to save administrative costs of recruitment, hiring, control, and firing (Smith, 1997). Despite the prevalence of these practices, the institutionalized norms about the insider-outsider boundary are still at work. The old social norm that

values being an in-member translates companies' financial motives into a value-laden evaluation. Companies used to have all employees as permanent but now they can be more selective about whom to admit as in-members. Permanent versus contingent becomes a way to distinguish between jobs that are essential for the business versus those that are auxiliary. Permanent positions turn into a privilege, reserved for service integral to the business. Contractor arrangements are by comparison an indicator for what can be "disposed of" (Geary, 1992) and "thrown away" (Graham, 1995). Workers also come to interpret this distinction as an evaluation of their service – are they worthy enough to get into the in-circle, or are they just "peripheral," "disposable," and "marginal?" Even the supposedly neutral language of "nonstandard employment" used by social scholars implies that contracting work is not normal (Ashford et al., 2007; Kalleberg, 2000).

When individuals move from permanent into contingent arrangements they often do so involuntarily, associated with massive corporate restructuring (with the exception of a small but growing group of highly-skilled independent contractors, the so-called "gold-collar" contractors). The movement from contractor to regular employment, however, is mostly an individual path. Studies of hiring practices suggest that some employers use the contracting arrangements as a recruiting channel, watching temporaries on the job before deciding if they are qualified to be hired as a permanent (Cohen & Haberfeld, 1993; Henson, 1996; O'Reilly, 1994). This is certainly the case at BioCo where most people – both contractors and permanent employees - viewed temporary positions as an extended interview period.

The institutionalized social norm places most value on being permanent employees. Therefore, being on one side of the boundary (i.e. being permanent) is more

desirable for most, if not all, temps at BioCo and is viewed as more socially acceptable.[23] As I have argued, the normative evaluation is persistent and an individual contractor certainly feels powerless to change it. The boundary is, however, porous. Many individuals do in fact switch from the low status contingent arrangement to the high status permanent situation. The decision is made on a case-by-case basis, considering each person's qualifications and performance. Under these circumstances, the strategies of boundary inversion or expansion are difficult to carry out because they call for collective actions against existing norms. Instead, contractors focus their attention on presenting themselves as qualified and hardworking in order to reposition themselves as permanent.

Boundary, Identity Challenge, and Managing Strategies

Social boundaries and the tension between people on different sides of the boundaries give rise to identity challenges. The micro practices that people use to manage those challenges are at the same time boundary-making activities that reinforce or change the macro social boundaries. My data show that scientists at BioCo use interpretive schemes for boundary inversion, purchasers use relational practices for boundary expansion, and contractors use presentational tools for boundary crossing. And the characteristics of the social boundaries (their level of institutionalization and permeability) are social conditions that shape the translation from micro practices to macro strategies (see Table 5)[24].

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[23] At BioCo, this is not only true for lower skilled temporaries, but also for high-skilled contractors.

[24] I by no means wish to claim that these are the only relevant factors to shape the final pattern of strategies.

Table 5: From Micro Practices to Boundary-Making Strategies

	Micro Managing Practices	Salient Boundary	Boundary Characteristics	Boundary-Making Strategies
Scientist	Interpretive	Academia - Industry	Thoroughly institutionalized, One-way permeable	Boundary Inversion
Purchaser	Relational	Line - Staff	Not well institutionalized, One-way permeable	Boundary Expansion
Contractor	Presentational	Insider - Outsider	Institutionalized, permeable	Boundary Crossing

Theoretical Implications

This study draws on the notion of boundary to understand patterns of everyday identity construction. In theory, the study of identity is closely linked to that of social boundaries. In practice, however, work in these domains has been scattered in several academic circles with few cross references to each other. Identity theories frequently used in organizational scholarship have three main origins: interpretive symbolic interactionism (Goffman, 1959; Mead, 1934; Strauss, 1969), structural symbolic interactionism (Stryker, 1980), and a European cognitive stream (Tajfel, 1982a; Tajfel & Turner, 1986). Social boundary theories come from several sources such as the studies of social classes (Bourdieu, 1979; Lamont, 1992, 2000), the sociology of the professions (Abbott, 1995a, 1995b) and knowledge (Gieryn, 1983; Star & Griesemer, 1989), social cognitive research (Zerubavel, 1991), and the research on social movements (Tilly, 2005). Drawing the theoretical commonality across these domains, this study has

implications for future studies in identity and social boundaries, and what organization theorists can learn from these fields.

Implications for Identity Studies

This study shows variation in identity dynamics and examines some of the factors that account for it. In doing so, it furthers identity studies in several ways. First, my data show that identity is " a perpetual work in progress" (Ashford & Taylor, 1990, p.213). It is not an attribute of pre-defined, fixed groups, but rather a process of *identifying*. It is meaningless to speak of identity as a thing outside of the accumulation of identifying acts. Identity is defined, constituted and re-configured through these acts (Van Maanen, forthcoming). This study further demonstrates that the identifying process is largely an unspoken one that occurs as people go about their daily routines. There are surely moments of self reflection and pondering, but for the most part the self reflection is overlaid by ordinary day-to-day activities as people try to get things done in their work and life. To divorce identity construction from the underlying activities is to rip it from its foundation. This suggests that the study of identity needs to be grounded in daily practices. Scholars need to observe the "doing" of identity in addition to the "talking" of identity. The suggestion to ground identity study in people's daily practices is consistent with the broader "practice" approachin organization studies (Orlikowski, 2000, 2002). Barley and Kunda (2001) argue that organizational theories suffer from ungrounded claims if their analyses are divorced from the realities of the work that actually goes on in offices and on shop floors. They argue that basing theories of organizing on studies of work helps to break new conceptual ground and resolve existing theoretical puzzles. So

far, few studies of identity have incorporated a practice-focused approach. Such a grounding in work activities will provide a more comprehensive view to identity study, incorporating both identity talk and identity work.

Secondly, I show that identity dynamics vary considerably depending on the social context in which they operate. Consistent with propositions from social identity theory (Tajfel & Turner, 1986), the process of identity construction and maintenance can take different forms and produce different results. As illustrated by the contractors, identity can be a reinforcing mechanism strengthening the systemic division although each individually reposition themselves vis-à-vis the boundary. In the case of the purchaser, identity concerns generate sustained collective effort to challenge the existing structure. In the case of scientists, we are only seeing the beginning of the potential reshaping between academia and industry. If the normative inversion is accepted by the general public and academic scientists, we may see change in the social structure. If the inversed interpretations stay within the industrial scientists, the status quo is likely to persist.

In other research settings, studies have also shown the wide spectrum of possible dynamics. On the one hand, identity can be persistent. It can help us understand why group stereotypes are perpetuated (e.g. Haslam *et al.*, 1999; Verkuyten & Hagendoorn, 1998) and why people resist change (e.g.Kellogg, 2005). On the other hand, identity can be a very powerful motivator, stimulating people to question the status quo and to participate in various identity-based social movements (e.g. Creed *et al.*, 2002; Rao *et al.*, 2003). When employing identity as an explanatory concept, researchers need to be sensitive to the range of possibilities, since identity can be both enduring and malleable, both change-inducing and change-hindering.

Finally, this study proposes that the characteristics of the boundary from which identity issues arise shape how people respond to identity challenges. When social boundaries are institutionalized but allow individual movement from low status to high status, as is the case of contractors, identity is likely to be a reinforcing mechanism. Individuals reposition themselves vis-à-vis the boundary but collectively they solidify the existence and status differentiation of the boundary. When the existing structure is institutionalized but permeable in only one direction, as is the case with scientists, the identity issues of those in a lower status who cannot move to the higher status lead to a scheme that challenges the meaning and order of the existing boundary. When the social boundary is not well institutionalized but highly variable, people's identity needs seem more likely to trigger large-scale change attempts, as is seen among the purchasers. The concrete image of a potentially different state becomes a powerful motivator of hope and possibility. More research is needed to further understand the social mechanisms that lead identity dynamics to unfold in different ways.

Implications for Boundary Studies

Within the sociological tradition, studies of boundary have largely focused on macro institutional boundaries, such as those between professions, nation states, ethnic groups, social classes, and so forth (DiMaggio, 1992; Gieryn, 1983; Tilly, 2005). This study focuses on localized boundaries, linking the micro interactions with macro phenomena. It shows that macro boundaries are enacted and materialized at a micro level. The tensions of social systems are most observable and concrete at the micro level.

Individuals' local identity work constitutes "boundary work" (Gieryn, 1983) that reinforces or changes social boundaries.

On the other hand, micro interactions that seem to be the result of idiosyncratic individual choice are shaped by macro sociological and historical conditions. The characteristics of social boundaries have significant influence on what strategies are played out by individuals. Moreover, individual actions draw upon cultural repertoires from the broad social context (Lamont, 1992). In this case, scientists use logics that are embedded in academic institutions. Purchasers borrow their languages from trade associations and colleagues in other companies. Contractors resort to a socially acceptable discourse of individual hard work. The management of these localized boundaries mobilizes broader cultural resources.

Theories of boundary have so far seen only limited adoption in organization studies. Scholars can further our understanding of organizational phenomena by looking at the workplace interactions around boundaries. One such area that has seen insightful development is the issue of knowledge sharing and work collaboration. Examination of boundaries between work communities illuminates why such sharing and collaboration are difficult to achieve in organizations. Observations of production floors reveal that the boundaries between worker groups not only demarcate status and control, but also entail different languages, knowledge bases, and interpretations of problems (Bechky, 2003a, 2003b; Carlile, 2002). They show that engineers, technicians and assemblers use "boundary objects" -- drawings and machines -- to negotiate and reinforce occupational status, to challenge each other on task divisions and to share their knowledge. Recent work shows that technological objects not only facilitate coordination, but also can

produce various types of boundary relations between occupational groups (Barrett et al., 2007).

In addition to bringing a micro level of analysis to boundary studies, organizational researchers can also extend the domain by looking at multiple boundaries. Most boundary studies derive from analyses of a single form of boundary, such as class boundaries, professional boundaries, gender or ethnic boundaries, and so on. In modern organizations, different boundaries co-exist. By looking at three types of boundaries – intra-occupational stratification, functional boundaries within the organization, and the boundary of the organization itself – this study demonstrates the advantage of studying multiple boundaries simultaneously.

Implications for Occupational Studies in Organizational Contexts

By looking at three work groups within an organization, this study also contributes to the study of occupational communities in an organizational context. Historically the research on occupation and that on organization have been largely separate lines of inquiry, with the former gradually fading into the background and the latter gaining popularity. There were several periods when the two streams were integrated. The first period resulted from the growing concern when autonomous professionals such as scientists were moving in greater numbers into bureaucratic organizations. Kornhausser (1962) concluded that the conflict experienced by scientists is that between professional autonomy and organizational integration, "to gain access to the organization without becoming available for manipulation by the organization" (p196). There were heated debates over whether and how much organizational bureaucracy hurts professionals (e.g.

Bailyn, 1985; Derber & Schwartz, 1991; Engel, 1970; Miller, 1967; Raelin, 1991). The

findings suggest that the presence of professionals in an organization affects

organizational structures and vice versa (Hall, 1968).

A second period of integration emerged as engineers rose to play prominent

economic roles in organizations. Much effort was put into understanding engineers as a

special occupational group. Unlike scientists or physicians, engineers adopted the

organization's objectives much more readily (e.g. Perrucci, 1971; Whalley & Barley,

1997). Organizational scholars called for more incorporation of occupational perspectives

in their analyses (Van Maanen & Barley, 1984). Barley and Tolbert (1991) continued to

raise the concern:

> If students of organizations and occupations were to finally adopt a
> common language definition of a profession and admit that modern
> organizations have become fertile breeding grounds for new occupational
> groups, they would immediately confront unlimited opportunities for
> theorizing, but at the same time find themselves with very little data on
> which to draw. [...] Without historical information on how such
> occupations came into being, ethnographic data on the nature of their
> work, and statistical information on their members' characteristics, we are
> poorly positioned to develop valid theories of how occupations and
> organizations interact. (p.11)

The concern for integrating occupational analysis in organization studies has most

recently reappeared as scholars turn their attention to new forms of organizing. As

organizational careers are becoming more precarious, scholars argue that many people

are turning to an occupational orientation for a sense of security and identity (Tolbert,

1996). Others have argued that organization and occupation, two ways of organizing and

two sources of worker identity, are increasingly meshed together to create a "matrix"

economy (Barley & Kunda, 2004).

This study exemplifies individuals in this matrix economy. Scientists are professionals in organizations, striking a balance between their professional desire and organizational needs. Purchasers are an organizational function wanting to become a profession to enjoy the recognition and authority of a professional group. Contractors can choose to further develop occupational or organizational affiliations. How do occupational and organizational forces shape an individual's work experience? Take contractors for example, in what conditions do they identify with their "craft" over their employer? Studies suggest that high-skilled contractors lean towards their occupation (Barley & Kunda, 2004), while other studies find that contractors in the technology industry identify organizationally with both their client organization and the agency organization that employs them (George & Chattoopadhyay, 2005). What influences contractors' identification process?

It is necessary to note that my data for the three groups came from different modes of observation. The analysis of purchasers and contractors rely most heavily on observational data, while the analysis of scientists is based mostly on interviews. It is possible that an interview setting elicits reflections on the informants' interpretations of their past and present positions. And close observations are more likely to reveal interactional dynamics.

One of the limitations of this study is that it has not incorporated other sources of identity that can affect workplace dynamics, such as race, gender, and family situation. This omission by no means suggests that those sources are less important. On the contrary, minorities in BioCo's predominantly white environment often made unsolicited

comments to me about their ethnicity and speculated whether that has any bearing on their experiences at work. Similarly, family concerns were openly discussed. Many employees praised the company for being family-friendly and individuals made no effort to hide their desire and struggle to attend to both work and family matters. Increasingly, research has demonstrated that these more general social issues are becoming a non-negligible workplace issue (Bailyn, 1993; Epstein, 1990; Stinchcombe, 1990). They open exciting new territories for students of identity and organization. How do different sources of identity come to play at work? How do people reconcile different demands? As the workforce becomes increasingly diverse, what are the challenges and advantages associated with it? How does diversity change other familiar organizational dynamics?

An additional omission is the occurrence and management of identity challenges outside of the workplace. People not only bring their personal life (and identities in those spheres) into the workplace, but vice versa as well. To what extent do identity challenges arise in one's personal life? How do people manage those? Do work identity issues occurring outside of work mitigate or exacerbate those encountered at the workplace? These are, regretfully, not the focus of this dissertation but are important and exciting questions for more research.

Practical Implications

The findings of this study have implications for organizations. Identity issues, as I have argued, are prevalent and consequential in organizations. When planning organizational structures, policies, and programs and analyzing their success (or failure), managers need to investigate whether their initiatives create new identity challenges for

employees. Recognizing that employees' self view matters can help managers understand the social dynamics at their workplace and better manage their people.

Managing scientists is an increasingly interesting area for many organizations that employ a great number of highly trained professionals. This study suggests that organizations can play an active role in providing scientists with frameworks to interpret their career choices. This facilitates individual scientists' efforts of self justification. Another learning for organizations is the potential danger of internal stratification, particularly between research and development. When there is a clear organizational divide between the two areas, it feeds into the identity dynamics described in Chapter 3. This creates conditions for animosity between research and development scientists as the former try to claim scientific superiority over the latter. The potential animosity can hinder the necessary collaboration between the two groups and slow down the overall scientific research process.

When managing internal service functions such as purchasing, senior management needs to realize the desire of those in the functions for professional status and respect, but to balance that appreciation against too much rigidity. The internal clients who respect the service providers' desire and give them the opportunity to utilize their expertise often get better service and avoid the purchasers' "punishing" them with unnecessary paperwork roadblocks (which my informants say is within their discretion and easy to do if they are so inclined). On the part of service functions, it is important to resist the temptation of rigid rules. Service providers are stereotyped traditionally as inflexible rule-followers in the organization. Overuse of impersonal rules, while making

the service providers feel more powerful, may actually reinforces a bureaucratic stereotype and, in the long run, undermine their power.

Finally, on the management of contractors, this study demonstrates the difficulties faced by both contractors and regular employees. If companies provide ample opportunities to qualified temps to become permanent, it promotes a sense of equity on the part of both contractors and their managers. When managers like their contractors, they want to hire them as regular employees, both because they view it as fair and because it will improve the group dynamics. They find it frustrating if their hands are tied by superiors. Besides job opportunities, there are other symbolic gestures organizations can make to reduce identity challenges faced by temporary workers. Contractors pay much attention to small but important matters, such as invitations to corporate events. How the organization treats its contractors also has impact on how the regular employees think about the organization. If they see that the temps are treated fairly and with respect, they may feel that they will be taken good care of by the organization as well. During my fieldwork, I did not observe much public recognition of contractors' contribution to the organization. It seemed almost taboo to talk about contractors, as if their mere presence was something to conceal. Since contingent employment is going fast in contemporary corporations, it is probably far better for employees to talk about contractors, their needs, their strengths, their weaknesses and do so comfortably and openly.

How far can the observations of contractors, purchasers, and scientists go? How applicable are the conclusions drawn from a successful biotech corporation to other organizational settings? These are important and difficult questions for ethnographies like

this one. There are ample reasons to suggest (and I have certainly argued) that the

findings have purchase outside of the setting where they were developed. But it is an

empirical question for future research to explore.

METHODOLOGICAL APPENDIX: A Fieldworker's Identity Challenge

Like many viewers of magic shows, readers of scholarly work, ethnographic accounts in particular, are curious about what is behind the curtain. Partly, readers want to check for themselves that the accounts are not pulled out of thin air. Partly, knowing how the texts come to take a particular shape helps to bound the interpretation in a particular context. Also, interested readers can learn from (and critique) each other's experience. It is the purpose of a method section to lift that curtain.

Fieldwork

Negotiations for site access took place over several meetings with managers of different ranks. I spent five months going back and forth, from the university to the field site before, climbing up and down the corporate ladder, I found myself on a cloudy afternoon at the end of a meeting with a signed form to get my badge as a contractor. The security guard took my picture and handed the badge to me with a big smile on his face: "Welcome on board!" By entering a remote place (not in terms of geography but culture), I now stood in between two worlds. The need to balance between becoming an insider and remaining an outsider was constant. The "detached involvement" of a "professional stranger" remained throughout the fieldwork period (Agar, 1980).

Blending In

One of the fieldworkers' tasks is to become part of the culture they study (Van Maanen, 1988), as unobtrusive as possible, like "a fly on the wall." This means, first, to

behave similarly as the people under study. For many months, I followed the schedule of a typical BioCo worker. Most of them arrive between 8 and 9am and leave between 5 and 6pm. Although flextime is not the official company policy, some employees work out a schedule with their managers. Therefore, they may start their day before 8am and leave before 5pm. On some days, I chose to get to the office early or leave late to meet different people and observe different activities. I spent 4-5 days a week with an internal service group, purchasing, for seven months. They took me to various parts of the company as they interacted with different internal clients. I attended work meetings with both internal and external parties, group meetings, and expanded staff meetings. I attended orientations, lunchtime presentations, public seminars, volunteer events, BBQs, summer outings, holiday parties, and birthday parties. In between scheduled events, I had spontaneous conversations with informants or "camped" in employees' offices typing my notes. Other times, I roamed around office labyrinths. I ate at the cafeteria, observing other employees and trying to pick up conversations between others as well as engaging in conversations myself. My regular ride on the BioCo shuttle bus that runs between facilities -- some 20 miles apart -- turned out to be a great research opportunity. During a long ride, passengers were often willing and had time to talk.

A second way to blend in is to assume a minor but useful participant role among my informants. For most people, I was a willing listener. For some, I was an extra pair of hands when needed. Some used my help with building databases, analyzing spreadsheets, or setting up web surveys. I deliberately limited my contribution to technical aspects, leaving substantive discussions to the informants. On a few other occasions, I was asked to help with light physical work. I was also an active helper in corporate volunteering

events, serving as a photographer or receptionist whenever necessary. For the most part, my help was appreciated, except once at the beginning when my gesture to help was interpreted as a request to do their job for them.

My student status was also helpful in making my presence acceptable. Since many student interns work on projects at BioCo, my student status was not entirely foreign. I also had a student appearance. I dressed in a similar way as when I taught in classrooms at MIT, something between jeans and suits, and always with my backpack. However, most of the interns are college sophomores or juniors. That is probably why I was often asked about my partying routines on nights and weekends. Many informants (except those PhD scientists) are unfamiliar with the length required for a doctoral degree and would show sympathy for my having to endure such a long period as a poor student. "I'm a starving receptionist. You're a starving student," a woman said to me as we sat for lunch. Once another woman said to her colleagues, "Let's help her get out of school and get a real job." My student status (as well as a researcher role) also earned the needed tolerance for my "inquisitiveness." In addition, my MIT affiliation lent me credibility, raised a few eyebrows and earned a few nods.

Standing Out

The most significant difference between my informants and myself was my autonomy. Although I would check in with my BioCo sponsors from time to time, I maintained my own schedule and activities. I carefully balanced my interaction with different hierarchical ranks, making sure that people understood and saw me interact with various groups and all levels of employees. I tried to stay neutral in the conflicts between

groups and ranks. Managers also realized that their influence over me was of a different sort than what they had over their direct reports. Once at a lunch time card game, a woman jokingly asked a manager how many people at the table he managed. "Two and a half." I was not included in that two and a half although he was one of my sponsors. Another manager said it more explicitly in a casual hallway conversation with his direct report, "Alice, her career is not in my hands."

Another indication of my difference is the difficulty BioCo employees had in classifying me. A number of them interpreted my role as an intern and introduced me to others as such. Since I was a student, the "intern" category came to mind. BioCo constantly has undergraduate and graduate students work on temporary projects for short periods of time. In practice, being classified as an intern was useful because interns in general are thought to have little content knowledge and therefore they have had to learn. But the fact that I was not getting paid baffled them. A few others thought of me as a consultant, though that gradually changed too as they found that I was not delivering analysis or recommendations. The effort to classify me proved to be hard because there was not any social category familiar to my informants to accurately capture who I was. An employee searched for a term when introducing me to his co-worker, "She's at MIT. What shall we call you? Intern? Observer? Or ghost in the hallway?" Many of them gave up on giving me a "title." Instead they talked about what I was doing. "She is studying us. She's observing what we are doing."

Although I tried to emulate how my informants dress and talk, there were still subtle things that escaped my attention. Despite my business casual attire, I kept carrying my backpack everyday. At an offsite conference with attendees from various companies,

I had a conversation with an employee from another biotech company. He declared himself an "outsider" of biotech "parachuted in from the high-tech industry." Then we realized that among the hundred people at the cocktail party we were the only two carrying backpacks.

Despite my desire to become seen as "one of them," I sometimes enjoyed my detachment. I was able to listen to complaints without experiencing the frustration of the complainer, analyze problems people ran into without having to solve them myself, observe the ups and downs of corporate life without being swept away by it. Many people envied my freedom to interact beyond the boundaries of groups and departments. Brief comments were often made about me, such as "You know everything," "She knows everyone. I've been here long, [but] she knows everyone," "You know a lot of people. I'm only in my office doing the work."

Mutual Observation

While I was observing the BioCo people, they were observing me as well. My presence caused much curiosity and discussion unbeknownst to me. Once I introduced myself to an employee, who surprisingly already knew my name. He told me that I had been "the talk of the town." My extensive note taking attracted a lot of looks at the beginning. People knew of my research purpose and were respectful of the privacy of my notes. But sometimes they still could not help wondering what I was writing all the time. During a daylong shadowing, the informant peeked at my laptop screen and pulled back immediately. "That's a typo," he said, probably having seen the red lines in my Word document.

For the most part I was left alone as far as my notes were concerned. Only occasionally were joking comments made about them. "What were you writing under the table?" "This is how many? The 3rd or 4th of your notebooks? You used a lot of notebooks." Over time, my note taking was taken as a natural part of my identity and learning. And only on a few instances where I felt continuous writing was out of place did I limit it to important phrases and points.

The observation of my behaviors did not stop with growing familiarity. In fact, it became part of regular interpersonal interaction of the fieldwork experience. For several months, I rode almost daily with the shuttle drivers. They often pointed out the deviance in my behavior that they had noticed. A day after I did not show up, I was questioned by a driver: "Have you been playing hooky yesterday?" I answered that I had work at school. "So, you did ditch work." He insisted that not showing up at BioCo meant not working. On another ride, after my conversation with a frequent passenger, the driver commented to me in amazement, "I haven't heard her talk. She's usually very quiet. You talk a lot, but she usually doesn't." My talking activity was frequently noticed. One day a driver asked me about my conversation on the previous day: "You were being nice to Peter. Did you get information out of him?" These comments were largely meant as teasing. They nonetheless made me realize that I was constantly watched by various BioCo people -- just as I was watching them.

Not only was my behavior watched, but my actions were frequently diagnosed and interpreted just as I tried to read their behavior. Some people liked my attention. "I feel so important," someone said after the interview. A woman began to sing a song about "me and my shadow" after I shadowed her for a day. My presence and interest

were interpreted as reflecting something important about themselves and their work. "She's studying my life." "She's been with us a while so we must have something interesting." My reaction, or the lack thereof, could be perceived as a judgment on the informants. At a meeting a woman asked me whether I was attending the meeting next week. It was the first time I learned about the meeting and was caught by surprise. Huh? I said. My downbeat intonation was immediately taken as a sign that the meeting was uninteresting. "We finally put her to sleep," said another man at the table, "I told you [referring to me]. It's going to be boring." As much as I restricted giving verbal evaluations of my observation, my non-verbal behaviors were often taken as cues. I frequently heard comments like: "We haven't driven her off," or "You haven't fallen asleep." In spite of my care, my presence was in few instances interpreted negatively. For about a week I was "camping out" in a particularly large office shared by two other employees. My too frequent presence there was interpreted by their manager as reflecting something negative about the group. "Are they not busy? Are they bored? I'm screaming for more staff, and she [one of her direct reports] is hanging out with you."

As I took on a role acceptable in the new world, the people I studied also developed new roles towards me. Ethnographic work is difficult to mentor because of its unpredictable nature (Van Maanen, 2001). Some of my informants began to assume a mentor role, guiding and helping my research. After an interview, a PhD scientist who used to be a university faculty member inquired about what my research entailed. Then she started to plan a research schedule for me - finishing data collection within a certain time, moving to data analysis, and leaving a few months for writing the work up. Another informant tried to help me with my interview questions and research design:

All these are good questions, but you are covering a lot here. You don't want to waste your time and energy, and the time of people here. This leaves a lot of work afterwards. You ask all these questions and then have to go with a magnifying glass to search for some pattern and trend. Is there a pattern here? That leaves chances. You may have 50 dissertations here. But you only need one. You don't want a bowl of sand. You want that one to be a crystal, shiny, hard diamond! [...] You come up with a hypothesis, and you collect data to either prove or disprove it. Of course, in social science, it's less accurate. But you come away with a strong thesis. If your sample size is enough and you can prove the hypothesis, then that becomes a FACT.

These informants offered me a kind of mentoring based on the research experience they had. They offered advice on designing a study, sharpening hypotheses, collecting systematic data, and at times reminded me to write down useful events and conversations.

Another aspect of the mentoring role my informants took on was to monitor my progress. The academic time of a research project varies drastically from the company time of a project. Soon after my observation started, my informants began to inquire about my progress. Two months and two days into my fieldwork, I encountered the first inquiry at a group staff meeting.

[The manager] "Let's go around the table." And he turned to me. "What have you observed? How many pages have you written?" I couldn't say, and squeezed out "zero". "What's the title?" Asked another man. "I don't have a title yet." I said embarrassingly. The manager then asked, "Have you picked the color of the ink to print your thesis?" "She's just gathering information," a woman came to my rescue. [from fieldnote]

I was asked quite a few times how many pages I had written. This became a source of friendly joking. My "non-progress" led a couple of individuals to think that I would never be able to graduate.

Deskwork

After retreating from the field, the deskwork began. The less adventurous part of ethnographic work presents a continuing challenge to balance between the two worlds. When in the field, one attempts to cast aside what was familiar in order to immerse oneself into the new world of the studied. When out of the field, the fieldworker re-enters the once estranged academic world.

I started with the data on purchasing staff and tried to develop a paper. I read my notes and interview transcripts and began to do open coding for any theme that I thought was interesting. Through repeated examinations of the themes and discussions with advisors and friends, I realized that my informants were trying to legitimize their work. That became the theme for the first paper. After two years and many iterations, the framing was tightened but the general theme remained. In retrospect, this foreshadowed the theme of this dissertation which is about people's legitimating acts. But as I started to draft the dissertation, I was puzzled about how to develop an overarching argument to cover scientists, purchasers, and contractors. I tested several ideas such as the interplay between organizational and occupational self, or the controlled connection between employees and their organizations. After several weeks or months of writing, I would find (or my committee would tell me) that the argument wasn't really working. Then I had to search again. It was during reading of the notes, rewriting what I already had, writing down random ideas in a thought journal, talking with friends, or pondering during walks that I would come up with a different idea to try. It was during this long trial and error process that I eventually settled on the identity challenge theme. In retrospect, it seemed to be always there waiting for me to find it. But the trial-and-error experience let

me digest the data many times in different ways that I was able to recognize the potential of this theme when I came across it in the end.

The deskwork is as much about disciplining the emotions as about developing techniques to discover appropriate storylines. The dual awareness of local members and academic audience is present during fieldwork, but becomes "overt and insistent" in the writing phase (Emerson *et al.*, 1995). The deskworker now needs to present the culture as observed in a way interesting to the academic colleagues. Just as the desire to be accepted by the informants overwhelmed me during fieldwork, the need to be acknowledged by fellow academics became irresistible during deskwork. On both occasions, the fear of rejection is overpowering.

A nice confessional tale about the fear of writing is presented by Pamela Richards in her letter to Howard Becker (Becker & Richards, 1986). She incisively explained why she could not start her drafts by doing freewriting (simply write down anything that comes to mind). She analyzed how the thought of having rough drafts makes her panic – her fear of being looked down upon by colleagues, earning a bad reputation from peers, being evaluated as stupid by senior colleagues, even the possibility of negative impact on one's career and promotion. The most frightening is the self-criticism of being a fraud, a phony scholar. In a cabin in the woods, she dreamed of receiving comments from a close friend on some early drafts:

> She was *angry* with me, and the comments were scathing. They went on for page after page: "This is absolutely the stupidest stuff you've ever written.... How could you say such things? [...] What's wrong with you, haven't you any sense at all?... This is nothing but bullshit...."[...] Naturally I began to cry – silently, with the tears running down my face. [...] I felt terrible. Betrayed, perhaps, but mostly as if I had let her down. I felt that I had failed to measure up to what she expected of me, and that this preliminary work had somehow demonstrated that I was a shit – intellectually, personally, politically, and morally. (p.111)

She went on to explain why writing presents a big risk,

> Sitting down to write is risky because it means that I have to open my self to scrutiny. To do that requires that I trust myself, and it also means that I have to trust my colleagues. By far the more critical of these is the latter, because it is colleagues' responses that make it possible for me to trust myself. [...] God, it's hard to trust colleagues. There's more at stake than simply being laughed at. Every piece of work can be used as evidence about what kind of sociologists (and person) you are. Peers read your work and say, "Hell, that's not so bright. I could do better than that. She's not so hot after all." (And, by extension, they decide that your public act of sociologist is fraudulent.) (p113-114)

Thoughts like these are too often experienced but rarely made public. Returning to the academic world is a re-socializing process that heightened my scholarly role. The expectation, norm, pressure of that world become increasingly salient. It is easy to lose sight of the people and problems in which I immersed myself during the fieldwork period. Presenting scholarly competence and relating to other research become a primary concern, sometimes in danger of trumping initial commitments to the world of the field. As Pamela's confessional letter demonstrates, all the fearful thoughts are about what the writing says about the writer as a scholar. None of them concerns what the text says about the informants, what kind of people they are and what life they live.

Fieldworkers are frequently warned against "going native" in the field. That is the danger of losing the outsider stance and independence in thinking, interpreting, and evaluating the daily trivia in the field. It seems that a warning against going native after returning to the scholarly home would be appropriate as well. Too much concern with us as scholars writing for our reputation can be paralyzing. It may hijack the stories from the field. It may lead to our inability to write at all. Emerson and his colleagues (1995) offer advice on dealing with the dilemma. They write,

"In producing an ethnography for wider audiences, fieldworkers are constantly pulled by conflicts between representing some indigenous world and its meanings and making their own experiences with that world speak to the very different concerns of scholarly readers. In creating a finished ethnographic story, the ethnographer self-consciously orients toward the latter; in regularly returning to his fieldnote record and to the memories bound up with and evoked by this record, he is again and again reminded of the former" (p. 208-209).

A Traveler Between Worlds

As Van Maanen (1988 p.4) succinctly puts it, "Ethnographies join culture and fieldwork. In a sense, they sit between two worlds or systems of meaning – the world of the ethnographer (and readers) and the world of cultural members. Ethnographies are documents that pose questions at the margins between two cultures." In doing ethnography, the researcher is engaged in two conversations. The end product of a written ethnography is surely a point of discussion between the author and her academic colleagues. It is subject to their evaluation for its significance, novelty, and validity. At the same time, it also opens a dialogue with the informants. The observed must live with the observer's interpretation of their life and the observer must live with informants' criticism of her work (Gusterson, 1995).

After all, the ethnographer is a traveler between the two worlds where allegiance systems differ significantly. Some balance is needed in both phases of fieldwork and deskwork. But establishing a priority, one's allegiance to the people in the field or to those residing in one's scholarly home, is a struggle left for each ethnographer alone.

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