



# Intersectionality and professional work in the life sciences: Constructing identities on the basis of affirmation, dis-identification, and professional distancing

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## abstract

Intersectionality theory has primarily informed studies of how socially subordinate groups are bundled together into larger and more imprecise categories and how they consequently suffer from inadequate organizational practices. The general proposition of intersectionality theory, which holds that social identities and subjectivities are composed of heterogeneous and at times even contradictory and/or colliding elements, leading to fragmented yet coherent, or at least functional, subject-positions, is applicable to a broader set of actors and organizational settings, including professionals and elites. A study of life science researchers at small-sized life science companies demonstrates that this group operates in a domain that includes a variety of norms, beliefs, and practices, deriving from adjacent institutional domains and organizations, and that the members of this group craft images of themselves on the basis of combinations of recognition and dis-identification and of distancing themselves from, for example, academic research institutions, the so-called big pharma, and innovation system agencies. An intersectionality theory view thus invites a more detailed understanding of how professional identities and their ethos are constructed on the basis of heterogeneous resources and existing institutional and organizational arrangements, in turn having implications for, for instance, life science innovation.

## Introduction

Unlike many other theories addressing the inherent instability of late-modern subjectivity, rooted in either the psychoanalytical literature and then, most

importantly, the works of Jacques Lacan, or derived from a post-structuralist analysis of the subject, first articulated by Nietzsche in the late Nineteenth century and championed by theorists such as Michel Foucault, Gilles Deleuze, Luce Irigaray, and Jacques Derrida, the concept of intersectionality is rooted in legal theory and law enforcement on basis of court ruling. The American legal theorist Kimberle Williams Crenshaw (1994: 3) coined the term ‘intersectionality’ in the 1980s to enable the more elaborate analysis of how, for example, race and gender constitute ‘multiple grounds’ for individual identities. At the same time as Crenshaw was calling for this multidimensional analysis of identity work, she was also warning against turning the concept of intersectionality into ‘some totalizing theory of identity’. Instead, intersectionality is advanced as an analytical concept that invites a more detailed examination of how parallel or interfering identities are combined, negotiated, and reconciled within an individual’s, or a group of individuals’, identity work, their active construction of themselves as ethical and accountable subjects within a social context and a social world (Collins, 2015). Crenshaw (1994) explicitly recognized the socially subordinate or vulnerable positions of, for example, minorities or women in the court system; consequently, much of the intersectionality literature has emphasized how such groups actually embody and represent substantial heterogeneity.

While this one-sided focus on socially vulnerable and even subaltern groups has benefitted, for instance, organization studies, inasmuch as a series of managerial problems and malpractices regarding, for example, sexual harassment (Hearn and Parkin, 2001), discriminatory recruitment procedures (Rivera, 2012; Philips, 2005; Ridgeway, 1997; Martin, 1994), gender- and ethnicity-biased economic compensation (Castilla, 2015), inequality in economic compensation (Bell and Van Reenen, 2013; Osberg and Smeeding, 2006; Alderson and Nielsen, 2002), and so forth, the role of professionals and elites has only been subject to cursory intersectionality analysis (for an exception, see Kelan, 2014). A critical literature emphasizes some of the difficulties involved in the analytical use of the intersectionality concept (Marfelt, 2016; Nash, 2008), including the lack of a robust methodology and the strong emphasis on examining the identities of ‘oppressed groups’, among which black women are widely understood to be a particularly vulnerable social group (Nash, 2008). Furthermore, Marfelt (2016: 32) emphasizes the tendency to overstate ‘oppression’ as a justification for intersectionality studies, something that is in turn rooted in normative political programs aimed at promoting social and economic equality. To further reinforce intersectionality studies as a legitimate theoretical framework, Marfelt (2016: 32) advocates an empirically-grounded methodology that ‘does not give primacy to oppression’. Following this more critical view of intersectionality studies, it may be the case, *arguendo*, that use of the term intersectionality implies a focus on socially-subordinate groups and their difficulties when it comes to acquiring

socially-desirable positions and other benefits (Burman, 2004). On the other hand, the actual term intersectionality, when understood outside of the legal system and legal theory, and denoting that all human identities and subject-positions are of necessity composed of diverse elements, invites a broader range of intersectionality studies.

On the basis of this proposition, i.e. that the concept of intersectionality lends itself to a wider set of research interests than merely examining socially vulnerable groups and advocating reform on the basis of such empirical data (Marfelt, 2016; Nash, 2008), this paper will examine how a particular professional group can be understood on the basis of this conceptual framework. Studies of professionals, or even elite professionals (e.g., medical doctors, scientists, financial traders, executives, judges, lawyers, and barristers, etc.; see Rivera and Tilcsik, 2016; Rivera, 2012), is a major field of research in the social science literature (Leicht and Fennell, 2001; Freidson, 2001; Brint, 1994; Larson, 1977); however, there is a shortage of studies of professionals on the basis of intersectionality theory. Therefore, this article will report on how scientists working in venture capital-backed startups in the life science industry operate in a domain lying at the intersection between major multinational life science companies (pharmaceutical companies and medical technology and device companies), academy, and state-governed innovation agencies. When inhabiting this domain lying ‘in-between’ various institutions, life science professionals construct identities that bridge and bond various elements of these institutions and their operative logic, thus becoming ‘intersectional subjects’ who endorse and reject different components of these ‘ideal’ institutional logics. Being ‘betwixt and between’ (e.g., Garsten, 1999), these scientists are neither part of the institutional structure of academic university research nor protected by the financial strength and hierarchical benefits of the major ‘science businesses’ (Pisano, 2006), instead needing to find their own way when pursuing the development of a new drug, or a new medical technology or device. In order to support and provide these kinds of life science companies with an institutional structure, many national and regional governments have invested substantial resources in building innovation systems, including, for example, incubators, science parks, business counselling services, entrepreneurship education programs, and so forth (Keller and Block, 2013; Niosi, 2011; Cockburn and Stern, 2010). This innovation system is at times hosted and co-developed by universities; however, in other cases, it is constructed as an independent organization. Unfortunately, at least in the case of Sweden, and as the empirical data will demonstrate, scientists at small-sized life science firms do not identify with this innovation system as they regard it to be overtly bureaucratic, as well as incapable of understanding the life science innovation and commercialization process and riddled with inconsistencies deriving from its

politically-motivated objective of creating jobs rather than economic value. Drawing on intersectionality theory, the study shows that scientists employed by small-sized science life firms believe that they inhabit a zone wherein their issues and concerns are not sufficiently understood, nor practically handled. Besides contributing to the literature on intersectionality in organizations, the research findings also have important policy implications regarding how to support and finance life science venturing in the contemporary economy.

The remainder of this paper is structured accordingly: First, the concept of intersectionality and intersectionality theory are examined. Thereafter, the methodology of the study is accounted for. Third, the empirical material is presented, paying attention to how elite professionals enact diverse identities for themselves in the periphery of professional fields (see, for example, the *ephemera* special issue on 'Professions at the margins'). Finally, some practical and theoretical implications are addressed.

### **Intersectionality and the analysis of professional work**

Social theory strongly emphasizes how modernity has imposed the burden of self-reflexivity upon the late-modern subject. No longer living in a society characterized by stable and widely agreed upon norms, beliefs, and sources of reliable know-how and expertise, the late-modern subject is constantly expected to execute sophisticated forms of self-reflexivity (Giddens, 1990), to critically engage in the self-assessment of individual preferences, beliefs, and accomplishments. At the same time, in a highly-differentiated society dependent on specialization and the division of labor, the individual is simultaneously entangled and co-produced with existing and meaningful social relations, thus making the late modern subject a paradoxical figure who must constantly be relating him- or herself to the exteriority while individual responses to such external stimuli and impulses should be understood, simultaneously, on the basis of self-reflexive practices and self-discipline (Ridgeway et al., 2009; Kondo, 1990). For George Simmel, the great theorist of the cosmopolitan, modern subject ( e.g., Simmel, 1971), encountering a ceaseless flow of impressions and information, 'the modern individual' is 'sociologically determined' by the groups 'intersecting his person by virtue of his affiliation with them' (Simmel, cited in Coser, 1974: 2). This idea of the subject as socially constituted dominates social theory and renders the late-modern subject as something that is always constituted already at the intersection of various social relations.

However, this enactment of the self at the crossroads of social relations does not downplay the role of agency. As, for example, Granovetter (1985: 487) says, 'actors

do not behave or decide as atoms outside of social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations' (e.g., Adib and Guerrier, 2003; Kondo, 1990). This generic sociological proposition, i.e. that agency is rooted in systems of social relations, has been subject to various theoretical elaborations and amendments. The concept of intersectionality, for instance, is related to an epistemological discussion regarding the nature of the subject *qua* an autonomous, cognitive entity, while simultaneously addressing relatively straightforward legal and practical (i.e., managerial) problems (Collins, 2015; Walby et al., 2012; McCall, 2005). In contrast to the conventional view, whereby gender, race, class, and sexual preferences are understood and examined as compartmentalized qualities or social identities, the concept of intersectionality explores how these categories 'mutually construct one another' (Collins, 1998: 63). That is, rather than examining the subject in terms of one-dimensional features, separated into distinct theoretical frameworks, and, by implication, legal theories and juridical practices, the subject is understood from the outset as a bundle of diverse and at times even contradictory qualities and preferences, co-aligned and coexisting within the subject's everyday life (Collins, 2015). As each such defining and socially – and legally – relevant category is seen as being 'fluid, historical, and situationally contingent' (Browne and Misra, 2003: 489), the concept of intersectionality invites theorists and researchers to take a multidimensional view of the subject. In advocating such a view, it is possible to address the actual or latent conflicts existing between different sources of identity (e.g., gender vs. class, race vs. sexual preferences, etc.). Ultimately, claims Braidotti (2006: 62), the concept of intersectionality is helpful because it is an attempt to '[e]ncompass the multiple grounds of identity in a discussion about power-relations', while simultaneously maintaining the '[p]ost-structuralist insight about the multi-layered structure of identity within each singular subject'. That is, proposes Braidotti (2006), intersectionality as a concept and a theory is practically helpful in the advocacy of social reforms and new legislative practices while still recognizing, even affirming, the underlying theoretical complexity of the late-modern subject.

### *Intersectionality theory as an analytical tool*

Based on these benefits, and supported by Crenshaw's (1994) claim that intersectionality should not be used as a new 'totalitarian' theory of the subject, the work of life science professionals will be examined, located in the intersecting zones of the existing institutional framework developed over time to promote life science research, innovation, and, more recently, venturing. When expanding intersectionality theory and scholarship to include professional groups, it is

important to recognize how intersectionality theory examines any subject that spans extant category boundaries, and not only those defined by, for example, gender, race, and class theories, i.e. categories subject to discrimination legislation, law enforcement and otherwise regulated by social norms. First of all, the life science professionals examined below are by no means members of any subordinate or subaltern groups as they are all highly educated (in many cases holding PhDs in, for instance, medicine or biochemistry and related disciplines) and widely respected, generating political interest and administrative support and being able to benefit from a growing international labor market where their competence and skills are highly valued. To that extent, life science professionals do not belong to the core group primarily targeted by intersectionality scholars, instead being frequently pigeon-holed in other analytical categories. At the same time, since intersectionality theory is concerned with understanding how the transgressing of defined boundaries imposes additional burdens and various costs on individuals, the theoretical framework is supportive of the study of professional workers who move between, for example, academic research institutions and industry. In other words, to further substantiate intersectionality theory, new analytical categories, such as academy-based versus industry-based professional work, can be included in the theoretical framework. As a consequence, intersectionality theory can contribute a meaningful analytical model that sheds light on how categories tend to discipline individuals into conceiving of themselves in mutually excluding and singular terms rather than under multiple categories.

Much intersectionality theory, and its practical use in empirical studies, has emphasized that analytical categories such as social class, ethnicity, or race are entangled with identity-construction. In many cases, such categories are used during analysis to emphasize how these categories are associated with subordinate social positions. For instance, in the case of social class, an individual from a working class background may feel uncomfortable with or excluded from, or may even be angered by, the intricate ceremonies and rituals of, for example, British elite tertiary education institutions (Dacin et al., 2010), leading to the concern that the individual may simply not 'fit in' at the intersection of elite education and working class identity. In contrast, in the present study, the term intersectionality is used to denote how a professional group of life science workers create identities on the basis of their experience of being in-between the existing institutional structures of, for example, the firm and the university system. As opposed to groups that are in a subordinate position as regards social class, ethnicity, or race, the life science professionals do not believe, by and large, that they are socially disfavored or excluded from certain communities or positions; yet, their identities are bound up with their location at the intersection between the cut and thrust of business and the scholarly inquiry of the academy, while not fully identifying with either field but cobbling together identities on the basis of association with the two

fields. In constructing such hybrid identities, life science professionals encounter a series of concerns which they need to practically deal with and which thus inform and structure their identity work. For instance, life science professionals employed at small-sized, venture capital-backed companies suffer from an endemic shortage of venture capital, the lack of qualified institutional support by the innovation systems that have been developed to cater for such ventures, and which share few of the qualities of, for example, the major pharmaceutical companies with which they are frequently compared. Taken together, these factors and conditions leave this group of life science researchers with a sense of it largely being down to them, and to their colleagues' own capacities, to handle emerging problems and challenges, at best encouraged by politicians and policymakers from a distance, but unfortunately also lacking both expertise and an understanding of what actions to take to support life science venturing.

Intersectionality theory thus offers analytical advantages that either competing or complementary concepts (e.g., institutional logic theory, identity theory, theories of power, communication theories) do not offer inasmuch as it connects identity work on the level of the individual, the professional group, or the community with the wider institutional and economic context, albeit without bestowing a final, homogeneous and coherent identity on part of the subject. Furthermore, as opposed to, for example, intersectionality studies of subordinate or subaltern groups, suffering from exclusion from, for instance, the circulation of capital and political power, the use of intersectional theory in the study of elite communities (wherein life science professionals should be included) actively recognizes that such communities do access key resources to pursue defined ends but does not equate the access to such resources with identity work. Instead, identities are constructed to accomplish various objectives (e.g., in the current case, to secure scholarly prestige, to land the next research grant, to factually add to a joint body of research work, or to provide attractive investment opportunities for external parties); these identities are thus, at best, transient and fluxing, constantly being adjusted to bridge and bond what the individual considers to be significant conditions determining day-to-day work. Seen in this light, intersectionality theory is a dynamic and situated analytical model that lends itself to empirical investigation and testing.

### *On life science venturing*

The life sciences are a transdisciplinary field of research which includes advanced expertise in microbiology, biochemistry, experimental medicine, pharmacology, and material sciences and which spans public and private sector organizations, including research universities, major pharmaceutical and medical technology conglomerates, small startups, and university spin-outs. The life sciences provide

the basic research findings for health innovations; since the 1960s, investment in R&D in the life sciences has expanded greatly. Today, the life sciences account for more than 60 percent of all academic R&D expenditure (Cockburn and Stern, 2010). The health care industry, i.e. the primary beneficiary of life science research and health innovations, accounts for 13 percent of the United States' \$10 trillion annual budget (Clarke et al., 2010a). In the general tendency to capitalize on basic research work, the university system has actively been encouraging forms of academic capitalism and academic entrepreneurship and enterprise (Berman, 2012; Haeussler and Colyvas, 2011; Colyvas and Powell, 2007; Stuart and Ding, 2006); an extensive body of research demonstrates that basic research and commercialization processes jointly constitute an intricate network of relations, collaborations, and exchanges that serve to produce, for example, new therapies and medical technology (e.g., Powell et al., 2005). In this network of relations and exchanges, the small-sized life science venture plays a key role as a vehicle for commercializing promising research findings. One of the principal challenges facing these types of professional firms is securing venture capital funding for their R&D work, the costly clinical trials in particular (Hochberg et al., 2007; Wright et al., 2006), and recruiting qualified commercial human resources, including executives and directors (Garg, 2013). However, as venture capital investment is a most complicated activity, especially in the unpredictable life sciences where it is complicated to predict the outcomes of clinical trials using, for instance, in vivo animal models, there tends to be an endemic shortage of venture capital for this category of firm (Rider and Swaminathan, 2012). As a consequence, many life science firms are working in the shadow of a finance capital drought, tinkering with a combination of research grants, government agency funding, and the occasional inflow of professional venture capital investments. It is within this institutional framework that the small-sized life science firms and their employees need to be understood in terms of being, on the one hand, venerated contributors of health innovations but, on the other, actors having a hard time identifying finance capital owners and convincing these to commit their funds to development and commercialization work.

### *Operationalizing intersectionality within life science venturing*

In order to operationalize the wide-ranging and thus relatively imprecise concept of intersectionality, and to make it a useful analytical term when examining, for example, life science professionals, it is postulated that professional identities (here a proxy for and a precursor of actual operative practices and day-to-day work routines) are understood in terms of being constituted within the institutional framework where the agent works and pursues a professional career. That is, institutions, as well as the institutional logic they recursively represent and operate upon, create the opportunities for professionals to develop and maintain identities



that bridge and bond different institutional logics. In addition, such ‘intersectional identities’ are based on processes of identification and ‘dis-identification’ (Elsbach and Bhattacharya, 2001) whereby the actor (i.e., the life science professional) both endorses and rejects elements of the available institutional logics in order to create a meaningful and serviceable professional identity. The empirical material reported on below reveals that life science professionals working at small-sized, venture capital-backed firms engaged in a process of identification with certain values, norms, and beliefs existing in the different life science organizations, and in a process of dis-identification, defining themselves primarily in negative terms, i.e. what they were emphatically *not*. The professional identities of the life science professionals were thus simultaneously based on both positively identifying with certain values and norms (i.e., the norm of contributing to ‘the common good’ in academic research communities, and being committed to turning research findings into profitable ventures and products within industry) and negatively rejecting other values and norms (i.e., the bureaucratic and formalist understanding of life science venturing within the innovation system agencies, the highly individualized career-making of the academy).

‘Negative identification’ is not uncommon in professional work. Clegg et al.’s (2007) study of business coaches shows that this new professional category defined itself as something entirely different to the management consultant; Cohen et al. (2005) discuss at length how architects regard themselves to be creatives with refined aesthetic sensibilities and know-how, even though they actually handle a substantial amount of routine work. Similarly, studies of, for example, residents-in-training show that so-called ‘scut work’ – paperwork and other types of menial tasks which the residents deemed to be below their skill – levels and thus in violation of their identity-work – served as a source of dis-identification (Pratt et al., 2006: 245). A similar attitude was observed by Ho (2007) in the finance industry, where highly-qualified elite university students were hired to conduct so-called ‘grunt work’, (basically the finance industry term for health care scut work), i.e. repetitive and not very creative or analytically demanding duties, thus serving to distance this category of newly-hired employees from the notion that Wall Street is a glamorous and exciting employer. In addition, dis-identification was also an important practice for, for example, women and minorities, who were anxious not to be mistaken for administrative staff. Ho (2009: 118) reports having ‘[h]eard many stories of women who have avoided standing near coffee spouts for fear that men will mistake them for administrative assistants and ask them to help with the food and pour coffee’.

To better illustrate this dynamic between processes of identification and dis-identification, the research work of Vallas and Kleinman (2008) and Fochler (2016) can be referenced. Vallas and Kleinman (2008: 288) argue that an analyst

should recognize how ‘multiple organizational logics coincide’ and how this leads to ‘hybridity and contradiction that generate ongoing tension, conflict and internal debate’ in the day-to-day work of, for example, life science professional communities. For instance, the tension between academic research, and its emphasis on scientific authority and prestige, and the life science industry’s emphasis on collaboration in order to generate, for example, patents, income, or venture capital investment, creates a sense of hybridity in the life science field. Vallas and Kleinman (2008: 288) speak about a ‘two-way cultural traffic’ between industry and academy, so that ‘academic norms are adopted in firms in the service of corporate profits, and universities adopt corporate practices most frequently in the interest of improving the legitimacy they enjoy, whether in the public’s mind or in the market for prestige within higher education’. That is, rather than being polarized into a ‘pure’ or ‘ideal’ academic institutional logic based on scientific contributions aimed at benefiting mankind, and a more ‘real’ or ‘profit-oriented’ industry institutional logic, these two cultures were mixed up and blended in step with academic institutions increasingly emphasizing revenues and industry stressing academic prestige and collaborative efforts. In other words, life science professionals inhabit an industry where institutional logics are increasingly interacting and becoming mixed up.

In the case of the Swedish life science professionals, not only academy and industry but also the state-controlled innovation system (including, for instance, regional incubators, university-based holding companies, and public venture capital investors) represented institutional logics that life science professionals partially recognize and partially reject in order to construct meaningful, yet to some extent fragmented, professional identities. In other words, operationalization of the intersectionality concept assumes that domain institutions (i.e., industry, academy, state-controlled innovation system agencies) inform and shape professional identities and professional work. For instance, what is referred to as ‘second-order concepts’ (Van Maanen, 1979) in the methodology section below, i.e. concepts that are not derived from the empirical material but serve instead to connect diverse empirical data with the available theoretical frameworks (e.g., intersectionality theory), embody these institutional conditions. Consequently, the empirical section of this paper is structured into three sections wherein the interviewees discuss and relate their own professional work to the three institutions of the academy (the first Section), the life science industry (at times addressed using the slightly derogatory term ‘Big Pharma’) (Section Two), and state-controlled innovation systems (Section Three). This analytical strategy, discussed in more detail below, is a viable approach to lowering intersectionality theory to the level of day-to-day activities and professional identity work.

## Methodology

### *Design of the study*

The empirical material presented in this article derives from a research project exploring new forms of organization in life science innovation. The study is based on a generic case study methodology (Gibbert et al., 2008; Gerring, 2004; Gillham, 2000; Stake, 1996) in which the case is the Swedish life science sector, in itself best depicted as an organizational field (e.g., Mazza and Pedersen, 2004; Leblebici et al., 1991) or as an institutional field (Purdy and Grey, 2009; Greenwood et al., 2002) that includes research universities, multinational life science companies, small-scale life science ventures, governmental and regional innovation systems, and venture capital investors. The study did not explicitly ask the interviewees about their identities and career choices, instead being aimed at mapping more broadly the changes and challenges facing the life science industry and venturing. Still, the interviewees explained their own interests, motivations, and careers in terms lending these passages of the interviews to intersectionality analyses.

### *Data collection and analysis*

Interviewing was the principal data collection method used within the case study model (Kvale, 1996). This data collection method has been aligned with the theoretical question of difference (e.g., Dunbar et al., 2003) and used practically during previous intersectionality studies (see, for example, Kelan, 2014; Boogaard and Roggeband, 2010). That is, the interviewees were asked why they had chosen to work at a small, startup life science company rather than pursuing an academic career or applying for a job at a major life science company generating its own cash-flow and becoming listed. Such questions were based on the implicit assumption that the interviewees had consciously rejected these potentially 'safer' careers to acquire certain benefits and experiences that these organizations were less capable of providing. In other words, the interview subjects were explicitly portrayed as part of a category of life science professionals who appreciate and value an enterprising culture and an 'entrepreneurial' way of life. The interviewees were also asked to list the pros and cons of conducting professional work at this type of organization.

The interview guide, which was designed *ex ante*, was semi-structured and enabled follow-up questions in order to further develop ideas and arguments. Despite the initial proposition regarding the preference on the part of the interviewees for an entrepreneurial way of life, the interviewing practices shared much with what Spradley (1979) refers to as an 'ethnographic interview', i.e. less concerned with affirming a predefined theoretical model but actively engaging with the life-world

of the interviewees, leaving much room for their own storytelling (see also Quattrone, 2006). The ‘professional stranger’ research model advocated by Agar (1996) encourages researchers to enter the field with an open mind, leaving significant space to apprehend what Becker (2009: 548) speaks of as ‘unexpected observations made in the field’.

The study included more than 40 life science professionals, of whom the bulk were employed by small-sized life science companies and some of whom had actively developed new therapies, while others had served as experts and analysts within the life science field. All the interviews were conducted by one or two senior researchers and were tape-recorded (after the interviewees’ consent had been obtained), and lasted for around one hour. The sample included an approximately equal amount of men and women spanning the ages late 20s to mid-60s. All the interviews were transcribed by a professional writing bureau and coded by one senior researcher, starting with categories derived from the interview data.

During the second round of coding, interview excerpts were co-located into joint empirical categories. During the third round of coding, ‘second-order concepts’ (Van Maanen, 1979), i.e., theoretical concepts derived from the research literature (as discussed in the section above and rooted in the notion that different life science institutions rest on different institutional logics and related practices), were used to structure the empirical data. These second-order concepts were finally used to emplot the empirical material into a narrative about the professional identities, attitudes, and beliefs pertaining to a career in the life sciences.

### **Life science researchers at the venture capital-backed firm**

The interviewees largely testified to their commitment to the career choices they had made and pursued, articulating few regrets over not staying in the academy or embarking on a career at some large-scale corporation. In addition, some of the interviewees also argued that what they were trying to accomplish was not easily understood by outsiders. In fact, at times, the researchers themselves did not always understand exactly where to move next and how to map the entire process they were conducting. Therefore, life science innovation work remains highly opaque to outsiders and is thus also complicated to support – politically and financially. Said one interviewee: ‘There are many [politicians or sponsors] who speak a bit [about the industry] and raise a few concepts that sound convincing, but it’s complicated to fully understand what the life science industry is and what it needs unless you work in it. It’s a fairly abstract field’ (CEO, biochemistry analysis company). In fact, one of the researchers, who was developing a new drug, argued that new drug development was the ‘ultimate intellectual challenge’ and

that this kind of development could poetically be described as ‘wandering around a dense forest’, looking for a path into open fields (i.e., discovering the biochemical processes of the compound). While the innovation work is beset by these cognitive and communicative difficulties, life science innovation is a form of elite dependence on an unforgiving finance market whose actors shop around for new and promising investment objects. In this industry, there is little room for ‘blue-sky research’ or nostalgia over past scientific accomplishments, it is the results that matter: ‘At some point, someone always says “show me the money!”’ remarked one startup CEO. The life science innovation field is largely defined by its access to finance capital; as there is an endemic shortage of venture capital, the life span of the life science company is short: ‘A unique characteristic of this business is that most companies die off very quickly, their projects just crumble’, said one private venture hub coordinator.

In this life science innovation field, there are at least three major institutional structures that influence and define both the activities and the organizations’ relations of importance to life science researchers. These are the academy and the university system, the existing life science industry, and the pharmaceutical and medical technology and device industry in particular, and the so-called innovation systems, which are all in their own specific ways different from the small-sized life science companies at which the interviewees worked. These three institutional structures will be discussed in what follows.

#### *The academy and university-based life science research*

While the researchers had strong academic credentials, many of them having spent some of their careers within the university system, there was also widespread skepticism regarding both the academy and what was regarded as a cloistered and inward-looking culture primarily emphasizing the publishing of academic journal papers over practical contributions and other benefits. Many of the interviewees asserted that they held academic research and scientific methods in esteem, but they also deplored the parochial culture of many life science departments at their university. One regulatory affairs manager at one of the companies said that firms needed to distance themselves from the academy in order not to discourage presumptive investors and partner companies, who were naturally skeptical about being lured in to fund basic research that had limited commercial potential:

There can’t be too much ‘science’ in [the firm’s projects]. Then we’ll have too much of an academic connection and that’s what we’re always trying to get away from. In some sectors of the pharmaceutical industry, that has positive connotations, but in [our field of research] and so on, there have been an astonishing number of academic ideas that have led nowhere. So, with strong academic connections, you will not be taken seriously by the [partner] companies. (Regulatory Affairs Manager, Life Science Company 4)

More specifically, the lack of know-how and understanding within the academy as regards the difference between basic research and the commercialization of research findings was a source of irritation among the interviewees. One of the researchers was tired of the argument that ‘good science transforms itself into products’; in her view, an overtly naive and ignorant attitude that academic researchers aired from time to time:

There’s a naive attitude within the academy suggesting that if you only have the know-how, there will always be someone that can create a product. This idea simplistically suggests that if just the idea exists, then roughly 90 percent of everything will have been solved. (Scientist and Regulatory Affairs Officer, Life Science Company 1)

This lack of understanding was at times also accompanied by a condescending attitude vis-à-vis commercial interests and practices. The researcher exemplified this by referring to a conversation she had had with one of her professors after filing a patent while still working at a university department:

When I filed this patent... I had this appraisal interview with my professor, and I said ‘I have this patent and it feels great, and now’ and blah, blah, blah. And then I said, ‘I believe this is a merit!’ And he replied, ‘Well, I suppose all of us have a few good ideas every now and then.’ Such was the level of the conversation. (Scientist and Regulatory Affairs Officer, Life Science Company 1)

Another interviewee, the CEO of a life science company, cited the bureaucratic and risk-averse culture of the academy as an impediment to fruitful collaborations. Working at a private company, running a laboratory in collaboration with a major research university, there was suddenly a concern that the public-private collaboration model violated some of the legal statutes of the university, leading to a stalemate whereby the university was unable to handle the situation, in turn leading to much additional work and accompanying frustration. In the eyes of this CEO, the lack of interest in industry and the commercial aspects of life science work was blocking a meaningful solution to the perceived problem:

On the grassroots level, everyone agrees this model works, but it’s the decision-makers who do not have the nerve to make a stand... What they indicate is that companies mustn’t collaborate with the university because, in the university system, there’s no knowledge at all about how to handle these issues. (CEO, Life Science Company 2)

While this CEO understood the concern regarding the risk of corruption when taxes were to some extent funding a private firm, he still argued that the university directors had failed to see the wider picture, again testifying to the inward-looking focus of the university directors and their lack of an enterprising ethos.

Taken together, the university system was one of the principal sources of life science research, but academic researchers had demonstrated little interest in, or understanding of, the work conducted by small life science companies. As a consequence, the interviewees distanced themselves from the universities and their career-planning, which centers on journal publishing and similar academic credentials rather than on commercial interests.

*The pharmaceutical and medical technology and device industries*

In contrast to the academy, which is largely financed by either government funding or endowments, the life science industry operates on the same health innovation markets as small-scale life science companies. After decades, or even centuries, of operations, pharmaceutical companies have acquired a strong market position, holding numerous patents and other IPRs that enable these companies to generate their own cash-flow to finance ongoing and future R&D activities. While most major pharmaceutical companies are today listed and thus responsive to investors' and shareholders' performance expectations, representatives of small-scale life science firms regard these multinational and divisionalized corporations as entirely different types of organizations to their own. For instance, one of the management consultants, an expert in regulatory affairs and experienced in recruiting directors from large corporations to sit on the boards of small firms, pointed to the significant differences in attitude between the two categories of life science companies:

In many cases, [incubators] hire their boards from these companies, including some hot-shots from some of the major Swedish pharmaceutical companies, or who have been CEOs someplace. But these people have rarely worked hands-on at this kind of [small-scale, startup] company... They're used to having all these service staff who take care of everything, so [these directors] can't help these companies. They can perhaps ensure that there is financing on the basis of their previous contacts [in the industry]. But it doesn't help to have money unless you're doing all the right things, if you're taking a long-term view. (Life Science Consultant, Life Science Company 3)

Generations of managers, trained and socialized to think like Big Pharma representatives, were poorly equipped to advise small life science companies how to manage their very limited economic resources. Worse still, in many cases, it was people with most of their careers behind them who were being asked and were agreeing to sit on the boards of startups, in many cases further complicating the development of these firms as these directors were ill-adjusted to 'small budgets' and not fully informed about the most recent changes to the regulatory frameworks: 'Sometimes, they hired someone who knew the regulatory framework quite well 20 years ago, but that is constantly changing. So what they need for these early-stage companies is an entirely different board of directors,

directors who are more *au fait* with the field' (Life Science Consultant, Life Science Company 3).

The small-sized life science company representatives were also aware of the faltering innovative capacity of Big Pharma, leading to increased levels of concern, or even anxiety, within the industry regarding the next generation of blockbuster drugs that would finance future R&D work. Explanations for this declining level of innovativeness were to be found in more complex therapeutic needs, e.g., neurodegenerative diseases and cancer, more complex regulatory frameworks, the sheer size and the bureaucratic decision-making procedures of large-scale corporations, but also in the short-sightedness of the quarter economy and its orientation toward the liquidity preferences of shareholders. One of the interviewees referred to Big Pharma companies as 'colossi', arguing that they were managed entirely differently than small-sized companies. Taken together, few of the interviewees coveted employment in these corporations, while many of the researchers had previously gained work experience at such firms or had even actively applied for jobs outside of these companies. The interviewees identified with these companies in terms of their ambition to actually produce commercial products responding to market needs, but they also saw more similarities with other small-scale companies in, for example, the creative industries (e.g., video game companies, computer design companies, and the like).

#### *The national and regional innovation system*

Last but not least, and perhaps the most troublesome from an innovation policy perspective, the small-scale life science company representatives were quite skeptical regarding the role of the innovation system, i.e., the various incubators, science parks, business counselors, and so forth, all existing to actively support and fund life science ventures. A standing criticism, not entirely different from that leveled at the academic research community, was that the innovation system agencies were governed by their political goals and largely incapable of adding value to the existing life science companies. One of the CEOs, with substantial experience of the industry, both in the academy and in the pharmaceutical industry, exemplifies this criticism thus:

The innovation system costs a certain amount of money, and I suggest that roughly half of that money is spent on keeping the system rolling, in order to support itself. So, it's a nice way of keeping lots of people employed. Sure, they can make some contributions, but they're not doing very much good for those they're supposed to be supporting. (CEO, Life Science Company 2)

This consumption of, primarily, tax revenues was particularly problematic as the endemic shortage of capital was ignored or downplayed by the agencies; instead,



there was a tendency to provide all kinds of counseling services that were relatively unnecessary. The CEO argued:

The companies need money. They don't need advice – money is what they need. Well, some business counseling and so on is needed, to a certain extent. But when it comes to these coaches and consultants and business counselors, it's all grossly overrated. Give a company more money, that's what they need... Unfortunately, a considerable share of the money is fed into the innovation systems so they can function. (CEO, Company LSI 2)

Some interviewees even argued that the business counseling was deceptive as it encouraged life science companies to emphasize the wrong activities and outcomes (e.g., formal business plans). One regulatory affairs officer, also highly experienced in life science venturing, stressed this point thus:

When I examine the innovation system, that we've been involved in for quite some time, 10 years or so, I'm quite critical about it... There are so many who want to 'help us', but they have no idea whatsoever about *how* to help us, and when they try, they have this condescending attitude and they say 'Now, let's do this!' rather than asking us what we need. (Scientist and Regulatory Affairs Officer, biopharmaceutical company)

This inability to recognize the actual and more pressing needs of small-sized life science companies ultimately derives from most agency counselors and advisors *de facto* only having very limited experience of the commercialization of basic research findings. At best, they knew how to encourage academic researchers – in themselves highly reluctant to embark on uncertain 'academic entrepreneurship' careers as they had much to lose should they fail to acquire further research grants – to build an early-stage startup venture based on their more promising research ideas; however, beyond that goal (strongly emphasized as a legitimate performance metric for innovation system agencies, based on a belief in the virtue of 'large numbers' trickling down to become, ultimately, a handful of commercially successful companies), the agencies were ineffective in fulfilling their role within the innovation system:

Very few people within the innovation system actually do have any experience of producing [commercial] innovations... Quite often, they have this business school education, and they propose some or other model: 'This is how it works and this is how we're doing it!' etc. So they examine the model rather than the actual world. [Regarding financing] there is some money here and some money there, but you need to meet various criteria. And it takes a horrifying length of time to apply for this funding. (Scientist and Regulatory Affairs Officer, biopharmaceutical company)

One of the standing themes, when addressing the national innovation system, was interviewees making negative remarks about what is known as the 'teacher's exemption right' in national innovation policy. Unlike most other countries, where

the university employing an academic researcher is granted the ownership rights to research findings, the Swedish system instead gives the researcher him- or herself the ownership rights. This model was originally designed to encourage and promote entrepreneurial thinking and activities; however, many commentators regard the outcome of this model as being quite the opposite – i.e. the systemically-induced inability to fruitfully handle promising research findings. This policy failure also attracted relatively little political attention and thus there was a tendency among the interviewees to address political bodies and policymakers in relatively unenthusiastic terms. In short, the innovation system was more of a liability than a resource for small-sized life science ventures.

By and large, interviews with professionals working at small-sized life science firms, in many cases financed by venture capital and with a very insecure financing situation, reveal that this group of professionals is neither protected by the institutional framework of the university, where the failure to acquire research grants can be cushioned by, for example, increased teaching loads or administrative work, nor couched within the market-based framework of major life science companies capable of securing their own funds on the basis of market sales of an existing portfolio of products. Finally, the innovation system – partially co-developed with the university system via its ambition to promote ‘academic capitalism’ (Münch, 2014; Slaughter and Leslie, 1997) – was also alien to these professionals’ day-to-day work experience. At the same time, these small-sized firms and their co-workers shared with these other organizations their passionate interest in life science research, their respect for scientific methods, their interest in commercializing research findings, and so forth. That is, the life science professionals of small-sized firms inhabited a heterogeneous space, a domain betwixt and between these other organizations and institutions; they formed part of all of them but did not fully belong anywhere. Expressed differently, the identities and the self-reflexive agency of the life science professionals could best be understood on the basis of intersectionality theory.

## **Discussion**

As indicated by the empirical material, life science professionals at small-sized firms dissociated themselves from certain elements, emphasized by and within other institutions, organizations, and actors; yet, these life science professionals were intimately related to and dependent on these institutions and their norms, values, practices, and resources. These professionals thus created for themselves what Anteby (2013: 1278) speaks of as a ‘professional distance’, i.e. the separation between an actor and his or her ‘field’ on the basis of dis-identification (see also Frandsen, 2012; Fleming and Spicer, 2003). At the same time, this professional

distance from other professional domains emerged at the intersection of a variety of competing and complementary professional practices and identities, all sources of identification. Taking an intersectionality theory view, the life science professionals operated in a domain where their work, and thus also their professional identities, was crisscrossed by alternative professional practices, norms, objectives, and career choices, causing them, on the one hand, to be separated from both other institutions and their professional work, while on the other, causing their identities to be entangled with, and co-produced in relation to, these sources of professionalism. As suggested by Vallas and Kleinman (2008: 288), a ‘two-way cultural traffic’ between industry and academy (and hybrid forms thereof) creates a sense of hybridity and a feeling of being located in a meshwork where industry mimics academic institutions while academy increasingly endorses industry standards when assessing, for instance, the value of scholarly findings and contributions. As opposed to, for example, identity theory and the professionalism literature, intersectionality theory emphasizes the power underlying the widely-recognized and in many cases taken-for-granted categories used in everyday life organization and management. In this view, categories are historical and situationally contingent (Browne and Misra, 2003), serving to mutually construct one another, either through mutual exclusion (as in the case of gender) or by imposing typifications that include beliefs and assumptions regarding ethnicity or race (Collins, 1998). Identity theory and the professionalism literature are concerned with examining the use of more stable, and thus serviceable, categories in order to provide the individual with a functional image of the self, providing the ontological certainty needed to operate with integrity and autonomy within a specific field. Thus, what Braidotti (2006: 62) refers to as the ‘multi-layered structure’ of identity within each singular subject is overlooked, or only assumes, at least, a more peripheral role during analysis since such hybridity may undermine a coherent and supportive professional identity. The life scientist’s day-to-day work may appear to be uneventful and micromanaged by various standard operating procedures, from afar, but the current university governance regime and the life science industry are, in fact, under pressure to simultaneously accommodate scientifically-relevant research work and the delivery of financially-attractive investment options. That is, life science researchers are constantly refashioning an image of themselves in terms of being both academically-relevant and industry-oriented, thus oscillating between these positions to varying degrees. This in turn gives life science research scant protection from market interests and influences, interests and influences which generate a work situation characterized by precisely the multi-layered structure deriving from the power-relations that intersectionality theory not only recognizes but also makes its foremost analytical object. In other words, intersectionality theory also provides a meaningful

analytical framework for non-subaltern groups, something which also further substantiates the importance of taking an intersectionality perspective.

This research finding has implications for intersectionality theory. As, for example, Braidotti (2006) has pointed out, the actor's identity is not primarily rooted in stable and timeless essences, and/or extra-social conditions, but identities are always, of necessity, in a state of flux and change, undergoing continuous modification and adaptation and unfolding more as a *route* than being rooted (to use Clifford's, 1997, apt metaphor). Intersectionality theory thus invites the student of, for example, organizations and professional communities to actively examine how sources of professionalism and their accompanying identities and institutional logics are, of necessity, constructed in fields that are crisscrossed by diverse, heterogeneous, and, at times, even competing practices, resources, norms, and beliefs, representing a form of polymorphous 'cultural traffic', thus making the professional worker (or any other employee or actor) constantly adapt to and reconcile these heterogeneous resources. More importantly, intersectionality theory provides an interest theory of power for examining these processes, emphasizing how all these social, cultural, and economic resources, constitutive of shared categories, are established on the basis of the interests and preferences of certain groups. Intersectionality theory scholars thus not only examine the processes of creating meaningful and functional categories in society, as well as how, for example, identities are derived from such shared categories, they also conceptualize these categories *per se* as manifestations of underlying interests. In the case of the life science professionals working at small-sized life science companies, and reported on in this article, the active creation of professional identities, partially negatively in terms of what these professionals *were not*, ultimately provided these actors with the clout and confidence they needed to act within their domains of expertise and within the inherited and created institutional framework. At the same time, these choices of considering themselves in various terms were embedded into the wider socio-economic conditions in which these life scientists were operating, and on the basis of the resources mobilized to accomplish the stipulated tasks.

Based on the empirical material reported on, this article contributes to the discourse on intersectionality in two ways: Firstly, it emphasizes that intersectionality is a term applying not only to socially-vulnerable and/or economically-exploited social groups, subordinate to systemic social and organizational inequalities, instead proposing that intersectionality analyses also apply to 'elite professionals' such as scientists, executives, lawyers, etc., with each professional group embodying considerable heterogeneity inasmuch as it needs to accommodate complementary or even opposing interests. For instance, scientists need to work toward maximizing social welfare on the basis of their expertise while

paying close attention to financially interesting areas to invest in. Executives need to adhere to various forms of corporate social responsibility (which, critics contend, falls outside the expertise of executives and directors) while optimizing the overall efficiency of the resources they are deploying inside their corporations. This 'both/and' logic, conducive to the accommodation of opposing objectives, will present a challenge to professional groups if they need to bring together diverse norms, values, and skills within what is expected to be a unified and coherent professional role and identity.

Secondly, the article more specifically provides an empirical case indicating that innovation policies that emphasize professional identities (i.e., the fabrication of entrepreneurs) to the detriment of more ambitious projects aimed at securing venture capital funding for financing R&D activities can easily serve as sources of dis-identification among life science professionals working at small-sized life science companies. Taking an intersectionality theory view, dis-identification constitutes, arguably, a response from the individual facing an overbearing variety of objectives and identity-choice alternatives as regards reconciling these possibilities into an at least temporarily stable and coherent identity that renders day-to-day work meaningful. In practical terms, life science professionals are not so interested in being told what to do by innovation system agency officers who only possess – from the vantage point of the interlocutor – a limited understanding and experience of life science venturing and commercialization. Unfortunately, the interlocutors remark, the services being provided today by innovation system agencies, on an industrial basis, and in fact a cottage industry deriving from Swedish innovation policy, solve few of the practical problems encountered by life science professionals working at venture capital-backed firms. At best, such practices serve as sources of dis-identification among life science professionals, creating a professional distance from what they tend to regard as parochial innovation policies.

## Conclusion

During the late-modern period, subject-positions are not so much inherited within stable and predictable socio-economic and cultural frameworks as they are actively fabricated within the lifeworld of the enterprising individual, thus creating productive images of the self that enable agency and meaningful and corrective self-reflexivity (Braidotti, 2006; Giddens, 1991; Kondo, 1990). Since such images of the self must accommodate a variety of social relations and roles, in themselves subject to continuous change and modification, the late-modern subject is constituted as a fragmented, yet reasonably coherent, entity that integrates and reconciles heterogeneous elements. Georg Simmel argued that the modern

individual was ‘determined’ by groups with whom that individual interacted, while Collins (1998: 63) claimed that analytical categories used to construct, for example, identities ‘mutually construct one another’. Intersectionality theory recognizes this epistemological porosity of the self and seeks to unveil the heterogeneity within what common sense thinking stubbornly deems unified and fixed, and consequently unworthy of further examination (Walby et al., 2012; McCall, 2005). Such active engagement with the heterogeneity of organizational subjectivities has arguably benefitted the analysis of organizational and managerial practices and served to, for example, shed light on the issue of inequality within organizations (Boogaard and Roggeband, 2010; Philips, 2005; Ridgeway, 1997).

At the same time (and for plausible and legitimate reasons, as well as in line with the legal theory traditions within which the concept of intersectionality was first advocated), such analysis has primarily focused on historically disadvantaged groups, including ethnic minorities, women, or the elderly. But just as there is a kind of ‘downside intersectionality risk’ (i.e., heterogeneous communities being excluded from favorable positions on the basis of such grounds), there may also be an ‘upside intersectionality risk’, whereby certain professional communities benefit from being able to operate in-between predefined institutional boundaries (i.e., the large-scale firm and the academy). The study of life science professionals, reported on in this article, broadens the scope of intersectionality studies and demonstrates that ‘elite professionals’, too, navigate within domains where they construct meaningful identities on the basis of the different institutional milieus where they operate or collaborate with (e.g., Kelan, 2014). For instance, the life science professionals working at life science ventures were skeptical about the perceived ‘purity’ of academic research work (including the regulatory affairs manager who argued that ‘there can be too much “science” in development projects’), the innovation system agencies developed to support the ventures (‘The companies need money; they don’t need advice – money is what they need’, as one CEO remarked), and the pharmaceutical industry more widely (captured by the claim that many directors recruited from major pharmaceutical companies have little experience of working under budgetary constraints). Life science professionals working at venture capital-backed companies thus create identities that help them to cope with the difficulties and inconsistencies they perceive in their domains of work.

Vallas and Kleinman (2008: 288) emphasized a ‘two-way cultural traffic’ between industry and the academy, regarding the startup firm as a site where some of the best elements of two worlds were combined, i.e., it offered possibilities of working jointly with skilled colleagues to develop life science innovations, but without, for example, the disruptive decisions of finance market-oriented managers, undermining the continuity of their research work. More explicitly, such a process

of identity-making includes positive affirmations of certain norms, practices, as well as dis-identification and the creation of professional distances; professionals need to know both *what they are* and *what they aim to become*, as well as what they *are not*, and what norms and beliefs they shun or dismiss as irrelevant to their line of work (Cech et al., 2011; Schleef, 2006; Pratt et al., 2006). In this view, professional identities in, for example, life science venturing are, of necessity, hybrid, i.e., they are a patchwork of elements from different institutional milieus, yet serviceable since such identities provide professionals with agency that is conducive to the capacity to act within their field of expertise. Taken together, the study confirms and underlines the relevance of intersectionality theory in organization studies inasmuch as it represents, in Marfelt's (2016: 32) formulation, 'one small step toward bringing intersectionality into new areas', by arguing that today life scientists are far from protected by the legitimacy of academic research institutions as they need to participate in the competitive games imposed by the regime of academic capitalism. That is, life scientists need to serve the ulterior motive of not only providing intriguing and yet-to-be corroborated research findings but also of providing the finance industry with attractive investment options.

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