Chapter 9
"I'm Sorry, but It's Kind of Business." Crisis, Critique and Care in and Beyond the PhD

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Abstract In this chapter I explore the notion of crisis in academia as a form of mismatch between researchers' expectations of which values *should* govern academic work and their experiences of which values govern academic work *in practice*. I do so through the lens of postdoctoral life scientists' accounts of working and living in academia. I propose that postdocs' accounts offer particularly rich narratives about the values that guide academic work today and that their experiences mirror larger transformations of academic work that intimately affect PhD education. Foregrounding three moments of crisis – a crisis in collaboration, a crisis in education and a crisis in academic subjectivation – I argue that in order to improve and reorient contemporary PhD education, systemic change pertaining to the values, assessment procedures and incentive structures that govern academic work across career stages and, increasingly, across disciplines is needed.

Introduction: Unpacking the Notion of Crisis

The contributions in this volume start from the observation that the university as an institution, and PhD education in particular, finds itself in a state of crisis, an observation that is both widely shared and criticized in academia. Some argue that contemporary universities are finally heading in the right direction, leaving the ivory tower behind, becoming more accessible and accountable to a range of societal stakeholders, exhibiting a more competitive spirit and focusing on fields of research and training that can yield measurable public impact and increase student employability. Others argue that this is exactly the wrong direction to head in: they argue that universities need to remain institutions of independent knowledge production, educate

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students to become critical thinkers not employees, focus on basic research and promote collective thinking and problem-solving in order to respond well to the multiple social and ecological challenges that planet Earth is facing right now. Both of these positions of course operate with idealized notions of the university and its past, present and possible future. Both also focus on aspects of the university that have always existed to different degrees in different fields, institutions and national contexts. The struggle today, therefore, might be more about balance than about principle.

It is from this vantage point of thinking about balance that I start my interrogation of a possible crisis in academia. A crisis emerges when a system is no longer able to integrate or compensate for certain developments; a body, for example, experiences crisis when it lacks nourishment or is strained too much. A state of crisis can only be maintained for so long before it results in lasting damage. If the strains are not attended to or integrated in some way, a body eventually becomes sick or burns out.

Recent years have seen an uptick in literature in which academics describe just such an experience of crisis: a sense that everyday work in contemporary universities results in a myriad of "hidden injuries" (Gill 2010) that strain and overstrain the bodies and the minds of academics. This sense of crisis, I argue in this piece, is chiefly rooted in a mismatch between the values that are supposed to govern academic work in principle and those that govern academic work in practice. I arrive at this conclusion based on my interview-based research, which explores the work cultures of researchers in the life sciences and the environmental sciences. The notion of crisis that I am working with in this chapter is thus not a temporal one: I do not assume that there was a "golden age" (Holden 2015) of academia when things were good and that now they are not anymore. Talking to researchers at different career stages reveals that indeed each time period in academia had its own challenges and, sometimes, what was intended as a solution to a problem in the past has now become a problem itself. For example, in interviews, senior life scientists recount how, when they were starting out their careers, they argued *for* the use of performance metrics for hiring and promotion procedures in order to break up feudal and nepotist structures at universities. Today, many feel that in doing so they have assisted in the creation of a new system of oppression and exclusion, a novel "monster" that replaced the old one and that now governs their own research agendas and the careers of their students, and that limits epistemic and human diversity in academia.

Rather than a decay over time, I thus understand the current sense of crisis as a mismatch between ideals and experiences in the present. Ideals that, among other things, include the notions that science is a public good with the primary aim of expanding knowledge, not profit; that science is collaborative and communitarian; that educating students is an important and rewarding academic activity and that the scientific community would stand up to defend these values if they were threatened. Academics, particularly younger academics, often assume that these values at some point governed academic work in practice (a question that, in my view, is open to historical-empirical investigation) – why else would these values be so central to the mission statements and recruitment pitches of universities, research funders and related government agencies? Yet, as Ylijoki points out, this nostalgic view of the

past that we often encounter when academics speak about current problems might say more about the present than it does about the past. In her analysis of academic nostalgia, Ylijoki (2005) argues:

> The reference point of the story of nostalgia is not the past but the present. Thus the nostalgic past should not be interpreted as an objective description but as a selective idealization and simplification (Gabriel, 1993). The nostalgic yearning for the lost golden age reveals current tensions and dilemmas through which the idealized past is then socially constructed. (561) […] Nostalgia concerns the moral order of academic work: what is academic work all about, what is its purpose, who determines its content, which duties form the core of the profession, to whom it is directed, and which commitments and assumptions are the most fundamental. (570)

Ylijoki reminds us that nostalgia, which literally means "homesickness," is more often indicative of feelings regarding a mismatch of ideals and experiences in the present than of the existence of an actual golden past. In her study, nostalgia is often related to the perception that something is different from how it should be; it conveys feelings of loss and lostness, of anomie, distrust and confusion. Nostalgia is connected to what Ylijoki calls an academic "identity crisis" (2005, 571): a moment in which the values that have been perceived to be at the core of academic work do not figure prominently enough in practice to uphold the sense that they are really guiding its processes. Whether they have ever been key is debatable and, to me, not the most fruitful or urgent of questions. In my view, it lends neither less nor more authority to a problem if it is a new or an old one; rather, its consequences in the world are decisive.

My use of the word crisis is nostalgic in this sense: while not necessarily assuming the de facto existence of a better past that preceded the crisis (Alas, what does better mean? Better for whom? In which respect? For whom not?), it aims at honoring a *feeling* of decay that permeates many interviews – a decay that is first and foremost a social one that runs contrary to the expansion of campuses, PhD programs and funding programs in fields such as the life and environmental sciences. In what follows, I sketch three, as I believe, important aspects of this crisis, particularly with regard to the ability of academic science to respond well to the multiple social and ecological crises of our time. These aspects concern the value of (1) collaboration and (2) education in contemporary science, as well as (3) the formation of academic subjectivities. In conclusion, I discuss what this analysis of crisis might imply for rethinking PhD education "at the end of the world."

Viewpoint: Postdocs and the "Postdoctoralization" of Academia

I explore these moments of crisis from the perspective of postdocs in the life sciences, through material gathered in interviews over a period of more than 10 years in a range of projects. It might be surprising to find a chapter that specifically draws on the experiences of postdoctoral researchers in a volume dedicated to PhD

education. I believe, however, that postdocs offer a particularly valuable vantage point from which to explore the guiding values of contemporary academic work. Postdocs work at the "bottleneck" of academic careers; particularly in fields like the life sciences, the number of PhD holders who aspire to an academic career far exceeds the number of available long-term positions, such as group leader or staff researcher positions. The postdoctoral period is hence a time of intense competition, and postdocs are often keen observers of the values and norms that govern academic success. No longer students and not yet – or ever – established scholars, their take on academic life and its rules tends to be astute and unfiltered.

Yet, it would be a mistake to assume that their accounts of academic life only have relevance for the postdoctoral period: I understand the postdoctoral period as a model of a type of anxiousness, precarity and a specific value-orientation that is currently expanding into ever more periods of academic life. Ever more senior positions are time-limited, non-tenured or non-tenure-track; ever more PhD students have the sense that they need to be immensely successful and productive during their PhD years in order to stand a chance in the fierce competition that comes thereafter. Even master's students in the sciences report that they feel the pressure to arrive at publishable results by the end of their 6-month thesis period. The pressure is mounting all around, and the postdoctoral period offers insights into how these pressures might affect researchers' decision-making processes in their academic work practices.

Additionally, of course, postdocs also serve as important role models, mentors and supervisors to PhD students in everyday research life. While often not officially acknowledged, their impact on PhD students is significant. In the life sciences, for example, they are usually the most experienced researchers at the bench, with group leaders usually removed from everyday laboratory work. For all these reasons, I believe it is more than appropriate to dedicate a chapter in this volume to postdocs and to what we can learn from their experiences about the contemporary transformation of academic work in general and about PhD education in particular.

A Crisis in Collaboration

Scientific collaboration is one of the big buzzwords of contemporary science and science policy: it is through collaboration that researchers are supposed to address and overcome the challenges and crises of today. Yet, in my work, collaboration emerged as a practice that postdocs struggled with (Müller 2012; Müller and de Rijcke 2017). In their narratives, it became apparent that considerations of (first) authorship often led postdocs to shy away from rather than embrace collaboration. For advancing their careers, postdocs considered publications, and especially first authorships on publications, absolutely vital. This high career value assigned to publications in general, and first-authored publications in particular, shapes how postdocs prefer to organize their work within research groups. It decreases their interest in collaboration with peers in order to avoid authorship conflicts and the

potential loss of vital first authorships and increases their preference for working individually.

Group leaders are generally aware of the career needs of their younger group members, and most try to ensure that each member of the group, starting at the PhD or even master's level, can work on a clearly delimited project in order to keep the number of authorship conflicts low. Hence, the basic socio-epistemic organization of life science labs – and, increasingly, of groups in other research fields – is based on individualized working structures that serve individual-focused career rationales.

This is not to say that, within the basic structure of individualized projects, group member scientists do not cooperate; indeed, they systematically and significantly assist each other with their individualized projects. Yet, they try to avoid having to accredit help through co-authorship, as the value of a paper is perceived to decrease with the number of authors. Thus, even these informal forms of working together are constantly assessed with an eye to the potential danger of having to share authorship and hence entail a significant amount of self-monitoring: the task is to give enough to others in the group to be able to ask for help, while avoiding giving or especially receiving help that becomes so substantial that it needs to be formally accredited with co-authorships. Thus, career considerations substantially shape and govern processes of (not) working together in life science research groups.

Calling it a *moment of crisis* if postdocs prefer to work individually rather than collaboratively might seem to require the normative assumption that collaboration is something beneficial in and of itself. Shrum (2010) argues that it is an analytic weakness of numerous studies of collaboration to implicitly make this assumption without further reflection. This is certainly an important observation. Yet, this is not the assumption behind my argument here. In fact, I do not argue that all collaboration is inherently beneficial. Rather, I argue in favor of *socio-epistemic conditions that allow for collaboration when it is needed* – when the research problem and the real-world problem behind it are better solved collaboratively. Hence, what I am concerned with is that current academic career rationales in the life sciences limit the *possibilities for collaboration*. They tend to make collaboration unattractive even if, epistemically, collaboration would be the best way to go. Since criteria for assessment and employment focus on individual achievements, they limit how much and which kinds of collaboration life scientists can afford. This goes beyond the entity of the young competing postdoc researcher who does not want colleagues involved in his or her work for authorship reasons: it affects the structure of learning processes and opportunities during the PhD as much as it affects the behavior of group leaders, who, for example, recount shying away from collaboration within the same institution because a collaborative paper will only count half in publication numbers and impact points for each group in the annual institutional performance evaluations.[1]

[1] Economist of science Paula Stephan (2012) has published similar findings with regard to interdisciplinary collaboration.

Someone might interject that this cannot be true, as formal collaborations are becoming more frequent – often, achieving funding is not even possible without collaboration. Through these creative constraints,[2] scientists come together in novel and unexpected constellations, sharing their expertise and devising new research questions and approaches. However, at times, these collaborations are just that: means of achieving funding. Accounts of how scientists try to ensure a competitive advantage over other collaborators within these large-scale collaborations (e.g. by not sharing their most promising data) are not unusual. Subjected to the primacy of individualized career rationales, collaboration can only thrive where it assures a competitive edge over others and improves one's position within the academic system. Competition structures collaboration, giving room only for some forms of collaboration and not others. Yet, what about those forms of collaboration that would address a problem very well but would be lengthy, complicated and unorthodox? Where do they fit in? It is these forms of collaboration that I am concerned about. How do we need to refigure academic career and incentive systems to allow them to thrive, too?

A Crisis in PhD Education

Not all collaboration is beneficial, nor is all collaboration elective. Shrum reminds us that the term collaboration itself has historical affinities with practices of betrayal by invoking its "World War II roots as a traitorous relationship with an enemy" (2010, 247). While Shrum clearly invokes this drastic historical meaning of collaboration to counteract what he perceives to be an overly uncritical embrace of collaboration as an inherently positive and well-meaning practice, it is worth exploring under which conditions collaboration can become part of practices of exploitation and betrayal. The second moment of crisis I attend to has to do with such instances in which a collaborative relationship might entail treacherous aspects. It focuses on how postdoctoral life scientists engage in supervision work of PhD students (Müller 2014).

Social science studies of the increasingly dominant neoliberal model of the university indicate that its rise goes hand in hand with shifts regarding which kind of work is rewarded in terms of career development and job security (Macfarlane 2005; Brown 2002). While an increasing focus is put on evaluating research performance, less reward is attached to excellent performance in supervising and teaching students. Postdocs carry out significant amounts of supervision work within life science research groups (Delamont and Atkinson 2001). Yet, this work hardly counts towards their career development. Here, research performance metrics such as publication numbers and journal impact factors are key. Hence, within the

[2] See Stengers (2010) for how constraints are, while limiting, always also creative as they lend specificity to practices.

competitive environment of academic life science careers, postdocs feel that they need to dedicate as much time as possible to working on publishable results. Supervision work takes time away from publication work. Still, postdocs are often overburdened with supervision duties handed down to them by their group leaders, who are also overburdened by an increase in duties associated with the current changes in the academic world (more grant writing, audits, more PhD students, etc.). This puts postdocs in often quite overwhelming situations. Yet, this is hardly acknowledged as problematic by the group leaders and sometimes not even by the postdocs themselves. Rather, this kind of overload is reframed as indicative of their future work and life in academia, and learning how to deal with it is considered necessary for postdocs if they want to advance to the next stage of their careers. This framing puts normative pressure on postdocs to show that they can cope and hence are suitable candidates for an academic career.

How, then, do postdocs cope with this situation? One strategy is to maximize work time, in order to combine research and supervision work. Naturally, this strategy has limits, as even the most ambitious postdoc can only work so many hours without seriously compromising their physical and mental health. A second strategy therefore often complements this first approach: unable to fully compensate for the time consumed by supervision work, postdocs gradually reframe their supervision activities as potential investments in co-authorships on their students' publications. This is a strategy not unlike the standard procedure in the life sciences lab, where group leaders generally receive last authorships on all of their group members' publications, since they provide the intellectual and practical space and the resources for conducting the work.

At first glance, this might appear as a mutually beneficial solution for both the postdoc and the PhD student. Yet, in practice this arrangement is indicative of a more general move towards subjugating educational relations to the dogma of competitive production. As scientists increasingly depend more on their students' successful production than on their proper education, spaces primarily dedicated to education become marginalized. Yet, successful production is not equivalent to successful education. Fruitful learning experiences cannot be measured in units of output, nor do they necessarily depend on productive success: failure can be a rich learning experience, too. Yet, the need to be productive in quantitative terms pervades academic spaces ever more thoroughly, governing ever earlier stages of scientists' development.

What about this situation implies betrayal? Who is being betrayed? While many PhD students will still enjoy a proper education, and might also succeed career-wise due to publishing early on, the betrayal rests in the cooptation of educational spaces and the marginalization of failure as an educational tool. If supervising scientists increasingly depend on their students to be successful producers instead of or on top of being eager learners, failure becomes increasingly threatening and needs to be avoided. The students' right to fail – and the space and the time to do so without consequence – becomes increasingly compromised.

At first glance, depending on their students' successful production might appear to raise postdocs' stakes in their students' development. However, as it is not

educational success but productive output that is career-building for the postdoc, what if the student fails to be a productive resource? What if her learning progress does not comply with the tight time regimes of publishing? With hardly any incentive to protect spaces entirely devoted to learning in PhD and also postdoctoral education, the temporalities and values of learning increasingly give way to the rationales of production. Hence, if learning and education are experiences and values to be preserved in academia, then supervising and educating students needs to be considered career-relevant in and of itself, decoupled from its productive output. We need to invent tools that assess the proper education of a student and that do not mistake successful production for successful education.

A Crisis in Academic Subjectivation

I started this chapter by arguing that there is crisis in academia that pertains to, as Ylijoki put it, "*the moral order of academic work: what is academic work all about, what is its purpose, who determines its content, which duties form the core of the profession, to whom it is directed, and which commitments and assumptions are the most fundamental*" (2005, 570). Postdocs often experience this academic "identity crisis" (Ylijoki 2005, 571) quite vividly. Many feel an intense mismatch between their expectations about what work in science would be like and their actual experiences of working as scientists. One postdoc in a group interview expressed her experience of mismatch so very aptly when she asked her colleagues if they, too, felt that *"the structure of a scientific career [was] such that it tend[ed] to make you forget why you're doing the science? (PDoc 21f, 986)."*

Interviews with postdoctoral life scientists are rife with remarks about such alienating effects of academic career rationales – how they alienate researchers from each other and from themselves. The effects of the neoliberal university on researchers' subjectivities are an issue that is slowly emerging as a topic of research (Sigl 2019). Gradually, it has become clear that these effects should not be underestimated. As Zabrodska et al. (2011) put it: *"Few guessed, as they embraced some aspects of neoliberalism's managerialism and grumbled about others, the extent to which these systemic transformations, with their heightened competitiveness and individualism, would shape both their subjectivities and the nature of their work (710)2."* It is becoming obvious that what is at stake is onto-epistemological transformation (Barad 2007). As the conditions of academic work change, so do research practices and academic subjectivities.

Within these processes of onto-epistemological transformation, 'career rationales' figure as governmental technologies in a Foucauldian sense. Foucault argues that contemporary forms of governance exert power less through visibly forcing subjects into compliance but rather through "structuring and shaping the field of possible action of subjects" (Lemke 2002, 52). Through a dense web of implicit and explicit processes of discursive interpellation, they encourage the governed to modify their subjectivities in correspondence with the needs and desires of the

governing. In the context of academic life science worlds, mundane practices such as writing or reading a curriculum vitae as part of a job application can serve as examples for such forms of governance: by encouraging scientists to document their work in specific ways and to emphasize specific activities and qualities and not others, and by applying specific emergent standards for assessing these records, these procedures establish norms for what counts as more and less desirable behavior. They thereby encourage specific forms of self-monitoring, self-assessment and self-governance, eventually becoming intrinsic parts of academic subjectivity by "internalizing imperatives which were previously externally imposed" (Power 1997, 3).

If a postdoc ends his narrative about having to leave his current lab if it does not provide him with more publishable data soon by saying "I'm sorry, but it's kind of business" (PDoc_1m, 744), then he describes the boundaries of what appear to him as possible choices that he can make. At the same time, he lays bare the moral dilemma he is facing as he experiences pressure to make this choice, whether or not he thinks it is morally – or epistemically – the right thing to do. This sense of being alienated by the rules of the game while at the same time feeling helpless to change them is characteristic of interviews with life science postdocs. I interpret this helplessness as the *inability to engage in critique*.

Foucault suggested that, at its core, critique is "the art of not being governed quite so much" (1997, 29). Queer theorist Judith Butler later added that, essentially, critique has "to do with objecting to that imposition of power, to its costs, to the way in which it is administered" (2001). It is this form of critique that seems largely precluded for postdocs. With a few exceptions, they consider themselves largely replaceable: so many aspire to an academic career; if they objected to the rules of the game, surely they would be quite expendable. This feeling of expendability creates a type of academic who is compliant and exploitable, who feels that they cannot critique let alone change their own circumstances. Yet, we expect these researchers to be the critical backbone of society, confident in affecting change in the world.

Many researchers have their own practices for coping with this situation. One is to connect to their initial motivations for becoming researchers. Some researchers talk about how, in the practice of gardening, they reconnect with their love for plants and other living creatures and with their desire to understand life itself. Others connect to their big whys: the possibility that their work might generate knowledge that could help to heal diseases, for example. They do this *despite* and not *because* of the current incentive structures in academia. It is a practice that keeps them going.

At the same time, these coping practices point to an enormous potential that often goes untapped. Many researchers, who are currently anxiously focusing on their own careers, their next publications and their own survival in academia, express a desire to work differently, more collaboratively and more oriented towards the common good. This might include applied forms of research as well as solving basic research questions. The distinction between basic and applied research is not really the point here: the point is rather if research practices are mainly oriented towards reaching specific career goals or if there is a larger purpose to them that is palpable and that permeates everyday work practices.

Such desires to work differently are voiced by researchers of all genders, yet, particularly often, they are voiced by female-identifying researchers. These desires are often framed as reasons why, ultimately, they might opt out of academia, tired of constantly working in a state of individualization and self-centered competition (Fochler et al. 2016). Common opt-out points are the end of the PhD or a few years into the first postdoc. This is but one example of how the current value structures of academic careers contribute to the continued discrimination against women in academia, stifling their potentials and contributions to the world.

Conclusions: Another World Is Already There

In this chapter, I have argued for taking the perception of a crisis in academic work seriously and for exploring what this perception of crisis is based in. I have argued that this perception of crisis is based in an experience of mismatch between the values that are supposed to govern academic work in principle – values that are often reaffirmed in university mission statements and official speeches – and those that govern academic work in practice. I have sketched three aspects of this crisis that become palpable in the accounts of life science postdocs: a crisis in collaboration, a crisis in education and a crisis of academic subjectivation. What all these aspects of crisis have in common is that, in each case, a logic of competition and individualism supersedes and eventually displaces other values, such as the values of collaboration, education, critique and care for the common good.

How do these insights help us reconceptualize the PhD at the end of the world? In this concluding section, I mainly want to make one point, which is that we cannot change the nature of PhD education without a significant change in the values and incentive structures of academia as such. The main purpose of this contribution, which centers on the postdoc period, is to show that there are larger systemic problems in academia that embed and are embedded in contemporary PhD education. It will hardly be possible to foster a type of PhD education that collaboratively, creatively and responsibly addresses the current social and ecological crises this Earth is facing, if the postdocs who supervise them do not have the same liberties. To enable a type of PhD education that can respond well to the aches of the world, we need to rethink practices of evaluating and incentivizing academic work as such. While PhD students are, to a certain extent, more protected from the sheer forces of academic careers, this status is temporary, fragile and gradually dissolving as ever more periods of academic careers undergo a certain "postdoctoralization." To argue for a different type of PhD education is thus to argue for different working conditions and modes of assessment for all researchers.

Such a shift could unleash a tremendous potential in academia that is today mostly stifled: a desire expressed by many researchers to care about and for more than just their own careers (cf. Barnacle 2018). In the conversations I had with researchers before, during and after their PhDs in different contexts, they often expressed worries that this impulse to care would constitute a weakness if they were

to strive for an academic career; that they worried they would only succeed if they adopted a more calculative approach, freed themselves from teaching obligations and selected their research topics opportunistically. These are concerns that worry me, and I hope they worry many other senior academics, too. If that is so, then it up to us, who hold more power in the academic system than our junior colleagues, to use this power to create new structures of evaluation and incentive that can gradually take this worry away. We can contribute to this endeavor any time we work in evaluation committees or in hiring boards or when we supervise our own PhD students. We can talk to our colleagues and interrogate which values guide our own hiring or promotion decisions. We can make a given into a question – even if the pressure to be silent and compliant might weigh heavily on us, too. Maria Puig de la Bellacasa (2017) reminds us that another world is not only possible, it is often also already there, in the cracks of this one. Critical conversations across career stages and disciplines are one way of widening these cracks and letting the seeds of other worlds take root.

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