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# How Emotions Make Knowledge: Understanding Emotional Cultures in Science

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**Abstract**

The formalization of research excellence and the emphasis on addressing societal challenges have not only reshaped how researchers conceptualize their work but have also transformed their emotional experiences. Drawing on insights from Science and Technology Studies (STS) and the Sociology of Emotions, we introduce the concept of *emotional cultures* to explore how shared emotional norms and practices shape the professional lives of researchers. By reexamining our previous work, we identify three distinct emotional cultures in academia: an emotional culture of anxiety, prevalent among early-career researchers who face competitive, precarious job markets, and experience continuous acceleration, leading to exhaustion and vulnerability; an emotional culture of eco-anxiety, common among ecological scientists who are deeply concerned about environmental crises, and who develop strategies to cope with their distress; and an emotional culture of hype and opportunism which characterizes grant application processes, while contrasting with a culture of excitement and restraint during evaluations for research funding. The concept of emotional cultures demonstrates that researchers inhabit epistemic cultures, that are inherently emotional, requiring them to continuously regulate emotions in their professional roles. Importantly, it underlines the role of collective emotions in shaping the conduct of researchers and the lived experience of academic work.

**Keywords**: Emotional cultures; research funding; anxiety; epistemic cultures; Science and Technology Studies (STS).

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## 1 Emotions in Scientific Work: Toward a Research Agenda on Emotional Cultures in Science

Academic work has undergone profound transformation through the restructuring of university careers, the formalization of research excellence criteria, and the rising expectation that science should address urgent societal challenges. These contemporary transformations have reshaped not only how researchers conceptualize their work, but also how they experience, and emotionally engage with, their professional roles and environments. In response, research in Science and Technology Studies (STS) has begun to explore how emotions are inextricably interwoven into scientific practice — from the selection of research topics (Parker & Hackett, 2014), to undertaking fieldwork in challenging conditions (Lorimer, 2008), and navigating the complexities of interdisciplinary collaborations (Boix Mansilla et al., 2016). Scholars have demonstrated the essential role of emotions in shaping research work and career trajectories in academia (Bloch, 2016), inviting further inquiry into how emotions intersect with the broader reorganization of academic life.

From the outset, STS have acknowledged the importance of emotions in scientific life and rejected the Cartesian ideal of a strictly objective and impersonal science, which states that all types of emotional influence should be excluded (Fleck, 1935; Merton, 1973). Yet the study of the emotional lives of scientists has developed slowly and at the margins of the field, often in isolation and without much coordination (Parker & Hackett, 2014; Barbalet, 2002). This slow progress may be attributed to enduring epistemological and methodological divides in the social sciences, where emotions have traditionally been relegated to psychology and treated as individual reactions rather than socially mediated experiences. In STS, the development of a study of emotions has also been hindered by a tendency to oppose emotions and discourse, especially among early advocates of laboratory studies, who have, paradoxically, constantly deconstructed modern dualisms in the study of social life (Wetherell, 2013). Although emotional processes unquestionably involve bodily experiences, every researcher who has empirically studied the role of emotions in academic life has observed that emotions are typically expressed discursively (Bloch, 2016). As shown by the sociology of emotions, this discursive aspect reflects both the largely subjective, intimate character of emotional experience and the fact that emotions often develop slowly over time rather than erupting in an immediate response to events. Additionally, expressions of emotions are strongly regulated by social norms and conventions, which prescribe what can be publicly shown (Hochschild, 1983). Recent research has, therefore, attempted to move beyond the simplistic dual opposition between emotions and discourse, instead exploring how emotions can be analyzed through diverse empirical materials and close examination of the contexts and meanings of emotional expression (Lamont, 2009; Müller & Kenney, 2014; Brunet, 2024). Drawing on the emergent agenda of studying emotions in STS, we build on our existing work to explore how emotions are collectively organized and shaped by norms, social structures, and power relations in academic life, leading to the formation of specific academic selves (Anderson, 2017; Bloch, 2016; Müller, 2014a).

To investigate the emotional influence of contemporary transformations in research, we bring together the previous works conducted by both authors. In particular, we advance the concept of *emotional cultures* to examine how emotions are organized, regulated, and experienced in academic life. Rather than considering emotions as purely individual experiences, we focus on how emotional experiences are produced on a collective level through interactions between individuals, including across geographical distances and between people who have never met, and through institutional norms and values (Anderson, 2017; Von Scheve & Salmella,

2014). Common examples of collective emotions include perceptions of living in an "age of anxiety" (Wilkinson, 2001) or the pervasive fear of environmental apocalypse (Swyngedouw, 2010), both of which are often linked to precarious working conditions and the overly productivist logics of late neoliberal capitalist societies (Rosa, 2003). Previously, authors have employed various concepts to capture these collective emotions — for instance, by examining how affective atmospheres shape the contemporary experience of academic mobility (Davies, 2021). These studies suggest that collective emotions can become dominant patterns for organizing emotional life and can take the form of enduring and long-lasting affective conditions.

While concepts of an "age of" particular emotions often risk homogenizing emotional experiences across specific periods of time (Anderson, 2017), the concept of *emotional cultures* highlights the coexistence of multiple, overlapping modes of experiencing collective emotions. With this conceptualization, we do not aim to reify emotional cultures by categorizing a set of universal, pre-identified emotional states. Instead, we use this concept to illustrate how emotions dynamically shape and are shaped by the situations and structures of academic life. The concept of emotional culture builds on previous works that have emphasized the collective organization of emotions in social communities through the shared (de)valuation of specific emotional states (Rosenwein, 2006) and through social norms regulating emotional life (Hochschild, 1983). However, unlike perspectives that assume individuals belong to clearly defined emotional communities, we argue that researchers constantly navigate a variety of emotional cultures, whether by juggling diverse professional activities or by occupying various professional roles over their careers. In this sense, our conceptualization echoes the influential STS idea that different epistemic cultures coexist and organize scientific life (Knorr-Cetina, 1999). Specifically, we propose that academic life is experienced and shaped through diverse emotional cultures, which in turn influence the type of work conducted by researchers.

The concept of emotional cultures does not necessarily imply that collective emotions are simply taken for granted, passively accepted, or externally imposed on social actors. On the contrary, as the sociology of emotions has extensively shown, emotions are actively managed, engineered toward particular ends, and carefully regulated by individuals to align their emotional experience with social expectations (Hochschild, 1983). Individuals engage in "emotional work" to regulate their emotional experience in their professional life, guided by a set of "feeling rules" that act as scripts for the acceptable experience and expression of emotions (*ibidem*). Sociologist Charlotte Bloch (2016) has conducted foundational work on this topic by exploring the tacit mechanisms of emotional regulation across various academic activities and career stages. Bloch's research shows that emotions organize academic life through a rich and diverse emotional culture, which foregrounds moral interpretations of academic work. Building on Bloch's work, we extend the concept of *emotional cultures* by integrating perspectives from STS with recent research on collective emotions. This allows us to explore the epistemic consequences of multiple, coexisting emotional cultures in academia. In that regard, our analysis of *academic emotional cultures* not only contributes to existing STS scholarship on the role of emotions in academia (Parker & Hackett, 2014; Lorimer, 2008; Boix Mansilla et al., 2016; Brunet et al., 2019; Schönbauer, 2024), but particularly draws on the central STS insight that scientific knowledge and the social world are co-constitutive and mutually shape one another. As captured by Jasanoff's idiom of co-production (Jasanoff, 2004), emotions serve as both conditions and outcomes of academic work: they influence the choice of research agendas and practices, while also being shaped by institutional contexts and disciplinary norms. This mutual shaping of epistemic and social orders is intrinsically emotional. It leads researchers to cultivate different emotions concerning how they relate to their work, which then gradually

stabilize as shared emotional cultures. Far from being neutral, these emotional cultures reflect moral evaluations about what counts as good and bad science, and what qualifies as a desirable academic self.

This article builds on our previous research, conducted both individually and collaboratively, to examine how contemporary transformations in academia have fostered distinct emotional cultures, which shape how scientists experience and relate to their work. Adopting a multi-sited inquiry approach (Marcus, 1995), we analyze several cases to explore how emotional cultures are co-produced in diverse institutional and epistemic settings. Specifically, we focus on three distinct but interrelated cases, each explored in the sections that follow: (2) the working conditions and career trajectories of young researchers in the life sciences; (3) the development of societally relevant research topics in response to the ecological crisis in the ecological sciences; and (4) the implementation of new funding and evaluation frameworks in European research funding agencies. We selected these cases because they exemplify demands for productivity and societal relevance in contemporary research, while also crystallizing important debates about research assessment. Building on these cases, we draw on previously published analyses of a rich and diverse dataset collected during earlier studies, including semi-structured interviews, participant observations, and institutional documents — all analyzed qualitatively through iterative coding processes. Although each case provides distinct insights into different aspects of knowledge production (scientific careers, epistemic work, and governance practices), they now enable us to transversally compare how emotions are collectively experienced, cultivated, and contested in diverse academic situations.

While the material has been the focus of former analysis, we revisit our previous publications here by using the concept of emotional culture as a sensitizing concept (Glaser & Strauss, 1967), allowing us to investigate how emotions intersect with academic norms, institutional expectations, and epistemic practices in different situations. Through this comparative lens, we suggest that different career stages, scientific topics, and research institutions may foster similar collective emotional experiences among researchers. Our identification of different emotional cultures is not intended to be exhaustive, nor do we claim to have identified all major emotional cultures in contemporary science. Rather, our exploratory and comparative approach underlines the importance of attending to emotional cultures as organizing scientific life and invites future works to further investigate the role of emotional cultures. We conclude by highlighting the potential of the concept of emotional cultures to illuminate contemporary transformations in academic life.

## 2 Emotional Culture of Precarious Scientific Careers Among Young Researchers in the Life Sciences

In recent decades, academic working conditions have been profoundly transformed by the adoption of market-oriented New Public Management techniques. These reforms have promoted the use of quantitative performance metrics, intensified evaluation practices, and framed competition as a key driver of academic excellence (Slaughter & Leslie, 1997). As a result, funding structures have been reorganized around short-term, project-based models, and performance has been increasingly assessed through indicators focused on publication numbers and grant acquisitions. Over the past twenty years, research in STS and neighboring fields has begun to explore the broader impact of these transformations on academic work, including their emotional dimensions. Contributing to this emerging research agenda, Müller (2014a &

2014b) draws on semi-structured interviews with 38 Austrian postdoc researchers in the life sciences[1] to trace how intensified competition, short-term contracts, and overall uncertainty about long-term career prospects shape researchers' emotional experiences. Müller shows that these conditions foster living and working with a sense of "anticipatory acceleration" and "latent individualization", as researchers strive to meet different expectations.

The intense competition for scarce tenured positions, combined with early-career precarity, can be analyzed as fostering an emotional culture of anxiety among postdoctoral researchers. Today's postdocs face significant job insecurity and must compete with a growing number of peers. In response, many extend their working hours, aiming to publish at a higher rate and in more prestigious journals than their predecessors, creating "a climate of constant rush and fear of lagging behind, as outcomes of a research process are hardly calculable from the beginning" (Müller, 2014b, p. 338). This leads postdocs to work in a state of "anticipatory acceleration". This term denotes that:

> Postdocs accelerate their working practices, i.e., increase the amount of events per time, to their very limits not primarily because of concrete and time pressures (e.g., a person somewhere else in the world working on exactly the same topic; a specific deadline), but habitually and because of a profound anticipatory orientation that suggests that however much they are currently doing might not be enough and can still be optimized (Müller, 2014a, para. 33).

Evaluation criteria for hiring and promotion in contemporary academia emphasize a high number of countable academic outputs, such as publication numbers and grant money. Importantly, it is not only the overall number that counts, but also the number of countable units per unit of time. During the postdoctoral period in the life sciences, the ratio of impact factor per time is particularly crucial for career advancement — i.e., how many publications a researcher produces, and at what journal impact factors, within a given period. This focus on publication metrics encourages postdocs to adopt future-oriented subjectivities, where "the present is governed, at almost every scale, as if the future is what matters most" (Adams et al., 2009, p. 248). This fosters an emotional culture characterized by feelings of constant acceleration, anxiety, and, inevitably, exhaustion and vulnerability. The quote below from a postdoc is illustrative of this emotional state:

> "You need to keep publishing papers, you need to publish, you need to make sure you publish papers over a year. If you don't have papers over a year, then you are toast. [...] I need at least one, two papers a year [...] or a really good one every few years" [PDF_2m 1058] (Müller, 2014a, para. 27).

Working in a state of anticipatory acceleration affects postdocs' epistemic choices. For example, postdocs tend to opt for topics with fairly predictable outcomes and those that seem likely to provide them with regular publications, rather than pursuing questions that appear most intellectually or socially relevant to them but might be riskier, more unorthodox, or time-consuming. Some postdocs choose to pursue both risky and safe projects at the same time.

1. Interviews were conducted between 2008 and 2013. Research is based on 21 interviews with postdocs in Austria and two group interviews in the U.S. that were conducted in the project "Living Changes in the Life Sciences" (PI: Ulrike Felt, University of Vienna), funded by the Austrian Genome Program GEN-AU; and 17 interviews that were conducted in the context of a postdoc excellence program at an Austrian life science campus.

Whatever the strategy, the postdoc period is characterized by deep-seated anxieties about the future — both in professional terms and in more existential ones. Postdocs often fear that they might become long-term unemployed and be relegated to the margins of society if they fail in their academic careers, while others worry that the mental health impact of their current work life might, at some point, overwhelm and crush them. These existential anxieties and career pressures are amplified by a professional socialization that prioritizes the academic career path above other career possibilities.

Living in a state of anticipatory acceleration, postdocs often begin to enact a state of *latent individualization* when it comes to their professional social relations. The notion of "latent individualization"

> tries to capture how postdocs' decision-making practices within their current institutions and groups are also almost always crucially shaped by considerations of and for a future self that is no longer part of their current collective contexts (Müller, 2014a, para. 35).

Relations with colleagues, groups, and institutions are often rendered instrumental and tentative, as any attachments in the present are perceived to require constant evaluation regarding the advantages and disadvantages they might bring for the future self who competes to stay in science. This puts a strain on collegial relations and collective environments, and particularly impacts the ways in which postdocs engage in teaching and mentoring, as these activities are seen as work that does not easily create transferable currency for academic career-making (Müller, 2014b).

Taken together, anticipatory acceleration and latent individualization often lead life science postdocs to question why, and for whose benefit, they are even doing research, creating feelings of dissatisfaction and lack of purpose. This is particularly troubling in a field like the life sciences which holds such promise to benefit society. Furthermore, career precarity affects life choices, such as family planning and long-term commitments, which might further reinforce postdocs' isolation and anxiety.

An emotional culture of anxiety emerges from the precarious scientific trajectories of young researchers in the life sciences. Yet, this anxiety is not only generated by the contemporary organization of the research system; it also affects how researchers relate to their topics of study and how they conceive the impact of their research in addressing pressing societal challenges. In the following section, we turn to a second emotional culture of eco-anxiety, which is shared among researchers in ecology. Although the cases of postdocs in the life sciences and researchers in ecology differ in focus, they both point to similar emotional cultures of anxiety shaping contemporary research work.

## 3 Emotional Culture of Eco-Anxiety among Ecological Scientists Engaged in Societally Relevant Research

In many research fields, the expectation to address urgent societal challenges has become deeply ingrained in researchers' practices, reflecting a fundamental change in the pursuit of contemporary academic work (Brunet et al., 2025). A particularly illustrative example is the field of ecological sciences, which investigates the interactions between species and their ecosystems and has extensively documented the profound impacts of human activity on the environment. Paradoxically, despite the magnitude of ecological degradation, few authors have examined how

ecological scientists emotionally engage with the dramatic findings they produce. Drawing on more than 50 semi-structured interviews with ecological scientists and ethnographies of their work in both laboratory and field settings, Brunet (2020 & 2024) has argued that an emotional culture of eco-anxiety pervades the work of ecological scientists.[2] However, ecologists do not experience this anxiety passively as a source of despair or discouragement. Instead, they actively respond to it in their work by making specific choices about which research they consider worth pursuing. In contrast to the previous case of life science postdocs, whose emotional experiences are shaped by the pressures of a fast-paced, productivity-driven academic system, this second case highlights how emotions can become particularly intensified when researchers feel compelled to intervene in the world surrounding their research.

In their research practices, ecological scientists are at the forefront of environmental changes, meticulously accumulating evidence of ecosystem transformations and species loss (Granjou & Arpin, 2015). While their findings often call for urgent and transformative action, many ecologists feel unable to galvanize the societal response required to confront what they frequently describe as a large-scale biodiversity extinction crisis, which threatens the conditions for humans' survival. The emotional culture of their work can be described as *eco-anxiety*, a combined experience of deep worry about an impending ecological catastrophe and a sense of helplessness in the face of insufficient societal action (Brunet, 2020). This emotional culture is historically rooted in early narratives of environmental loss, such as Rachel Carson's dystopian vision of a *Silent Spring* (1962) devastated by pesticides, and is continually reinforced by contemporary global scientific assessments, including the Intergovernmental Panel on Climate Change's (IPCC) climate reports and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES) warnings about the potential extinction of a million species. The following quote illustrates this emotion of eco-anxiety, conveyed not only through the sense of powerlessness expressed by the interviewee but also through fragmented speech marked by repetitions and physical gestures:

> "I think that [...] the stakes are just too enormous; the issues are too complex. We're dealing with a [...] a big problem [bangs on the table], a big problem [continues banging throughout], and it's that people have a hard time imagining and picturing what would happen if this or that were gone in the ecosystems (interview with a restoration ecologist, Brunet, 2020).

Although eco-anxiety appears to be a widely shared emotional condition among ecological scientists, it is experienced in varied ways, depending on researchers' specific epistemic practices and their views about how knowledge should contribute to societal change. As a multifaceted discipline composed of various subfields, ecological sciences offer differing emotional resources for coping with the emotional culture of eco-anxiety, that is inevitably experienced by researchers working on ecological changes. To illustrate how distinct branches of ecology provide contrasting resources for managing this emotional culture, Brunet (2020) identified three major orientations, without presuming they are exhaustive, nor denying the existence of more nuanced positions among researchers. First, restoration ecologists can manage their

2. Interviews were conducted between 2014 and 2017 with ecosystem services researchers, an evaluation of the services provided by ecosystems to human societies, at various career stages (PhD students, postdocs, tenured researchers) working in France. Participant observation took place between 2015 and 2017 in one of the main French laboratories focused on ecosystem services (LECA; see Brunet, 2025), and in 2018 in the field with a leading French team in restoration ecology (IMBE; see Brunet, 2020). Research was funded by ARC Région Rhône-Alpes and the Kone Foundation.

eco-anxiety by experimenting with ways to rehabilitate ecosystems damaged by human activity. They emphasize the resilience and unpredictability of ecosystems, showing that ecological recovery is eventful and uncertain. Rather than mourning the loss of species and habitats, these researchers tend to adopt a more optimistic attitude and recommend accepting the destruction of natural areas and acknowledging the potential value of the novel ecosystems created through restoration actions. In contrast, a second group of functional ecologists often rely on advanced computer modeling to simulate ecosystem dynamics. Many collaborate with ecological economists, who share similar system-oriented epistemic practices, to analyze how ecosystem functioning can be valued in economic terms. Through their work, these ecologists can channel their eco-anxiety into a hopeful, solution-oriented approach — one that frames ecosystems as essential for economic development while demonstrating their importance for the functioning of human societies. A third group of ecologists, often trained in taxonomic sciences, or closely collaborating with social scientists, and sometimes publishing in sociology and philosophy journals, remain more deeply immersed in their eco-anxiety. These ecologists criticize the technical solutions promoted by the other groups, viewing them as insufficient or even complicit in exacerbating the dynamics driving ecological collapse. These three ways of responding to the culture of eco-anxiety illustrate that different fields within ecological sciences do not offer the same resources for managing it. Instead, specific epistemic practices give rise to distinct modes of "experiencing eco-anxiety" (Brunet, 2020), revealing potential affective inequalities within the same discipline.

By focusing on a specific environmental metric used by ecologists to quantify the economic benefits of ecosystems, Brunet (2024) has detailed how some ecologists attempt to turn their eco-anxiety into hope in response to the ecological crisis. In the case of France's Port-Cros National Park, ecologists measured the services provided by the park's ecosystems, such as carbon storage and recreational opportunities, as a way to foster a more positive emotional culture around nature conservation. Rather than evoking the sadness and fear typically associated with traditional ecological metrics, such as the number of species lost, the valuation of ecosystem services emphasized the park's positive contributions to human well-being. According to the park's report, each euro invested in the park generated 92 euros in local economic returns. This use of ecosystem services metrics by ecologists can be compared to the concept of *transposition* in music theory, where a sad minor tone can be turned into a joyful major sound. Similarly, valuing ecosystem services enabled ecologists to transpose the emotional undertones of conservation from a burdensome and discouraging task into a hopeful and exciting endeavor (Brunet, 2024). Port-Cros' ecologists intended to reconfigure the prevailing emotional culture of eco-anxiety, fueled by unstoppable environmental degradation and the park's shrinking budget, into a hopeful justification for continued funding and an enthusiastic message demonstrating the park's value to local decision-makers. This emotional reframing also served to distance ecologists from the "killjoys" stereotype often projected onto conservationists who oppose development projects (Ahmed, 2010). However, despite these efforts, the emotional transposition proved largely unsuccessful in securing support for the park's expansion, as decision-makers requested tangible investments rather than speculative calculations and expressed distrust toward scientific studies.

An emotional culture of eco-anxiety pervades ecological research, where it is not simply internalized or passively accepted but actively renegotiated by ecologists. Many researchers develop strategies to promote more positive emotional politics in nature conservation, which tend to celebrate positive emotions while sidelining negative ones (Braidotti, 2006). Advocates of ecomodernism are particularly supportive of this kind of emotional work, emphasizing op-

timism and faith in technological innovation to address ecological challenges (Nordhaus & Shellenberger, 2007). Other emotional cultures in contemporary academic life are also rarely monolithic; they consist of complex interplays between positive and negative emotional experiences. In the next section, we examine the emotional cultures that emerge through research funding and evaluation. These cultures are shaped by hype and excitement, yet they also require emotional restraint and often generate fatigue, disillusionment, and frustration among researchers.

## 4 Emotional Culture of Hype and Restraint in Research Funding and Evaluation Activities

As one of the most illustrative examples of contemporary transformations in academic work, research funding has become a central site in researchers' emotional lives. In the following section, we explore how funding agencies both shape and are shaped by a specific emotional culture, using two successive examples. Continuing with the case of ecological research, we first show that an emotional culture of hype and opportunism informs researchers' practices when applying for funding. We then turn to the peer-review process, where a contrasting emotional culture of excitement and restraint emerges as a way to navigate the values underpinning research evaluation.

### 4.1 Emotional Culture of Hype and Opportunism among Applicants to Research Funding Agencies

Ecological research illustrates the powerful influence of an emotional culture of hype and opportunism on academic life, largely driven by research funding agencies and international policy institutions. These institutions govern contemporary academic work not only through material incentives but also by steering research agendas on an emotional level, leading to important epistemic effects. In the field of ecosystem services research presented previously, Brunet et al. (2019) analyzed diverse institutional documents and conducted over 50 semi-structured interviews with researchers to examine the role of emotions in a field deeply shaped by research governance. The study shows that high-level political support and substantial research funding generated an emotional culture of hype around the topic of ecosystem services, fueling the rapid development of this research field.

Inspired by the Stern Review on the economics of climate change, commissioned by then—UK Prime Minister Tony Blair, then—German Chancellor Angela Merkel announced the launch of The Economics of Ecosystems and Biodiversity (TEEB) at the 2007 G8 Summit in Potsdam. This initiative quickly gained support from the European Commission and was further reinforced by a series of reports from international, often UN-affiliated, organizations, triggering a wave of investment in ecosystem services research. Between 2008 and 2015, the European Commission invested over €80 million in ecosystem services research through the BiodivERsA network, a consortium connecting various research funding agencies involved in European biodiversity research. Additionally, the EU 7$^{th}$ Framework Programme allocated more than €300 million to ecosystem services research between 2007 and 2013 (Brunet et al., 2019). As new funding and publishing opportunities emerged, many ecological scientists reoriented their work toward ecosystem services research, sparking a collective enthusiasm reflected in a rapid surge in publications and a research buzz around the topic. The following quote from a senior economist, who had worked on ecosystem valuation before its mainstream

rise and later returned to the field, illustrates this enthusiasm and hype, particularly evident in the use of interjections and exclamatory sentences:

> "I was surprised by the explosion of the paradigm! I made a break in this domain of research in 2000 and started to go back to it in 2006. And WOW! I just wanted to refresh my references, and it was just impossible! The number of publications had [...] It was exponential! From 2000 to 2005, Bang! It exploded!" (interview with a Senior Economist).

However, this emotional culture of excitement and opportunism also gave rise to disappointment and frustration. As the hype intensified, more researchers began relabeling their work to align with ecosystem services, often without deep engagement in the field. Senior researchers, already familiar with the cyclical rise and fall of research trends, criticized this pattern, warning that over-concentration on trendy topics inevitably overshadowed other important approaches. The emotional cultures of anxiety presented in the two previous sections further reinforced the hype-driven emotional culture fueled by research funding agencies. Researchers facing declining public funding and fierce competition for permanent positions were increasingly incentivized to follow research trends, in order to gain easier access to grants and publications. At the same time, the underlying emotional culture of eco-anxiety, fueled by the ecological crisis, pushed researchers to invest their hopes in emerging research areas that promised to deliver societally relevant solutions. Although emotional cultures represent patterned forms of emotional experience around specific research practices, they are shaped by broader dynamics in contemporary research — and are therefore influenced by other emotional cultures.

In ecological sciences, the intersecting emotional cultures of professional uncertainty and existential concern reinforced the culture of hype while eventually leading to disillusionment. As ecosystem service research became increasingly standardized and lost its specificity, those who had hoped for more substantive solutions felt annoyed and frustrated (see Brunet, 2024). The example of ecosystem services research illustrates that applying for funding in today's academic system is shaped by an emotional culture that combines optimism and ambition with opportunism and frustration. While enabling rapid growth in specific areas, this emotional culture raises important questions about epistemic diversity and the long-term exhaustion in researchers' emotional lives as they attempt to follow such trends.

### 4.2 Emotional Culture of Excitement and Restraint among Reviewers in Funding Agencies

The emotional culture fostered by applying for research funding differs sharply from the emotional culture enacted during the evaluation of grant proposals (Müller, 2014b). Focusing on two prestigious European funding programs, the European Research Council (ERC) and the Marie Skłodowska-Curie Actions (MSCA), we argue that an emotional culture of focused excitement and emotional restraint characterizes evaluation for research funding. Drawing on over 30 semi-structured interviews[3] with reviewers and the examination of institutional doc-

3. Interviews were conducted as part of the research project "Evidence for Excellence" with 23 panel members from the European Research Council (ERC) and 21 reviewers for the Marie Skłodowska-Curie Actions (MSCA), including 12 external reviewers and 9 vice-chairs. Participants represented diverse disciplinary backgrounds across the physical sciences, life sciences, and social sciences and humanities, and had experience evaluating proposals in various panel settings. The project was supported by funds from the Chair of Science & Technology Policy (Prof. Dr. Ruth Müller), TUM, and the TUM Gender & Diversity Incentive Fund. It was further associated with, and intellectually supported by, the DFG research group 2448 "Practicing Evidence — Evidencing Practice".

uments, we show that proposal evaluation is shaped by an emotional culture that fluctuates between excitement and restraint among reviewers (Brunet & Müller, 2024). In both ERC and MSCA programs, panelist reviewers are tasked with assessing a large volume of proposals within tight deadlines. In the ERC, panelists initially evaluate a number of high-quality proposals individually, often outside their topic-specific areas of expertise, before gathering in Brussels to collectively decide which proposals should advance to a second round of extensive evaluation, which also includes external reviewers and applicant interviews. In contrast, the MSCA evaluation process accommodates the high number of proposals by organizing asynchronous meetings between reviewers in an online platform, strictly overseen by members of evaluation panels. Across both settings, the emotional culture of excitement for new ideas only partially conceals the intense emotional work performed by reviewers to restrain from expressing specific emotions. This emotional culture of excitement and restraint reflects what sociologist Arlie Hochschild (1983) termed "feeling rules", intersubjective emotional norms prescribing how emotions should be experienced and expressed across different evaluation contexts.

Specifically, we identified four distinct feeling rules that govern the evaluation for research funding, without presuming that these feeling rules are the only ones or that they are present in all evaluative settings. These feeling rules show that peer review is an intensely emotional moment in academic life, with its own specific emotional culture. First, reviewers often describe the activity of evaluating a large volume of proposals in a short period of time as exhausting and boring, but are energized by the excitement of encountering novel ideas and innovative research profiles. However, panelists apply specific rules to manage this excitement, particularly when evaluating applicants from certain institutions and countries or those with research approaches similar to their own. Expressing too much excitement or irritation toward these applicants can be seen as compromising the panelists' perceived neutrality in the evaluation process.

Second, after the individual evaluation phase, ERC panelists gather in Brussels for deliberations, during which they define a feeling rule of mutual respect toward other panel members, which forbids the expression of anger. This feeling rule enables panelists to disclose divergent opinions without creating conflicts with panelists from different disciplinary and methodological perspectives. It supports the coexistence of different regimes of valuation, which is essential for the panel's interdisciplinary work. The importance of this norm is illustrated in the way the following panelist in social sciences describes a "bad" panelist as someone who is "narrow-minded". In the excerpt below, this panelist explains that mutual respect is essential for navigating the epistemological diversity of the panel, where disciplinary boundaries have been continuously negotiated and reorganized by the ERC (Brunet & Müller, in prep.):

> "My experience is that the usual ERC panelist is not the narrow-minded type, but is able to accommodate perspectives from other disciplines and look beyond that. There are always a few exceptions, but the general trend is that panelists are very open-minded and are respectful to different disciplinary approaches. They are open to be convinced by the arguments of other panelists" (ERC Panelist in Social Sciences).

Third, in MSCA, panelists define a feeling rule of attentiveness and commitment during online, asynchronous evaluations, aiming to ensure the evaluation's quality. Conducting evaluations in an online and asynchronous format presents particular emotional challenges for panelists, who note the struggle of sustaining focus and regulating their emotions. These challenges

can potentially create conflicts among reviewers and lead to their disengagement from the review process. In addition, MSCA panelists also reported instances where reviewers appeared insufficiently invested in the evaluation process — for instance, when they aligned too quickly with other reviewers without defending their own assessments. The feeling rule of attentiveness and commitment is therefore intended to mitigate such issues by encouraging thoughtful and consistent evaluations despite the constraints of the digital format. A fourth feeling rule is formulated by ERC panelists during the second round of evaluation, where they interview applicants. In this setting, ERC panelists define a feeling rule of modesty, humility, and absence of overconfidence for interviewed applicants. Panelists assess how applicants manage expressions of arrogance and anger to control applicants' socialization and screen for values incompatible with collective research, such as egoism and narcissism. By evaluating how applicants regulate pride, panelists attempt to standardize the evaluation of achievements across genders, recognizing that women may display less pride in their achievements and may therefore be disadvantaged compared to men.

In grant proposal evaluation, research funding is shaped by an emotional culture of excitement and restraint that demands constant emotional work to produce emotional expressions deemed appropriate by one's peers. In this critical site of academic life, researchers regulate their emotions to uphold the image of neutrality and to align with a set of moral values considered essential to maintaining the integrity of the evaluation process. Although emotional cultures surrounding grant applications and evaluations are central to contemporary academic life, they also reflect deeper tensions, as researchers navigate competing values and institutional demands, often resulting in conflicting emotional experiences.

## 5 Conclusion

How do emotions make knowledge? Our analysis reveals the critical role that emotional cultures play in diverse academic practices today. In a time marked by precarious scientific careers and urgent environmental challenges, the concept of emotional cultures allows us to examine how shared emotional norms and practices shape the professional experiences of researchers. By focusing on emotional cultures, we shift the analysis beyond individual feelings to explore how collective emotional experiences are produced by current academic working conditions. Our approach draws attention to how emotions are not simply private or irrational experiences but socially patterned forces that influence how knowledge is produced, circulated, and evaluated in scientific communities. Emotional cultures provide researchers with repertoires for interpreting their experiences, whether of hope, anxiety, frustration, or enthusiasm, and thus become central to how scientists orient themselves in their professional environments. Importantly, our analysis of emotional cultures in contemporary academia demonstrates that emotions have epistemic effects, profoundly influencing the type of research that scientists pursue and that reviewers find worthy of funding. Researchers live and work in epistemic cultures that are fundamentally emotional, whether they are precarious postdocs balancing the risks of their projects, ecological scientists driven by the promises of novel solutions to the ecological crisis, or reviewers managing both excitement and boredom through cultures of emotional restraint. These cultures shape not only what kinds of questions are seen as valuable but also what types of researchers are perceived as competent and accepted by their peers. Far from being peripheral to research practices, emotions thus function as tacit governance tools to regulate academic life.

Although emotional cultures may seem invisible or distant, they play an essential role in governing researchers' work and fostering the emergence of specific academic selves. These selves can manifest in the commitment to particular ecological research agendas or in the relentless desire to continuously publish and sustain career trajectories. Through emotional cultures, researchers learn what kinds of ambitions and frustrations are considered acceptable, and which ones must be concealed or reframed. The everyday labor of becoming a successful academic, therefore, involves not only intellectual work but also the emotional alignment with norms that are often specific to field and role. These include enthusiasm to engage with fundable topics, resistance to anxiety in the face of uncertain career trajectories, and humility in moments of peer review. Emotional cultures do not only shape what scientists do, but also who they wish to become. However, it is important to acknowledge that these emotional cultures are not imposed passively on researchers. Researchers actively enact them by exploring different strategies to manage their emotions and by defining tacit rules that prescribe how researchers should feel, particularly when confronting negative emotions in their work, such as anxiety and boredom. Although largely unspoken, these feeling rules are also constantly reinterpreted in different settings, from grant writing and peer review to fieldwork and career-making. Being a researcher thus demands intense emotional management, as individuals navigate multiple roles and responsibilities while living with a constant sense of crisis, whether in research or ecological contexts. In that sense, studying emotional cultures opens spaces for criticism and care toward contemporary academic practices. By reflecting on emotional management strategies and renegotiating emotional norms, researchers can challenge dominant modes of valuation or reject ingrained academic practices that are harmful to the production of responsible academic selves.

By shedding light on emotional cultures in academia, we hope that our analysis can contribute to developing a lively research agenda in STS and beyond on how emotions shape and are shaped by transforming cultures in science. Understanding the emotional dimension of academic life is essential not only for grasping the current organization of knowledge production, but also for imagining other academic futures. Such alternative emotional cultures of research could better support emotional well-being, confidence in the pursuit of academic careers, personal, under-hyped, curiosity-driven projects, and renewed care for the world we study and the colleagues we work with.

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