6 Meta-Generic Imaginings: Using Meta-Genre to Explore Imaginings of Doctoral Writing in Interdisciplinary Life Sciences

Sara Doody
University of British Columbia

Abstract: This chapter explores how doctoral writing is currently imagined in interdisciplinary life sciences doctoral programs (e.g., biophysics, computational biology) and aims to present avenues for how writing might be re-imagined in these contexts. Conceptualizing writing from a rhetorical genre theory perspective, which views writing as social and situated action, I explore meta-genres that dictate how writing is imagined and enacted in interdisciplinary doctoral programs. Using meta-genre analysis to explore how writing is imagined, talked about, conventionalized, and experienced, this chapter traces how deeply engrained and taken-for-granted assumptions about interdisciplinary writing may have significant consequences for doctoral writers. Imaginations of interdisciplinary writing as "translating," "simplifying," and "clarifying" that pervade talk about writing exist in contradiction with how writing is experienced by students. This *arhetorical* talk about writing serves to occlude the complex, situated, and deeply social negotiations interdisciplinary writers must engage in to work across disciplinary boundaries. In pointing out hidden contradictions between dominant imaginings of writing and writers' experiences, this chapter suggests that meta-genre offers potential to facilitate a rethinking of interdisciplinary writing. As a resource that encourages writers to critically reflect on how they are situated and how this situatedness impacts their writing practices, meta-genre has the potential to be an empowering resource for doctoral writers to peel away writing's arhetorical façade and engage in meaningful rhetorical activity.

DOI: https://doi.org/10.37514/INT-B.2021.1343.2.06

Research on doctoral writing has largely aimed to provide pedagogical interventions and aids for writers who are often (unfairly) burdened with the expectation that they should have learned how to write properly sometime before the doctorate (Starke-Meyerring, 2011). With writing often blamed for doctoral attrition, scholars of doctoral pedagogy have argued that doctoral writing is inherently social and a way of initiating doctoral writers into the very communities they are attempting to enter (Aitchison & Lee, 2006; Kamler & Thomson, 2014; Lee & Boud, 2009; Paré et al., 2011). Understanding writing as a way of entering into particular scholarly discourses and communities has led to the development of interventions, policies, and strategies aiming to provide doctoral students with support, often by attempting to change assumptions about doctoral writing from *writing up* to *writing into* (e.g., Aitchison & Guerin, 2014; Kamler & Thomson, 2014; Lee & Boud, 2009; McAlpine & Amundsen, 2011). This notion of writing into, while productive, has focused largely on what might be considered siloed disciplines: groups with fairly stable and established—albeit often implicit—expectations about writing (Starke-Meyerring et al., 2014; Thurlow, Chapter 5, this collection). In interdisciplinary programs, which are becoming increasingly common worldwide (Nerad & Heggelund, 2008), this way of thinking about students writing into only one scholarly research community becomes more complex and offers a site for reflection about the way doctoral scholarship conceptualizes and imagines doctoral writing.

Interdisciplinary programs are locales where previously siloed disciplinary ways of knowing and doing interact theoretically or methodologically with the overall aim of addressing questions with interrelated or linked components (Newell, 2013, p. 31). Because interdisciplinary programs involve the interaction of several disciplines, students in such programs are faced with communicating across diverse assumptions and practices (Brodin & Avery, 2020). Interdisciplinary doctoral writers are tasked with synthesizing and negotiating ways of knowing and doing from several disciplines (Boden et al., 2011)—a particularly tall order when disciplinary language may be interpreted differently across borders (Choi & Pak, 2007; Rogers et al., 2016).

This chapter reflects on contemporary imaginings of doctoral writing that seep into and deeply affect the everyday realities of interdisciplinary doctoral writers. My purpose is to interrogate the implications of taken-for-granted ways that doctoral writing is imagined in interdisciplinary life sciences doctoral programs (i.e., interdisciplinary programs focused on questions of biology and medicine, such as computational biology and biophysics) by focusing on writing that is not the dissertation. More specifically, I address the following questions: How is writing being imagined in interdisciplinary life

sciences programs at the doctoral level, and what are the implications of these imaginings for doctoral writers? Further, and significant for the purposes of this volume, how do the experiences of doctoral writers provide insights that aid us in re-imagining doctoral writing?

This chapter begins with a brief review of insights generated by doctoral scholars about the nature of writing in doctoral programs and outlines the way in which I have found it productive to conceptualize writing. It then explores the experiences of doctoral students enrolled in interdisciplinary life sciences programs in order to generate further understandings of how doctoral writing is experienced and imagined in these contexts. The chapter concludes by offering suggestions about how student experiences and insights might indicate fissures in institutional assumptions for doctoral writing in interdisciplinary programs that could be re-imagined in order to better facilitate and navigate writing in interdisciplinary spaces.

Rhetorical Genre Theory and Meta-Genre

To understand how writing is imagined, I find it useful to draw on a concept that explores assumptions and imaginings about writing more generally. In Janet Giltrow's (2002) concept of meta-genre, which emerged from rhetorical genre theory, she conceptualized *genres*—kinds of writing such as journal articles, grant proposals, and conference papers—as emerging and evolving historically within specific communities to pursue those communities' specific goals, shape the identities of their members to pursue these goals, and (re) produce the community itself (Coe et al., 2002; Freedman & Medway, 1994; Miller, 1984). Genres serve an important normalizing function within communities. As Anthony Paré (2002) has argued, the "automatic, ritual unfolding of genres makes them appear normal, even inevitable; they are simply the way things are done" (p. 59). Writing becomes hidden in plain sight because assumptions about writing are so routinized that we often fail to actually see them—we just inherit taken-for-granted rules about what writing is and what it does. The significance of this, of course, is that doctoral writing also gets trapped in normalized, common sense discourses of what writing is and what it does (Kamler & Thomson, 2014; Starke-Meyerring, 2011).

Meta-genres are repeated and regularized discourses that shape how we understand genres. Meta-genre, as conceptualized by Giltrow (2002), is "situated language about situated language" (p. 190) and can be understood as "atmospheres of wordings and activities . . . surrounding genres" (p. 195). Social life is rife with meta-genres governing who can speak, when they can speak, what can and cannot be said, and so on. Sometimes, these rules are written down. In

elementary school classrooms, a poster with classroom rules reminds students to raise their hands to speak. Other rules are never articulated but are learned through observation. Young children may never see the rule "don't interrupt others" written down, but through behavioral reinforcement they learn interrupting is against the rules of the classroom. If we think about the classroom as a kind of genre, the rules about raising hands and not interrupting can be understood as meta-genres governing how the classroom functions, regardless of whether they are ever explicitly articulated. In higher education, we can see traces of direct situated language occurring in policy documents, procedures, and guidelines that control and regulate genre conventions and expectations (Starke-Meyerring et al., 2014). In fact, as Doreen Starke-Meyerring and her colleagues illustrated, policies and regulations about doctoral dissertations construct a particular idea of how a dissertation should be written and the nature of the writing itself, and these written rules can direct writers to produce the dissertation in a certain way. However, like the unwritten rules of elementary classrooms, the rules governing doctoral writing can also be unwritten.

To probe unwritten rules governing doctoral writing, I trace students' meta-talk to tease out unspoken assumptions regularized by meta-genres. Meta-talk is talk about genres and serves as an entry-point into the unwritten rules governing genre conventions and expectations. To return to my example of the elementary classroom, a teacher telling a student to use her inside voice is meta-talk regulating expectations about what volume is appropriate in the classroom. This meta-talk reinforces written and unwritten rules about when students can speak and what volume is appropriate in a classroom setting. In higher education and professional settings, this talk can be traced to written policies (e.g., institutional regulations) (McNely, 2017). Eliciting meta-talk from doctoral students illustrates the kinds of regularizing conventions that dictate how writing is imagined. Exploring where meta-talk might be naturalizing "highly contingent practices" (Giltrow, 2002, p. 201) offers an entry-point to examining how doctoral writers might resist or push back against imaginings of writing that sit uncomfortably, or don't fit at all, with their experiences writing in an interdisciplinary program.

Understanding meta-genres surrounding doctoral writing is useful because although writing is a normalizing force, it also has the potential to evolve, develop, and decay (Bazerman, 2000; Devitt, 2004; Schryer, 1993). In looking at meta-genres surrounding interdisciplinary doctoral writing, there is the potential to expose what kinds of shifts, cracks, or tensions may be happening in how writing is imagined. Being aware of meta-genres that occlude or naturalize "highly contingent practices, may not be bad in itself, but, rather, a sign of unspoken negotiations among conflicting interests," (Giltrow,

2002, p. 201). In other words, meta-genre may control what kinds of writing can happen and how they happen in such a way as to sweep any evidence of discord or disagreement under the rug. Furthermore, because rhetorical genre theory understands genres as sites of power and ideology (Coe et al., 2002; Paré, 2014) where beliefs, assumptions, and practices are (re)produced, meta-genres indicate what kinds of common-sense assumptions are privileged and normalized. For my purposes, exploring the assumptions regulated by meta-genres in interdisciplinary life sciences doctoral programs is one way of understanding how doctoral writing is currently imagined and whether there are tensions or frictions that may indicate a meta-genre in conflict—and, thus, avenues for re-imagining writing in these spaces.

Methods

The data discussed here were generated from a larger study that explored writing in interdisciplinary programs at a Canadian research-intensive university where the study received approval from the institution's research ethics board. I interviewed students from a range of interdisciplinary life sciences programs—programs such as biophysics, computational biology, bioinformatics, and developmental biology. Researchers in these programs employ interdisciplinary approaches to health and medicine (e.g., cell development, cancer research, evolution). Although this study generated a number of data sets, here I am interested in the experiences of doctoral students to understand how written and unwritten rules about writing shape the way that writing is imagined. Because my focus is on how *writing* is imagined, students' experiences serve as an entry-point to more general assumptions about writing. The data reported here are drawn from a series of three semi-structured interviews with five doctoral students from three interdisciplinary programs: biophysics, computational biology, and developmental and evolutionary biology.

As a doctoral student myself at the time of the interviews (albeit one in education, not in science), my interviews with science doctoral students tended to evolve into extended conversations about writing and the doctoral process in general. I found that much of the talk elicited during interviews was meta-talk, rich with conventions, proscriptions, and taken-for-granted rules about writing. To trace meta-talk, I used the following framework based on rhetorical genre analysis guidelines (e.g., Devitt et al., 2004) to guide my analysis of interview data:

- How do students imagine writing in interdisciplinary programs? How do they talk about interdisciplinarity?

- How do students understand the conventions of interdisciplinary writing? What proscriptions, warnings, or advice shape these understandings?
- How do students contend with possible variations of practices and beliefs across disciplines?
- How might meta-talk reveal frictions, tensions, or contradictions about interdisciplinary writing?

Meta-talk emerging from these interviews provided a means of understanding the discourses and meta-genres shaping students' encounters with writing.

Since my goal is to understand how institutional imaginings of writing shape doctoral students' everyday experiences with writing, I have made a conscious decision not to focus on individual students in this chapter. While I admit this does limit the depth I can provide about specific individuals, I am more concerned with what their experiences as a whole indicate about imaginings of doctoral writing. I have redacted potentially identifying information about participants and their research by inserting "[X]" where statements including this information would have occurred.

I should also note that, in response to recent calls for broadening understandings of doctoral writing (e.g., Paré, 2017; Porter et al., 2018), I do not limit my definition of doctoral writing to the dissertation. While certainly a milestone text within the doctorate, the dissertation comprises only one kind of writing that students I interviewed were expected to produce.

Imagining Interdisciplinary Writing: Explaining and Translating

As a starting point in discussing how interdisciplinary doctoral writing is imagined, I want to share some of the ways that doctoral students spoke explicitly about writing, often in response to my inquiries about the process of writing to a diverse disciplinary audience. Many instances of meta-talk emerged when I asked students about their writing directly, and, perhaps unsurprisingly, students shared very similar ways of articulating their thoughts about writing. Students seemed to use two ideas most often to describe what they were doing when writing within an interdisciplinary program: *explaining* and *translating*.

When I asked students about writing in an interdisciplinary context, many of them spoke about writing as a matter of explaining concepts clearly and simply. One student, talking about re-writing a section of a manuscript on computational methods while collaborating with a biology lab, emphasized

the importance of explaining their approach clearly to readers:

> I think it goes back to the idea of having to figure out how to explain the analyses and doing it in a way that's *accessible* to them so that they also understand . . . what's being done to their data but also can point out if there's something that, in a biologically motivated way, doesn't make sense.

This statement suggests that, for this student, writing about a new computational approach for a new disciplinary audience was a matter of making it *accessible*. The writer's goal was to ensure that a method is described in writing in such a way that biologists can read it and understand what's being done to the data and in such a way that makes the explanation simple.

Students also seemed to understand writing in an interdisciplinary program as a process of translating. Often, writing to diverse disciplinary audiences was described as a process of taking ideas from one discipline and translating them for another by using different vocabulary or jargon. For example, one student stated,

> I think the big challenge for me is I'm finding myself doing a lot of learning but also trying to translate all these ideas that I know are, like we were talking about earlier about having to . . . there's like two entirely not necessarily overlapping vocabularies in these two areas, so it's been a lot of practice in learning how to communicate things I know and have used in my analysis in ways they will understand and also trying to incorporate the fact that they have a ton of biological knowledge that I am not coming in with.

In this case, where there are "two . . . not necessarily overlapping vocabularies," writing was still positioned as a means of explaining one concept or idea; that is, the assumption appears to be that there are different disciplines but just one way of writing—doctoral writers need only use different words to describe the phenomena under investigation to interdisciplinary audiences. Writing, then, becomes a process of simply re-wording research so that it can be incorporated into other disciplinary approaches.

Speaking further on this process of translation, another student underscored its value as well as how integral the entire communicative process was to good interdisciplinary research:

> And I guess my point is, I think that a lot of good interdisciplinary science, and I have a lot of—I think good interdisci-

> plinary communication, if it is clear and straightforward, then if there was an audience for actually reading this kind of stuff, the idea that these things face an actual barrier I think is a lot less. I think the barriers are kind of like when you read a developmental biology paper and—I mean some of them are really good, other ones are just crap. *So especially if you read the crap ones, you're like, this is impenetrable, and of course you need some sort of translation* [emphasis added]. . . . I guess, if you're talking about—if you're trying to communicate this paper to someone else or something else, it's about . . . translation's just that communication. I want to say, colloquially, it might be dumbing down? But I would also say it's cutting out the crap.

Again, this student positioned interdisciplinary writing as a matter of translation, as ensuring that ideas are as clear and straightforward as possible. Writing, here, is understood as being, on a fundamental level, the same no matter where students are writing or to whom (Berlin, 1988). All of this talk suggests that interdisciplinary doctoral writing is imagined in a very specific way, one that does not view writing as being situated or value-laden but as taking ideas and knowledge from one discipline and transposing them, uncomplicatedly, to another. Characterizing interdisciplinary writing as simply translating or "dumbing down," however, can lead to challenges when this characterization prevents writers from imagining writing as "an *explicitly* rhetorical process" (Tardy, 2005, p. 336).

Indeed, students' talk about writing in interdisciplinary programs suggested that so long as they wrote clearly, explained well, and avoided overusing jargon, any member of their interdisciplinary community should have been able to read and understand their writing. This echoes what remains a dominant way of imagining writing in higher education. Writing appears, in theory at least, divorced from situation and inherited assumptions (Rose, 1985). Interdisciplinary writing is, in other words, imagined to be arhetorical: any writing a doctoral writer produces, no matter where it was written, who wrote it, or who will read it, has the potential to be understandable and readable if only students could write clearly, translate appropriately, and explain properly (cf. Nystrand et al., 1993; Russell, 2002).

Students' Meta-Talk Suggests Interdisciplinary Writing is Imagined Arhetorically

Based on students' talk about writing, this practice is imagined as being separate from situation—writing, so long as it is done clearly, should be able

to transcend disciplinary boundaries. Imagining writing in this way, that is arhetorically, places additional demands on doctoral writers. Most notably among these demands is how arhetorical assumptions about writing occlude the socially situated and non-neutral nature of writing. Arhetorical imaginings mask the rhetorical nature of writing in common sense assumptions, creating a paradox where writing should be easy, but where doctoral writers struggle in silence (Starke-Meyerring, 2011). For participants in this study, this paradox was particularly significant as dominant arhetorical imaginings of writing appeared to sit very uncomfortably with how doctoral students actually experienced writing in these interdisciplinary doctoral programs.

For instance, although much of students' meta-talk described writing as a simple process of communicating ideas to diverse interdisciplinary audience involving translating and explaining ideas as simply as possible, students also frequently complicated this. One student explained:

> I feel there is not so much talk about what other writing there is than before the manuscript or before even the mini-publications like posters and stuff. And I find I tend to take really copious notes just on a daily basis and I think that helps clarify my thinking, but I don't—I have tried to ask, how do you do this? How do you think about your project? What's your process? And people don't give good answers! [laughs]

Framing interdisciplinary writing as translating and explaining occludes the rhetorical activity doctoral students must engage with; that is, it hides the social and situated nature of writing. Occluding meta-talk creates additional demands for navigating the diverse expectations of an interdisciplinary audience. When interdisciplinary students write, what they are producing is never as straightforward or simple as the dominant way of imagining writing. Indeed, the meta-talk produced by students suggests that writing should be simple, but it isn't. Meta-talk that promotes an imagining of writing as simple and clear is not unique to interdisciplinary programs (see Starke-Meyerring, 2011). Yet, the implications of such imaginings are significant for interdisciplinary doctoral writers: With the expectations of *several* disciplines occluded, students are left with few resources to articulate or negotiate diverse disciplinary expectations about writing.

Although the meta-talk students produced about their writing echoed what we currently know about how writing is imagined in doctoral education (Kamler & Thomson, 2014; Starke-Meyerring, 2011), there were several instances where dominant imaginings of writing did not seem to fit with how these doctoral students experienced writing. In fact, when students shared

what they were actually doing when they were engaged in writing, they painted a substantially different picture than their meta-talk suggested. Instead of being a simple and straightforward process, doctoral students' experiences suggested that writing was often fraught and complex. The contrast between expectations about writing emerging from arhetorical imaginings and students' experiences indicates that interdisciplinary doctoral writing is a much more complex, situated, and non-neutral enterprise than students' meta-talk reveals (Bawarshi, 2003; Coe et al., 2002; Paré & Smart, 1994).

Indeed, probing students' normalized assumptions about interdisciplinary writing revealed that this practice often involved tension and struggle. As the following excerpt illustrates quite powerfully, dominant assumptions that writing for interdisciplinary audiences is a matter of translating cannot account for the complex rhetorical work actually involved in writing to diverse disciplinary readers:

> *Student*: I really felt the hardest part [of writing this article] was saying how [we] interpreted our results, like pinpointing "we saw this in the data and therefore we think this" about the tumour and how it originates.
>
> *Researcher*: Why would that have been the tricky part?
>
> *Student*: Maybe part of it is because our data, or I guess our logic, was we would study the normal [X] and try and use different computational strategies to match the tumour to the normal [X]. So, there's no real—I think there was a lot, what is the word I'm looking for? There's a lot of precise pieces of information and logic to hold in your head. . . . I think maybe it just takes some background to interpret the results. So figuring out how to communicate that to the reader was hard. . . . I guess to go a little bit further, the idea of the project is we have these different [X] tumours, and we think they start in specific cell types [X], and each tumour type probably starts in a different type of cell, and the idea is to identify those cells. So, yeah, I guess it was making the leap from we say this match of this tumour type to this type of cell to this implies that this tumour starts in *this* cell type at *this* age and so on. I don't know if that makes sense, I think that's where I felt . . . yeah.

This student described "making a leap" between different kinds of logic—that is, between different epistemological approaches to crafting an argument (see

Tardy, 2005). In this case, it was not enough to simply take an approach used in computational research and translate to oncologists and biologists because it was not just the language that needed to change. Instead, the entire logical foundation for why the claim was valid had to be recast in terms and epistemic foundations that both biologists and oncologists could recognize. Thus, the student had to engage in the difficult process of transforming a knowledge claim. That is, for the claim to be accepted by an interdisciplinary audience, the student had to argue for the computational approach in a way that would be meaningful to a group of scientists with differently situated goals, interests, and values (cf. Blakeslee, 2001). The claim had to be fundamentally transformed in order for scientists from different disciplinary backgrounds to understand its value. The tricky part for writers, though, is that the process through which students engage in this argumentation is occluded by dominant imaginings of interdisciplinary writing as translating or as simple.

Because the rhetorical nature of interdisciplinary writing is hidden by dominant arhetorical talk, doctoral students were left without resources to engage in writing as a rhetorical process. That is, they were left without resources to see writing as a tool of constructing and arguing knowledge across disciplinary boundaries. Dominant imaginings of interdisciplinary writing forced doctoral students into difficult positions when they were expected to bridge disciplines by translating science and encounter fundamental epistemic differences between disciplines. Since students were left without rhetorical know-how (e.g., how to transform disciplinary knowledge), they had no way of negotiating or engaging with unfamiliar disciplinary audiences. As one student said,

> To a certain degree I feel like I have to bridge [expectations]. But I also feel like it's a bunch of pretentious experimental biologists being pretentious. The first place I really found this out was when I had a discussion with a professor during my master's [program]. And he was an experimental biologist, and he articulated for the first time, really *fully* articulated, this idea in which you can't really know something unless you experiment, which is a bias in a lot of sciences. . . . I was like, you know, that's not right. Evolution was, at least for Darwin, not necessarily for Wallace, was sparked by the fact that a bunch of birds he took from Galapagos were identified as finches. That's not an experiment. That's an examination of reality and was formed by somebody who has an expertise in taxonomy which, by definition, you can't really experiment.

When faced with bridging expectations, this student encountered a funda-

mental epistemological difference between the two disciplines for which they were supposed to be writing.

This difference was even clearer when a student talked about feeling some hesitation when collaborating on a manuscript with biologists because the way an analytical approach had been written into the paper seemed misleading:

> They [the biologists] gave me a draft of the manuscript when they asked if I'd like to work on this project with them, and I thought the section, coming from a computational biology side, I didn't think it was —there were parts that were not accurate, I thought there were parts that were done incorrectly, and I also thought there could be more *drawn* out of the data. This part they especially agreed on, so part of—I would say I didn't necessarily *need* to be involved in the writing here. I really, in general I would say I enjoy writing and so I would have been happy if they'd asked. But also part of it was I didn't want my name on something that I thought was incorrect and I didn't want them to write up my results that they probably possibly didn't fully understand and to have that conflict. So I think I've really appreciated that. . . . It was tricky because when I first got a look at the analysis that had been done, I was like, oh, I'm not so sure about this, I would actually reconsider this. I know this is done a bit . . . questionably.

The tension here became evident when this student, despite wanting to be involved in the project and wanting to write the accompanying manuscript, talked about not wanting their name on an iteration that seemed incorrect, where the biologists on the team had not fully understood a conflict in the paper.

This student's statement suggests that interdisciplinary doctoral writers are working within imaginings of writing where epistemic tensions are hidden. It suggests there is no room in interdisciplinary collaboration for conflicting ideas about how science should be written. Thus, writers are forced to work within a set of assumptions that positions science writing as tension-free and are forced to avoid producing writing that might pose a threat to colleagues (Myers, 1990). Based on this particular experience, it appears that doctoral writers are left trying to navigate conflicting norms and standards within a set of assumptions that "occludes or tactfully or timidly evades, or naturalizes highly contingent practices" (Giltrow, 2002, p. 201). The way that interdisciplinary doctoral writing is imagined as translating and explaining hides the complex behind-the-scenes negotiations that go into writing

in interdisciplinary programs. It also leaves doctoral students to shoulder additional demands because the rhetorical nature of writing is hidden. In this example, although writing with interdisciplinary colleagues *should* be easy, the student was resistant to putting their name to the manuscript without making specific revisions. This resistance indicates that beneath the surface, writing in interdisciplinary programs is fraught with tension and negotiation. Moreover, doctoral writers are often faced with confronting these tensions with limited access to or awareness of disciplinary knowledge and writing practices (Paré, 2011). As such, doctoral writers are left to face tension and conflict largely on their own.

The arhetorical nature of explicit meta-talk in interdisciplinary doctoral programs of course has consequences for how students understand writing and whether they are able to access and translate this discursive knowledge into practice (Giltrow, 2002, p. 190). But it also has implications for emerging scholars, for doctoral writers, in these programs. As Giltrow (2002) has written, meta-genre "may only reinforce insiders' mutual understandings while estranging newcomers from this consensus. And this may be especially so when students hear the same workings in different disciplinary contexts" (p. 196). In other words, because meta-genre has a powerful regulating power, it can prevent newcomers from figuring out what's really being regulated in the first place, especially if the meta-genre is reinforcing arhetorical assumptions about writing. For interdisciplinary doctoral students, this is especially worth noting because an arhetorical meta-genre, an arhetorical way of imagining writing, prevents students from translating "tacit know-how into discursive knowledge" (Giltrow, 2002, p. 190); that is, it prevents students from having rhetorical conversations about writing, conversations that could prove productive in navigating diverse expectations about and approaches to writing.

Closing Reflections: Room for Re-imagining?

To close this chapter, I want to turn to how interdisciplinary doctoral programs offer us a space in which to re-imagine doctoral writing. Students' meta-talk about writing, as I have illustrated, suggests strongly engrained meta-generic imaginings in interdisciplinary programs—ones that prefer to timidly evade tensions and frictions to maintain a façade of simplicity. But, as Giltrow (2002) suggested, in hiding what students are actually *doing* when they are engaged in writing, meta-genres prevent students from articulating tacit tensions in an explicitly discursive language. Arhetorical imaginings of interdisciplinary writing position the practice as deceptively simple, and, in avoiding the complex negotiation interdisciplinary writers seem to be doing,

doctoral writers often struggle to articulate implicit knowledge. Students get stuck when they are forced to work within the assumptions that interdisciplinary writing is a matter of translating and explaining. Yet, as students pointed out, translating and explaining concepts were not enough to overcome tensions between different disciplinary expectations about writing and left them struggling to negotiate hidden rules that have developed in distinct disciplinary traditions. In short, the meta-generic imaginings in these interdisciplinary doctoral programs regulate an imagining of writing that actively occludes the tensions students encounter.

Given the consequences of these meta-generic imaginings, how might we begin to address them by re-imagining what doctoral writing is and does in interdisciplinary contexts? Students' experiences as reported in this chapter reinforce the need for supervisors and lecturers to, as Starke-Meyerring (2011) argued, "[recover] writing from its cloak of normalcy and . . . [create] an environment for writing grounded in a solid research base" (p. 92). Instead of having students practice generalizing or translating, we might encourage them to argue the logic of their ideas and convince their collaborators of their claims. Students are more likely to benefit from being provided with research-based pedagogy that strips back arhetorical talk and illustrates the situated, value-laden, and social nature of interdisciplinary communication. This pedagogy might include instruction in how to acknowledge contradictions between disciplinary practices and might offer practical guidance on transforming claims and embracing the epistemic tensions accompanying interdisciplinary research. In fact, the research reported here indicates that meta-genre offers a useful way of pulling writing from the margins of doctoral work and confronting writers' hidden practices and assumptions. That is, developing a language that allows students and their mentors to articulate and reflect on normalized imaginings of writing empowers them to question and critique these propositions (Lingard & Haber, 2002). Indeed, in talking to the doctoral students whose experiences I reported in this chapter, I noted that they became more aware of the contradictions and tension they encountered. Harnessing this awareness could be a critical way for students and their mentors to begin re-imagining doctoral writing as a social, non-neutral, and contested practice.

A re-imagining of doctoral writing might be facilitated by simply providing students and mentors with language that enables them to circumvent arhetorical imaginings. Doing so would make writers more aware of when they might be entering epistemologically fraught territory (Tardy, 2005) by peeling away arhetorical imaginings to confront the complex and unwritten rules students encounter when they negotiate disciplinary boundaries. Indeed, the concept of

meta-genre has powerful potential to aid re-imaginings of writing experienced by students working towards their doctorate. Current imaginings of interdisciplinary writing avoid tension and contradiction—two features that are integral to interdisciplinary research itself. In order to engage productively with these tensions, students and their mentors need a way of talking about writing that does not avoid these features. When provided with prompts forcing them to think beyond normalized imaginings, writers are offered opportunities to "give accounts of themselves, and try to come to a situated understanding of their activities, their positions vis-à-vis one another, the risks incurred and indemnities afforded as they compose" (Giltrow, 2002, p. 203). By peeling back normalized assumptions, doctoral writers are more likely to be able to translate hidden rhetorical knowledge into tacit instruction. This ability is particularly significant for doctoral writers transitioning into faculty and mentorship roles. When such individuals are given opportunities to critically re-imagine writing in interdisciplinary doctoral programs, they are better equipped to aid their students develop important meta-knowledge.

The students that I encountered encourage us to ask about how we might make the tensions they experience productive—how we might start gently asking questions of how to introduce space within interdisciplinary doctoral programs for dominant imaginings to be re-imagined in order to provide interdisciplinary doctoral writers with the space and opportunity to thrive.

References

Aitchison, C., & Guerin, C. (2014). Writing groups, pedagogy, theory and practice: An introduction. In C. Aitchison & C. Guerin (Eds.), *Writing groups for doctoral education and beyond: Innovations in practice and theory* (pp. 3-17). Routledge.

Aitchison, C., & Lee, A. (2006). Research writing: Problems and pedagogies. *Teaching in Higher Education*, *11*(3), 265-278. https://doi.org/10.1080/13562510600680574

Bawarshi, A. S. (2003). *Genre and the invention of the writer: Reconsidering the place of invention in composition*. Utah State University Press. https://digitalcommons.usu.edu/usupress_pubs/141

Bazerman, C. (2000). *Shaping written knowledge: The genre and activity of the experimental article in science*. The WAC Clearinghouse. https://wac.colostate.edu/books/landmarks/bazerman-shaping/ (Originally published 1988, University of Wisconsin Press).

Berlin, J. (1988). Rhetoric and ideology in the writing class. *College English*, *50*(5), 477-494. https://doi.org/10.2307/377477

Blakeslee, A. M. (2001). *Interacting with audiences: Social influences on the production of scientific writing*. Lawrence Erlbaum. https://doi.org/10.4324/9781410600097

Boden, D., Borrego, M., & Newswander, L. K. (2011). Student socialization in interdisciplinary doctoral education. *Higher Education*, *62*(6), 741-755. https://doi.org/10.1007/s10734-011-9415-1

Brodin, E. M., & Avery, H. (2020). Cross-disciplinary collaboration and scholarly independence in multidisciplinary learning environments at doctoral level and beyond. *Minerva, 58*, 409-433. https://doi.org/10.1007/s11024-020-09397-3

Choi, B. C. K., & Pak, A. W. P. (2007). Multidisciplinarity, interdisciplinarity, and transdisciplinarity in health research, services, education, and policy: 2. promoters, barriers, and strategies of enhancement. *Clinical and Investigative Medicine, 30*(6), E224-E232. https://doi.org/10.25011/cim.v30i6.2950

Coe, R., Lingard, L., & Teslenko, T. (2002). *The rhetoric and ideology of genre: Strategies for stability and change.* Hampton Press.

Devitt, A. J. (2004). *Writing genres*. Southern Illinois University Press.

Devitt, A. J., Reiff, M. J., & Bawarshi, A. (2004). *Scenes of writing: Strategies for composing with genres*. Pearson.

Freedman, A., & Medway, P. (1994). Locating genre studies: Antecedents and prospects. In A. Freedman & P. Medway (Eds.), *Genre in the new rhetoric* (pp. 2-18). Taylor & Francis.

Giltrow, J. (2002). Meta-Genre. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre: Strategies for stability and change* (pp. 187-205). Hampton Press.

Kamler, B., & Thomson, P. (2014). *Helping doctoral students write: Pedagogies for supervision* (2nd ed.). Routledge. https://doi.org/10.4324/9781315813639

Lee, A., & Boud, D. (2009). Framing doctoral education as practice. In D. Boud & A. Lee (Eds.), *Changing practices of doctoral education* (pp. 10-25). Routledge.

Lingard, L., & Haber, R. (2002). Learning medical talk: How the apprenticeship complicates current explicit/tacit debates in genre instruction. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre: Strategies for stability and change* (pp. 155-170). Hampton Press.

McAlpine, L., & Amundsen, C. (2011). To be or not to be? The challenges of learning academic work. In L. McAlpine & C. Amundsen (Eds.), *Doctoral education: Research-based strategies for doctoral students, supervisors and administrators* (pp. 1-13). Springer. https://doi.org/10.1007/978-94-007-0507-4_1

McNely, B. (2017). Moments and metagenres: Coordinating complex, multigenre narratives. *Journal of Business and Technical Communication*, *31*(4), 443-480. https://doi.org/10.1177/1050651917713252

Miller, C. R. (1984). Genre as social action. *Quarterly Journal of Speech*, *70*(2), 151-167. https://doi.org/10.1080/00335638409383686

Myers, G. (1990). *Writing biology: Texts in the social construction of scientific knowledge.* University of Wisconsin Press.

Nerad, M., & Heggelund, M. (Eds.). (2008). *Toward a global PhD? Forces and forms in doctoral education worldwide*. University of Washington Press.

Newell, W. H. (2013). The state of the field: Interdisciplinary theory. *Issues in Interdisciplinary Studies*, *31*, 22-43. http://hdl.handle.net/10323/4478

Nystrand, M., Greene, S., & Wiemelt, J. (1993). Where did composition studies come from?: An intellectual history. *Written Communication*, *10*(3), 267-333. https://doi.org/10.1177/0741088393010003001

Paré, A. (2002). Genre and identity: Individuals, institutions, and ideology. In R. Coe, L. Lingard, & T. Teslenko (Eds.), *The rhetoric and ideology of genre: Strategies for stability and change* (pp. 57-71). Hampton Press.

Paré, A. (2011). Publish and flourish: Joining the conversation. In V. Kumar & A. Lee (Eds.), *Doctoral education in international context: Connecting local, regional and global perspectives* (pp. 172-191). Universiti Putra Malaysia Press.

Paré, A. (2014). Rhetorical genre theory and academic literacy. *Journal of Academic Language & Learning, 8*(1), A83-A94. https://journal.aall.org.au/index.php/jall/article/view/313

Paré, A. (2017). Re-thinking the dissertation and doctoral supervision/Reflexiones sobre la tesis doctoral y su supervisión. *Journal for the Study of Education and Development/Infancia y Aprendizaje, 40*(3), 407-428. https://doi.org/10.1080/02103702.2017.1341102

Paré, A., & Smart, G. (1994). Observing genres in action: Towards a research methodology. In A. Freedman & P. Medway (Eds.), *Genre and the new rhetoric* (pp. 146-154). Taylor & Francis.

Paré, A., Starke-Meyerring, D., & McAlpine, L. (2011). Knowledge and identity work in the supervision of doctoral student writing: Shaping rhetorical subjects. In D. Starke-Meyerring, A. Paré, N. Artemeva, M. Horne, & L. Yousoubova (Eds.), *Writing in knowledge societies* (pp. 215-236). The WAC Clearinghouse; Parlor Press. https://doi.org/10.37514/PER-B.2011.2379.2.11

Porter, S., Young, L., Aarssen, L., Gibbs, R., Klein, R., Paré, A.,Ryoo, A., & Wood-Adams, P. (2018). *Report of the task force on the dissertation: Purpose, content, structure, assessment*. Canadian Association for Graduate Studies. https://secureservercdn.net/45.40.148.221/bba.0c2.myftpupload.com/wp-content/uploads/2018/09/CAGS-Dissertation-Task-Force-Report-1.pdf

Rogers, P. M., Zawacki, T. M., & Baker, S. E. (2016). Uncovering challenges and pedagogical complications in dissertation writing and supervisory practices: A multimethod study of doctoral students and advisors. In S. Simpson, N. A. Caplan, M. Cox, & T. Phillips (Eds.), *Supporting graduate writers: Research, curriculum, and program design* (pp. 52-77). University of Michigan Press.

Rose, M. (1985). The language of exclusion: Writing instruction at the university. *College English*, *47*(4), 341-359. https://doi.org/10.2307/376957

Russell, D. R. (2002). *Writing in the academic disciplines: A curricular history* (2nd ed.). Southern Illinois University Press.

Schryer, C. F. (1993). Records as genre. *Written Communication, 10*(2), 200-234. https://doi.org/10.1177/0741088393010002003

Starke-Meyerring, D. (2011). The paradox of writing in doctoral education: Student experiences. In L. McAlpine & C. Amundsen (Eds.), *Doctoral education: Research-based strategies for doctoral students, supervisors and administrators* (pp. 74-95). Springer. https://doi.org/10.1007/978-94-007-0507-4_5

Starke-Meyerring, D., Paré, A., Sun, K. Y., & El-Bezre, N. (2014). Probing normalized discourses about writing: The case of the doctoral thesis. *Journal of Academic Language and Learning, 8*(2), A13-A27. https://journal.aall.org.au/index.php/jall/article/view/295

Tardy, C. M. (2005). "It's like a story": Rhetorical knowledge development in advanced academic literacy. *Journal of English for Academic Purposes, 4*(4), 325-338. https://doi.org/10.1016/j.jeap.2005.07.005