

ENACTING CHANGE THROUGH EVERYDAY PRACTICES:
A LABORATORY ETHNOGRAPHY OF SCIENCE OTHERWISE AT CLEAR

by

Christina Crespo

(Under the Direction of Ted L Gragson and Patricia Richards)

ABSTRACT

The first step in working towards change is knowing that alternatives exist—that change is *possible*. I argue that seeing everyday possibilities in action can be a joyful rupture that catalyzes ethical learning and transformative change. I demonstrate this using almost five years of ethnographic research with the Civic Laboratory for Environmental Action Research (CLEAR). As an interdisciplinary feminist and anticolonial marine science laboratory, CLEAR works towards justice by changing science from *within* science. After introducing CLEAR and the values that inform their work, I describe a case study of a specific CLEAR project, citational politics. By tracing the project's development through lab meetings, I show that through CLEAR meetings, members learn other possibilities for what a meeting can be and do. I then continue the story of the citational politics project to explore how the process of engaging with citational politics can shape the type of scholar we become. I draw on Gloria Anzaldúa's theory of *conocimiento* to propose a framework for understanding how ruptures can initiate forms of learning that foster shifts in consciousness capable of catalyzing collective action. I conclude the citational politics project by discussing how joy can be a form of rupture than engenders *conocimiento*. In between each of

the chapters, I use interludes to provide background and context that connects to the surrounding chapters. I conclude by exploring what change can look like by addressing some of the common myths found in justice work. By doing everyday things, differently, CLEAR embodies possibility.

INDEX WORDS: Science otherwise; anticolonial science; feminist science; social change

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CHRISTINA CRESPO

B.S., University of North Florida, 2011

B.A., University of North Florida, 2013

M.S.Sc., James Cook University, Australia, 2015

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial
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CHRISTINA CRESPO

Major Professors:	Ted L Gragson Patricia Richards
Committee:	Nate Nibbelink Kecia Thomas Susan Tanner

Electronic Version Approved:

Ron Walcott
Vice Provost for Graduate Education and Dean of the Graduate School
The University of Georgia
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CHAPTER 1. INTRODUCTION

How do we continue with science after the critiques of science? —Deboleena Roy,
Molecular Feminisms

Critique is important but it can only take you so far when you are a practitioner trying
to do work in a good way—Max Liboiron, *Pollution is Colonialism*

Together, the opening quotes serve as the scaffolding on which this dissertation hangs. It is premised on the recognition that critiques of science are a starting place—an important one but a starting place no less—for efforts to define good science as science that *does* good. Events such as the COVID-19 pandemic and the Black Lives Matter movement have underscored the role that science plays in perpetuating inequality and the persistent disparities that scientists throughout higher education and later career stages confront. These aren't new issues, and numerous interventions have been implemented over the years to address them—from top-down initiatives and institutional policies to skill development workshops and mentoring networks. Yet, the proliferation of formal committees, academic conferences, and special issues that revolve around questions of equity highlight that the problems are far from solved. Nonetheless, the confluence of internal and external tensions placed on contemporary science has opened a window for doing science differently—for reimagining what science *is* and what it *could* be.

So, how do you *do* science differently and what happens when you do? My dissertation explores these questions through approximately five years of ethnographic research with the Civic Laboratory for Environmental Action Research (CLEAR). As an interdisciplinary feminist and anticolonial marine science laboratory, CLEAR works towards justice by changing science from *within* science. My research explores their methodological practices and social relations to better

understand how both science and scientists are made in CLEAR and the tensions between transformative change and social reproduction that occur through these processes.

In the rest of this chapter, I explore literatures that speak to the challenges and promises of “attempting to change dominant science while wearing a lab coat” (Liboiron 2021b, 115), introduce CLEAR, and outline the rest of what’s to come. I begin by explaining my approach to theory and theorizing. I then discuss my rationale for focusing on ‘science’ before exploring feminist science as an example of activism and science put into action. Together this work forms a framework for thinking about doing. The work not only critiques dominant science and the production of academic knowledge but also explores pathways to and possibilities for understanding and creating worlds and knowledge otherwise¹. Afterwards, I discuss the specific project at hand and describe my methods before concluding with an overview of the chapters to come.

This dissertation is about what becomes possible within a space intentionally designed to be better—to *do* better. It is about how we learn to make knowledge and how we shape knowledge in return (and how it shapes us in the process). It’s about collectively imagining how things *should* be and *experimenting* to make that happen. And it’s about the *internal shifts* that happen along the way.

Theoretical orientations. Orientations towards theory.

With critique as a starting point, this project was informed by multiple lineages of critical theory. The term ‘critical theory’ can bring with it an expectation of criticism or deconstruction²

¹ CLEAR is just one form of practicing science otherwise. There are numerous other examples out there, such as queer science, Zapatista science, or Indigenous science.

² As Patricia Hill Collins aptly laments, critical theorizing can be “synonymous with using deconstructive tools to criticize anything and everything without consequences” (2019, 79). Some forms of feminisms have perpetuated other forms of oppression in their efforts to address sexism (hooks 2014; McKittrick 2021; Mohanty 2003; Dhamoon 2015). Some anti-racist projects have bolstered colonialism and some Indigenous movements have been laced with anti-Black racism (Dhamoon 2015; King 2019; Tuck and Yang 2018). The

(Dumit 2012) and while there's a time and a place for this approach, that's not my primary goal here. This speaks to a distinction between critical analysis that "originates within academic assumptions that knowledge for knowledge's sake will somehow contribute to social change" and "critical analysis that has the practical intent of fostering social change" (Collins 2019, 118). My focus is on work that falls in the latter category.

As a result, my approach to theory is oriented towards practice and practical change. Sara Ahmed (2017, 14) recounts that as a student of critical theory, she "encountered the problem of how feminist theory can be feminism in theory." Under dominant framings, theory is assumed to be abstract— the more abstract, the more theoretical, and "the more abstracted it is from everyday life" (Ahmed 2017, 10). However, my work follows scholars in Indigenous studies, Black studies, and gender studies that have in different ways asserted that "theory can do more the closer it gets to the skin" (Ahmed 2017, 10; Anzaldúa 2015; Lethabo King 2021; King 2019; Tsing et al. 2017; Moraga and Anzaldúa 2015). As Gloria Anzaldúa (2015, 5) explains, "feminism is grounded not on incorporeal abstraction but on corporeal realities. The material body is center, and central. The body is the ground of thought." As a result, I approach critical theory, as with all knowledge, as inseparable from praxis³ (Ahmed 2017; Collins 2019).

ontological turn shifted academics' attention towards Indigenous ways of knowing and being, while simultaneously erasing the contributions of Indigenous academics (Todd 2016; Sundberg 2014). It can be easy to get lost in these conversations—falling down a rabbit hole of critique unto critique unto critique. Getting tangled in overlapping and conflicting webs of thought can erase the actual and material practices of making knowledge and working towards change. In navigating these troubled waters (and mixed metaphors), an ethic of incommensurability can provide some orienting directions (Liboiron 2021b; Tuck and Yang 2018). An ethic of incommensurability is one that "digs into difference and maintains that difference while also trying to stay in good relations" (Liboiron 2021b, 137; Tuck and Yang 2018).

³ Community-engaged scholar, Jamila Lyiscott consequently calls for "*concurrent* analysis, action, and advocacy, against white privilege...concurrent because there is a false binary between analysis and action, between activists and theorists, as though one can act responsibly without the deep method of thought or as though one can analyze social phenomena relevantly without engagement in our social realities; concurrent because too many who wish for racial justice are shackled by stagnant analysis with the thought that they must fully know and understand everything about whiteness and white privilege before taking action" (2019, xiii).

So rather than understanding this project *through* the lens of critical theory, I instead draw from justice as an orientation. Social justice projects can signal questions between scholarship and practice (Collins 2019) and demarcate diverse efforts that move between and across “the borders of academia and activism” (Nagar 2014, 2; hooks 2014). Eve Tuck and Wayne Yang explain that the category of ‘social justice’ has acted like “the ‘other’ box on surveys...a catchall term for those who find themselves outside of the sanctioned intellectual traditions” (2018, 5). While Tuck and Yang describe their feelings towards the term ‘social justice’ as a “warm ambivalence” (2018, 3), they also explain that it is a way to “mark a distinction from the origins and habits of almost all disciplines which emerged in the 19th and 20th centuries and are rooted in colonialism and white supremacy” (Tuck and Yang 2018, 4). Using the term signals an acknowledgement of structured inequities and a need for change (Lyiscott 2019; Tuck and Yang 2018; Collins 2019). As a result, “[s]ocial justice is not the catchall; it is the all” (Tuck and Yang 2018, 5). And while justice remains an imperfect label, as Tuck and Yang explain, “we use the words we can even when they disappoint or obscure” (2018, 2).

Critical theory is a starting point for both the work that I put forward and for those whose practices I’m studying. Here, theory is understood as materially grounded and inseparable from practice. As a result, I use justice instead of deconstruction as a guiding orientation to call attention towards efforts that bridge the line between activism and scholarship, between theory and practice. So how can justice serve as an orientation—how can you enact change in practice?

Damage to desire. Critique. Create.

“Deconstruct, **construct**” (Anzaldúa 1987, 82). This succinct quote reflects the approach to enacting change that I’ll be describing in this dissertation. Within the social sciences, a dominant framework for understanding and motivating social change has been ‘damage-centered research’ which “establishes harm or injury in order to achieve reparation” (Tuck 2009, 413).

However, scholars such as Eve Tuck, Ruha Benjamin, and Max Liboiron have called attention to the potential pitfalls of predicating your work on this theory of change. Likewise, Jamila Lyiscott's work calls attention to how "we often become so consumed by what we are fighting against that we hardly take time to truly envision the kinds of schools, communities, and societies that we are fighting for" (2019, xiv). As a result, instead of documenting damage, CLEAR focuses on building alternatives. This is in line with Eve Tuck's 'desire-based research' in which she asserts that desire not only "accounts for loss and despair," but also "the hope, the visions, the wisdom of lived lives and communities" (Tuck 2009, 417). CLEAR's approach could also be understood as an example of Lyiscott's "vision-driven justice" or J.K. Gibson-Graham's experimental approach to research "characterized by an interest in learning rather than judging" (2008, 628). I take a similar approach in this work.

What does this look like in practice? In this dissertation, I draw from stories and storytelling as a means for finding productive ways for moving towards new narratives (Subramaniam 2014; Benjamin 2016; McKittrick 2021; Tsing et al. 2017; Wilson 2008; Harrison 1995). As the editors of *Arts of Living on a Damaged Planet* assert, "creative writing invites us to imagine the world differently" (Tsing et al. 2017, M9).

Some scholars and scientists alike have experimented with *fiction* as a form of counter-storytelling⁴. For example, Banu Subramaniam (2014, 7) uses fiction as a reconstructive project of "undoing [her] disciplining." Ruha Benjamin (2016, 2) calls for "novel fictions that reimagine and rework all that is taken for granted about the current structure of the social world". Faye Harrison draws on the work of Alice Walker and others to explore how Black women's fiction "can provide insights into how writing culture can be both experimental and potentially liberating" (1995, 412).

⁴ Counter-storytelling is a tool that I encountered through LatCrit and Critical Race Theory (Solorzano and Yosso 2001; Delgado 1989). It's a method for challenging dominant narratives through the stories of minoritized voices. For an example of counter-storytelling in practice, see Solorzano and Yosso 2001.

As Harrison explains, “[f]iction encodes truth claims—and alternative modes of theorizing—in a rhetoric of imagination” (1995, 410). Rather than falsehoods, the fictions described in these examples are “relationships through which analysts experiment with different scenarios, trajectories, and reversals, elaborating new values, and testing different possibilities for creating more just and equitable societies” (Benjamin 2016, 2). Collectively, this work brings attention to what already is and what might be. Here, I use storytelling in place of fiction as a means for channeling these possibilities.

By moving from damage to desire, different futures can be enacted. Stories and storytelling are one way to move in that direction. As Katherine McKittrick surmises “sharing stories *is* creative rigorous radical theory. The act of sharing stories *is* the theory and the methodology” (2021, 71). CLEAR isn’t fiction, but it does show us alternative possibilities for what science is and could be. By shifting the lens from documenting damage to experimenting in practice, what becomes possible?

Why science?

These subversive beings wreck, scavenge, retool, and reassemble the colonizing university into decolonizing contraptions—la paperson, *A Third University is Possible*

Science and power have a complicated relationship. Multiple branches of critical social theory, including feminist, decolonial, post-colonial, and critical race theory, have critiqued dominant science⁵ and the power relations enacted both within and through it. Given all of the existing critique, why study science?

⁵ ‘Dominant science’ operates as **the** standard that science and scientists must conform to in order to be perceived as legitimate. “Dominant is used as an adjective to describe the culture of European-descended and Eurocentric, Christian, heterosexist, male-dominated Canada or Australia” (I would add the United States to this list as well) (Wilson 2008, 35). Following Max Liboiron and Shawn Wilson (2008), I use the term ‘dominant science’ to denote **sanctioned or legitimized science**. Some use the term “Western science,” however, as Liboiron (2021b, 21) explains Western culture isn’t inherently the point at issue, rather it is **the exclusive privileging of it “to the point that other ways of knowing, doing, and being are deemed illegitimate or are erased”**. Others have circumvented this conflation with Western science using

For two simple reasons⁶: (1) critique or not, science remains a powerful force within the world today, so why not try to make it better?; and (2) scientists are already doing just that! As Catherine D'Ignazio and Lauren Klein (2020, 17) assert, science's "flawed history does not mean ceding control of the future to the powers of the past." In centering science, I am privileging it over other ways of knowing. However, science cannot be reduced to some unyielding monolith (Liboiron 2020b; Subramaniam and Willey 2017). As Max Liboiron asserts, that "characterization gives capitalism and colonialism more power than they merit by erasing not only their diversity, but also the patchiness, the unevenness, and the failures of those systems to fully reproduce themselves" (2021b, 130). There is heterogeneity within scientific practice and denying that contributes to even further erasure (often to the very erasure that the critiques of science critique). It is in that diversity that the possible becomes actual—the inconceivable, conceivable (Gibson-Graham 2008; Tuck and Yang 2018; Subramaniam and Willey 2017).

In the words of la paperson, "[r]egardless of its colonial structure" science, like the university, is "an assemblage of machines and not a monolithic institution, its machinery is always being subverted toward decolonizing purposes" (2017, xxi). So, in acknowledging that things that do bad can be used for good (just as things that are good, can do bad things), the question becomes "what is possible within the structures of academic science" (Subramaniam 2014, 5)?

the framing of "'Science' (capital S) and the world of sciences (lower case s) excluded from its definition" (Subramaniam and Willey 2017, 10). In this case, Science is defined as the "knowledge that is produced through the legitimizing apparatus of various institutions approved by reviewers and published (or legitimated by patents), i.e., this is 'official' knowledge" (Subramaniam and Willey 2017, 10). However, through the language of the term itself, 'dominant science' keeps "the power relations front and centre" (Liboiron 2021b, 20). Dominant science contains multiple models, some of which may contradict aspects of one another, but ultimately serves as the mold science and scientists need to conform to in order to confer legitimacy. However, there is still some wiggle room within those norms (Liboiron 2022a). How CLEAR chooses to navigate that wiggle room is what this dissertation is all about.

⁶ Well, in truth I have a third reason why I chose to study science—I just like it. I see value in it (in some forms, sometimes). So, I'll admit that I have a vested interest in making it better. Science can do better. Be better.

After all, even a shitty machine that reproduces shitty things might be repurposed into something desirable/worth desiring. Feminist science is one of those repurposings.

Science. Feminism. Feminist science?

CLEAR is a feminist and anticolonial marine science laboratory. However, what exactly is feminist science? What does it mean in practice? Feminism, or more accurately feminisms, refers to a diverse array of projects that work to dismantle sexism and other forms of oppression (hooks 2014), as well as “building projects” (Ahmed 2017) to create more livable futures (D’Ignazio and Klein 2020). The ‘feminist’ in feminist theory, thus, not only describes a critical theoretical lens, but also implies a “political outlook and agenda” (Schiebinger 2000, 1173). Feminisms’ activist orientations seem to render the very idea of ‘feminist science’ an oxymoron, as it brings together “values and ideological commitment with the idea of impersonal, objective, value-free, inquiry” (Longino 1987).

Bringing feminism into science is not about adding women and stirring, but rather it requires addressing the very foundations of scientific practice and what it means to do ‘good’ science (Schiebinger 2000; Subramaniam 2014). While numerous scientists have conceded that science is not the value-neutral portrait of objectivity in practice as it is in theory, bringing activism into the very flesh and bones of scientific inquiry can cause discomfort (Roy 2008; 2018; Subramaniam 2014). Consequently, the relationship between science and feminism has often been an adversarial one (Subramaniam 2014; Fausto-Sterling 1992; Subramaniam and Willey 2017; Roy 2008; 2018).

However, increasing numbers of scientists are working to bring science and feminism not only into conversation, but into a mutually informed practice⁷. Anne Fausto-Sterling asserts that

⁷ For examples, see Liboiron et al. 2017, Liboiron 2021, Roy 2008, D’Ignazio and Klein 2020, and Subramaniam 2014.

“we scientists and students of science must take responsibility for how we create and reproduce our own systems of knowledge” (1992, 348). Often building on the critiques posed by feminist science studies⁸, projects of feminist science seek to reimagine and redefine what it means to *do* science at the practical level of the lab bench through the lens of feminism (Liboiron 2021b, 115; Subramaniam and Willey 2017; Roy 2018). Practicing feminist science requires experiments that work towards a definition and practice of ‘good’ science as one that means doing good.

Science and feminism meeting is inherently boundary crossing work. Science often calls for neat clean categories (and neat clean descriptions of how you do/should do science)— “[d]iscipline is the act of relentless categorization” (McKittrick 2021, 35). There is a penchant for binaries and the legacy of Cartesian dualism—there is thinking and there is acting/practice. There is mind or body. Material or ideological. There is the rational or the irrational (Jaggar 1989; Anzaldúa 1987; 2015; Ahmed 2017; McKittrick 2021). However, take disciplinarity, for example— if we learn a lot about a small sliver of life, staying within predetermined disciplinary walls, and if we take the claim that all knowledge is partial and situated to be true (Collins 1986; Haraway 1988; Harding 1989; 1995), what we are left with is a very tiny glimpse into understanding something that is likely quite complex and implicated in layers upon layers of relations (Tsing et al. 2017; Subramaniam 2014).

⁸ Feminist science studies is a heterogeneous subfield of science and technology studies that applies a feminist lens to questions of scientific practice and discourse (Subramaniam 2009; Subramaniam and Willey 2017). Beginning in the 1980s, feminist critiques originating from the social sciences and humanities called attention to the relations of power implicated in scientific knowledge production (Haraway 1988; Subramaniam 2009). Early critiques demonstrated how gender relations are embedded in science and scientific knowledge, questioned biological determinism, problematized the use of binary categories, and challenged notions of ‘pure’ objectivity and value neutrality in scientific research (Subramaniam 2009; Roy 2018; Haraway 2013; Harding 1995). Outside of the humanities and the social sciences, feminists in science, such as Anne Fausto-Sterling and Evelyn Fox Keller, also made important contributions to the growing field (Roy 2018). Their feminist critiques “conducted from the ‘inside’” sought to improve scientific practice, rather than undermine or discredit it (Roy 2018, 15). However, this work did not necessarily challenge the philosophical foundations of science (Giordano 2014; Roy 2018; Subramaniam 2014).

What is a scientist to do? Read widely. Listen widely. Seek out complementary knowledges and disruptive ideas. Engage in conversations (Subramaniam 2014; Liboiron 2020b; Wesner 2019). If we take knowledge as relational (Wilson 2008; Anzaldúa 2015; McKittrick 2021), the hyperindividualism (and disciplinary divisions) of academia seems to be a rather inefficient approach (and the neoliberal university does so value efficiency). Instead, the diverse projects discussed here assert that we can think about thinking, knowing, and being **in community** (McKittrick 2021; Anzaldúa 2015; Velásquez Runk 2014; Liboiron 2020b). In conversation. In alter-collectivities⁹ (Murphy 2018). This can require doing the individual work and preparing yourself to enter into such conversations (Lyiscott 2019), but as Gloria Anzaldúa (2015) explains, inner shifts can also contribute to *collective action*. Inner works, public acts; deconstruct, construct (Anzaldúa 2015).

In efforts to change dominant science from within, there will always be some things that are reified or reproduced (Liboiron 2017). Jamila Lyiscott's (2019, xiii) explanation of social justice is a helpful reminder: "in order to do this work, you will need to abandon any notion of neat categorizations, of fixed meanings, and of sweeping victories with shiny bows on top." Instead of some idealized purity, the goal becomes on-the-ground change which is always defined by compromises (Liboiron 2017). The work is in being intentional and strategic when making those compromises (Liboiron 2017; 2021b). CLEAR founder and director, Max Liboiron (2021b, 20) asks "[h]ow do I, as a scientist, make alterlives and good Land relations integral to dominant scientific practice?" They assert that

[r]egardless of the specifics of your approach, doing anticolonial science within a dominant scientific context is simultaneously a commitment to dominant science and a divestment from it, which makes it uniquely compromised. Compromise is not

⁹ Murphy (2018, 113) posed the concept of alterlife to describe "the struggle to exist again but differently when already in conflicted, damaging, and deadly conditions, a state of already having been altered, of already being in the aftermath, and yet persisting." Alterlife is "life damaged, life persistent, and life otherwise; life materialized in other ways and life exceeding our materializations" (Murphy 2018, 118)

about being caught with your pants down, and it is not a mistake or a failure—it is the condition for activism in a fucked-up field. (Liboiron 2021b, 134)

These compromises speak to the tensions between reproduction and transformation that come with training new generations—with making knowledge and knowers.

Making knowledge/Making knowers

Changing dominant science is not just about individual practices undertaken in isolation but rather comes down to changing scientific norms—interrupting the reproductive process of dominant science. Dominant science is reproduced through the production of future generations (Delamont, Parry, and Atkinson 1997; Mody and Kaiser 2008; Traweek 1988; Romero 2017). While students of science are learning the technical skills and content knowledge necessary to participate as a member of their discipline, they are simultaneously learning and internalizing the implicit and explicit rules of play governing dominant science (Baker and Lattuca 2010; Weidman and Stein 2003; Margolis and Romero 1998; Austin 2002; Sala-Bubaré and Castelló 2017; Blakeslee 1997; Lave and Wenger 1991).

Through the process of making knowledge, science is simultaneously producing knowers (which calls into question the common binary of teaching/research). Community of practice¹⁰ theory stipulates that the primary mechanism through which students learn how to *be* a scientist appropriately is through sustained and active participation in the production of scientific knowledge (Lave and Wenger 1991; Mody and Kaiser 2008; Myers 2015). Or more simply put,

¹⁰ Communities of practice are knowledge-based social structures defined as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger, McDermott, and Snyder 2002, 4). Communities of practice can exist at multiple and embedded scales; for example, individual laboratories, scientific disciplines, and dominant science can all be understood as communities of practice, albeit at different scales. However, the discursive formations, institutional practices, and subject positions (Murphy 2006) of dominant science still inform the conventions and standards that govern the various communities of practice that fall within it.

students learn how to *be* a scientist by *doing* science (Kaiser 2005; Mody and Kaiser 2008; Subramaniam and Wyer 1998).

Academic research laboratories, as both communities of practice and sites of knowledge production, represent a key space where this participatory learning and the corresponding subject formation occurs (Subramaniam 2014; Traweek 1988; Myers 2015; Hunter, Laursen, and Seymour 2007; Wylie 2019). For dominant science, the production of knowledge is “accomplished, furnished, and anchored” in the research laboratory (Stephens and Lewis 2017). Consequently, it is often through participation in the academic research laboratory where future scientific professionals learn dominant science’s rules of play. This makes the laboratory a critical space not only for knowledge production, as much of the science and technology studies literature attends to, but also for the production of scientists (Mody and Kaiser 2008; Subramaniam and Wyer 1998; Myers 2015) and, thus, the “reproduction of specific ways of engaging with the world” (i.e. dominant science) (Wenger 1999). Even mundane everyday practices of science embody moral and ethical viewpoints which are reproduced as future generations of scientists engage in those very practices.

While shared practices can be used to maintain the status quo, they can also change it. Despite the durability of dominant science, it is neither monolithic nor immutable (Liboiron 2021; Subramaniam and Willey 2017; Roy 2004; Harding 2008) and while standards and conventions have significant inertia and can be difficult to change, it is not impossible to do so (Bowker and Star 2000; Star 1990). After all, “it could have been otherwise¹¹” and in fact, it already is (Everett Hushes as cited by Star 1995, 6; Gibson-Graham 2008; paperson 2017; Liboiron 2021b).

¹¹ Latin American decolonial scholars have also called for “worlds and knowledges otherwise” (Escobar 2007). As have Latin American political movements and the Zapatistas. Sandra Harding summarizes otherwise as “articulated as an alternative to both neoliberal and Marxian understandings of democracy, anticolonialism, modernity, tradition, capitalism, ontology, epistemology, and positivism” (2016, 1077). However, Walter D. Mignolo asserts that rather than searching for “alternatives,” the argument for

Prefiguring possibilities

By enacting science otherwise, CLEAR prefigures what science can be. Prefigurative politics encapsulates a range of social experiments that critique the status quo, offer alternatives through the practices and social relations implemented, and consequently prefigure ‘what could be’¹² (Lin et al. 2016; Jeffrey and Dyson 2021; Cornish et al. 2016). Prefiguration is premised on direct action—on imaging and enacting ‘what could be’ by **doing** things differently (Graeber 2009). The topic has garnered increasing attention from scholars in areas such as geography, psychology, and studies of social movements (Jeffrey and Dyson 2021; Cornish et al. 2016; Törnberg 2021; Yates 2015). According to this body of literature, prefiguration is a temporally unfolding phenomenon across networks of people that involves multiple processes—collective experimentation and meaning-making; the creation and consolidation of new and future-oriented social norms; and the diffusion of ideas, messages, and goals to wider networks (Yates 2015; Trott 2016). Through prefiguration, actors seek to foster radical change in and through collective everyday practices and relations (Törnberg 2021; Yates 2015).

The literature on prefigurative politics asserts that social change is an ongoing and messy process of “daily implementation, internal struggle, and an endless cycle of learning and adaptation” (Trott 2016, 270). At the individual level, prefiguration is entwined with the complexities of becoming and has a clear psychological dimension (Trott 2016; Cornish et al. 2016;

knowledges otherwise is built on “options,” refusing to accept a predetermined point of reference that an alternative would imply (Mignolo 2011, xxxi). Central to arguments for knowledge otherwise is “border thinking,” a concept predicated on Gloria Anzaldúa’s work on borderlands which she defines as “vague and undetermined place[s] created by the emotional residue of an unnatural boundary” (Anzaldúa 1987, 3). Mignolo expands on Anzaldúa’s discussion of the U.S./Mexico to form this concept of “border thinking” which works to make visible the relationship between modernity/ coloniality (Mignolo 2011, xxi). However, I argue that a deeper engagement with Anzaldúa’s work, specifically her theory of *conocimiento*, opens up greater possibilities for creating knowledge and worlds otherwise. I explore the possibilities of *conocimiento* further in chapter four.

¹² Remember deconstruct, construct? Prefiguration seeks to do the same in critiquing the status quo and enacting (constructing) alternatives).

Yates 2015). At the collective level, prefigurative practices require a “fairly substantial shared ideological framework” (Swain 2019, 52). Consequently, scholars assert that the emotional, relational, and intergroup dynamics of prefiguration are central to understanding the trajectories, challenges, and impacts of prefigurative politics (Cornish et al. 2016).

Under certain conditions prefigurative politics might even scale up to inspire revolutionary social change from within dominant systems (Törnberg 2021). Scholars argue that during times of landscape-scale shifts (such as a global pandemic or technological innovation), tensions create a window of opportunity for other practices to supplant dominant modes (Törnberg 2021). Drawing from transition studies, revolutionary reforms are one proposed pathway through which this might occur that is particularly relevant to the discussion of science otherwise. Revolutionary reforms appear legitimate to dominant systems while simultaneously countering dominant logics. For example, by fitting within the existing judicial system, the copyleft movement “has the potential to change the license system from within” (Törnberg 2021, 101). While Thomas Kuhn’s foundational science and technology studies text asserts that science changes through periodic revolutions, the concept of revolutionary reforms offers a nuanced understanding by illustrating the radicalizing dynamic of cumulative change (Törnberg 2021). However, for such radicalizing potential to be met, practices must “live up to and create the standards of a future society which is radically different from it” (Swain 2019, 54).

Prefigurative politics work to enact social change by serving as models for otherwise. Hegemonic forms can make other ways of knowing, being, and doing difficult to imagine (Törnberg 2021), a difficulty that contributes to the persistence of dominant science. By engaging in collective experimentation that imagines *and* enacts otherwise, prefigurative practices demonstrate possibilities for otherwise—that science could be different. For example, CLEAR’s approach to author order emphasizes equity and process (Liboiron et al. 2017). However, rather

than simply creating new universal practices and protocols, CLEAR's efforts strive towards normative change, or what Liboiron cites as 'provocative generalizability,' working to inspire others to try other ways of doing (Liboiron 2021b). As a result, prefigurative politics can persist beyond micro-practices and relations, if the espoused ideas and norms are able to successfully diffuse through wider networks (Törnberg 2021; Yates 2015), achieving what STS scholars have referred to as knowledge travel (Downey and Zuiderent-Jerak 2017; Strathern 2000). Part of this knowledge travel occurs through the production of new scholars.

The literature on prefiguration highlights that science otherwise "necessitates the creation of new methods and methodologies oriented toward new horizons" (Liboiron 2021b, 154). As discussed above, those new methods and methodologies must have means for traveling to achieve change across scales. For science, knowledge travel such as this primarily occurs through the movement of scientists and publications (Strathern 2006). As a key site for the production of both, the academic research laboratory serves as a central node in this network. Given the current internal and external tensions confronting science, the above literature suggests that the academic research laboratory of today could be a fruitful site and scale for prefigurative efforts to imagine and enact science otherwise.

The doing (i.e. methods)

What does this look like in practice? How does *doing* science otherwise throw a wrench into the reproductive wheels of dominant science (assuming it does)? How do you even *do* science otherwise? To explore these questions, I completed almost five years of remote laboratory ethnography¹³ as a full lab member at CLEAR between the years 2020 to 2025, as well as a period

¹³ Laboratory ethnography provides a robust means for examining the intricacies of scientific practices and for exploring how these are embedded within and mutually constitutive of broader networks (Jasanoff 2004; Barad 2007; Myers 2015). I approach the laboratory as a networked field site (Burrell 2009) that spans connected and heterogeneous sites of scientific practice, including spaces that cannot be physically inhabited (Burrell 2009). While laboratory ethnography has been most frequently centered on participant

of in-person research and interviews in 2023. This included remote and in-person participant observation, interviews with current and former CLEAR members, and document analysis of texts both internal to CLEAR and those intended for outside consumption. This research was designed to ‘stand with’ CLEAR (TallBear 2017) and to engage laboratory members as ‘para-ethnographers’ (Marcus 2000)— “producers of cultural analyses rather than sources of raw data” (Islam 2015, 231). As a full lab member, I analyze my own experiences alongside other lab members’.

As an interdisciplinary feminist and anticolonial marine science laboratory, CLEAR works towards justice by changing science from *within* science. Max Liboiron started CLEAR in 2015 at Memorial University of Newfoundland and Labrador in St. John’s on the Island of Newfoundland, Canada. The laboratory is a globally recognized leader in the fields of methodological innovations and environmental plastics research (Kawa et al. 2021). CLEAR specializes in community-based monitoring of plastic pollution while also advancing one of their primary goals “to change how research is done” (CLEAR 2021a, 5).

As an observing participant (Bernard 2006), I’ve attended approximately five years of weekly lab meetings, collaborated on multiple projects spanning the natural and social sciences with other lab members, served as a point person for an ongoing lab project, attended numerous working group meetings, participated in the lab’s ongoing weekly writing group, collaborated on writing up an article on the lab’s plastics research, attended cohort meetings for the master’s students in the lab, worked on shared documents and spreadsheets, contributed to collective decision making, participated in weekly lab memos, and attended conference sessions and talks

observation at the physical lab bench, STS scholars have called attention to discursive and virtual sites and spaces that are integral to scientific work such as scientific publications, information infrastructures, digital documents, and virtual meeting spaces (Bowker and Star 2000; Myers 2015; Helmreich 2023; Shankar, Hakken, and Østerlund 2017). Particularly in the wake of COVID-19, the nature of the laboratory and scientific work necessitates a research approach that is able to capture both the collaborative dimensions of scientific work and the individual spaces of knowledge production.

given by lab members. I've experienced lab membership in-person and remotely, both as the lab navigated COVID-19 and during periods of relative normalcy. As a CLEAR member, my dissertation research adheres to CLEAR's values, rules (of which there are few), guidelines, and protocols.

Throughout the dissertation, I take a storytelling approach to share my findings with you. However, I do want to note that this is not meant to be an auto-ethnography. I analyze my own experiences in the lab alongside those of lab members. As a result, I am in the text. I am a part of the research, just as any ethnographer is part of their research. However, I am explicit about it, engaging in a form of "embodied ethnography" that treats my experiences as a researcher as part of the data to be analyzed (Hanson and Richards 2019). One of the benefits (or consequences) of this approach is a subtle blurring between the data and my interpretation of it at different points. This blurring speaks to the research process itself, recognizing that it is more complex and iterative than a distinct division would imply.

Rather than observe the laboratory as a distant and 'impartial' observer, I've had the opportunity to be a part of this community and to experience how it feels to be a member of CLEAR. As a lab member, I have not only witnessed, but also experienced CLEAR through the lenses of multiple roles, including collaborator, colleague, student, mentee, and mentor. However, I think the most important role that I've had is the opportunity to serve as a member of the collective. Being a CLEAR member means more than what typically comes with being a member of a lab, it requires being a part of a collective and actively working to keep the collective healthy.

Collective Consent

A unique part of working with CLEAR is the collective consent process in which the lab as a whole decides on a proposal brought to the lab. I started as a CLEAR member before I proposed my dissertation research to the lab. I'll admit the process was a bit intimidating (and also slightly

terrifying given the possibility that the lab might have rejected my proposal, leaving me without a dissertation). However, the process was also enlightening, and, in the end, my research was better for it. The consent process is also an important way that the lab enacts and teaches its core values.

Over the duration of the research, multiple lab meetings were dedicated to the collective consent process. The first was a preliminary meeting held early on to ensure the lab consented to me conducting my dissertation research with CLEAR. Once I developed the specifics of my proposed project, we went through the consent process again. During that time, I received feedback on my proposal, and it was unanimously approved. Later meetings served as an opportunity to renew our vows throughout the research process. For a detailed description of the CLEAR consent process, see (Liboiron 2022b).

Laboratory ethnography and hybrid spaces

I was initially invited to join the lab for my dissertation research by the lab's founder and director, Dr. Max Liboiron in 2019. I reached out in February 2020 to inquire about the process. We discussed the process and decided that I would start as a lab member and begin to build relationships before formally deciding on a research direction. I had planned to apply for funding to visit the lab in summer 2020 for preliminary research. However, before that could happen, we were in the midst of a global pandemic. Suddenly visiting my own office down the street became impossible, let alone travel to Canada.

However, CLEAR was well-equipped for the move to remote work. As a result, I was able to complete the onboarding process for new members and join the lab in May 2020. Even after COVID-19 restrictions were lifted, virtual workspaces, such as Zoom meetings and shared Google

docs, remain vital parts of CLEAR operations. Consequently, I primarily conducted the research remotely over Zoom¹⁴.

While laboratory sciences are often thought of as something that, well, happens at the lab bench, a laboratory extends beyond its physical spaces (Sismondo 2011, 118; Stephens and Lewis 2017; Kleinman 1998). Laboratory ethnography often (though not exclusively) focuses on the physical laboratory. However, laboratory practices that happen in other spaces also serve as important sites for producing knowledge and knowers. The very mundane (and I don't mean that in a negative way) stuff of science, like meetings and shared documents, writing groups and bibliographies, are central to science. These are the spaces that I focus on.

To complement participant observation, I travelled to St. John's, Canada for two weeks in the fall of 2023. There, I toured Memorial University of Newfoundland and Labrador (CLEAR's institutional home), visited the wet lab, conducted in-person interviews, and attended training sessions, both in the wet lab and outside of it. I had the opportunity to interact with current and former lab members outside of the university setting for which I am exceedingly grateful. The research trip, brief as it was, gave me a *feel* for what it's like to be *in* CLEAR that would not have been possible through remote research alone.

¹⁴ What is anthropology without 'place'? For decades, anthropologists of science have traversed plural understandings of what constitutes the 'place' of science. Laboratory ethnographies have extended beyond the physical lab bench to explore networked understandings (Burrell 2009) of fields and field sites. However, COVID-19 catalyzed academic research laboratories to extend their walls even further, creating hybrid spaces that bring the laboratory into the homes of lab members through virtual sites of collaboration. While in-person operations have resumed, some of the practices adopted during COVID-19 have now become business as usual for academics. In particular, the use of video conferencing platforms, such as Zoom, has created new possibilities for participation in science while simultaneously re-defining the public/private boundaries of scientific work. These hybrid landscapes of laboratory infrastructure and practices have become an important part of studying laboratories and are central to my research.

Expert interviews

In addition to being an observing participant in the laboratory (i.e. a laboratory member, given the inherently reflective labor and orientations asked of any laboratory member), I conducted 19 interviews with current and former CLEAR members (15 in-person and 4 virtually, using Zoom). Of those, four interviews were with lab alumni (some who had left the lab years ago and others who left more recently). The other 15 were active lab members at the time of the interview. The interviewees included full-time staff; undergraduate, master's, and doctoral students; professors; an artist-in-residence; and a guest in the lab.

All interviews were semi-structured, and the questions varied depending on the social location of the interviewee in relation to CLEAR. Previous work with the lab informed the interview design, with specific questions directed towards some interviewees based on my prior knowledge of their work in CLEAR. For example, I didn't ask Dr. Max Liboiron about being a student in the lab and I asked Riley specifically about the projects I knew he worked on. Overall, the questions centered on interviewee's experiences as a lab member and how CLEAR compares to the other academic spaces that they've been in.

Individual written consent was obtained for in-person interviews and some Zoom interviews (other Zoom interviews used verbal consent). The consent process included options for how the transcripts would be stored. Interviewees could elect to have the transcripts stored in the shared CLEAR drive, available for future internal use outside of this project or for me to have the only access to the transcript. I used Otter AI for the preliminary transcription which I then corrected by hand. Once the transcription was complete, it was sent to the interviewee for their approval. They had the option to make any changes, additions, and redactions that they saw fit. Where indicated, approved transcripts were saved to the CLEAR Google drive with the

attached individual consent documents. Approved transcripts were coded for reoccurring themes.

A note on seating

I conducted most of the in-person interviews in one of CLEAR's spaces on campus, a newly obtained office that would soon be for the IndigeLab Coordinator position, but was empty as of yet. It was a small space, with a large window taking up most of one wall, an L-shaped desk and large cushioned rolling chair with it. To the side of the desk, was a smaller, arguably less comfortable chair. The room was warm for some interviewees, but the one attempt to open the window didn't go so well. So, I decided not to repeat it. It did provide a quiet space next to my temporary office and just another door down from the IndigeLab space. It was upstairs from the wet lab, and so relatively familiar to most lab members.

So much was going on, that it wasn't until I went into the room for the first interview that the seating disparity struck me. In that first interview, I invited the interviewee to take either seat and they chose the 'student' chair, leaving me in the executive position behind the desk, though I tried to turn in my seat so that I wasn't actually sitting behind it. In the interviews that followed, I sat down first in the small chair and directed the interviewee to sit behind the desk. I had changed my approach, still making assumptions around comfort, but either way changing the power dynamic. Thinking back now, could I have just moved the desk? Maybe. Could I have asked Max or Jess about changing up the room? Probably? Did I? No. Should I have? I'm not sure, but I think it worked well enough even though it may not have been the ideal dynamic to have those two very different chairs.

While this segue may feel like an unnecessary detour, it brings to the forefront some common themes that I'll address throughout this dissertation: the role of unlearning and socialization; the compromises that are made when working to do good work; the small details

that matter—that power moves through. Something as mundane as seating carries with it consequences. However, it's not something with a clean, perfect solution.

Testing assumptions

After returning from St. John's, a question that kept resurfacing for me was if and how CLEAR practices travel. The theory of change that I am putting forward here is reliant on this travel outside of the lab where the practices are created. To test these assumptions, I focused on a case that I was familiar with already—my own feminist methodologies classroom. While I bring the practices and values that I learn in CLEAR into all my classrooms, as a methodologies course, it was especially true there. Nearly a year had passed since the course finished and I was no longer an instructor for any of my students. I interviewed four students, three of them were still in the area and we did the interviews in person; the other interview was done over Zoom. I did learn from my time in St. John's, and the in-person interviews were done in similar chairs at a round table. I also provided far more meta commentary to explain why I was doing things the way I was doing them during the interview. This pedagogical dimension is something I wish I would have brought to the CLEAR interviews. Alas, hindsight is 20/20 as they say. The interviews were similarly transcribed and analyzed as the interviews with CLEAR members.

Document analysis

In addition to participant observation and interviews, this research is based on document analysis of both internal and external CLEAR documents. This includes the analysis of a series of blog posts written by CLEAR members, CLEAR training materials, CLEAR publications, the public versions of the CLEAR Lab Book, and the living internal CLEAR Lab book. The CLEAR Lab Book is a living document that provides a foundation for the lab. As a key part of the on-boarding process, reading the lab book helps orient new members as they enter the CLEAR collective and begin undertaking the work of being a lab member. The Lab Book is also a reference document,

something to frequently refer back to when you need a refresher or run into a question of “how do I...?”. As I’ll show in later chapters, the Lab Book does more than serve as a manual though, the process of creating, maintaining, and changing this document also forms the fabric that helps weave together a collection of individuals into a collective. I’m getting ahead of myself though, so back to the work at hand.

Making sense of mess

In writing this dissertation, I wanted to put the mess of research and writing back in, instead of excise it out. As students, especially, we rarely see this labor. Instead, we read polished (and typically published) drafts and feel the expectation that that’s what we’re supposed to be emulating (Wolf 2023; Harris 2023). It’s a rather unhelpful (though often unintentional) lie we tell as academics and as researchers. If how we make knowledge shapes how we make knowers (as my dissertation attests), I don’t want to further the fantasy of smooth trajectories and easy writing in the pages that follow. I want to show the labor, the *work*, that goes into research and writing. This presented me with a problem—how can I include (some of) the mess but still be considerate of the work I’m asking of you as a reader?

My imperfect solution to this problem is to try to bring you along on this journey of how I came to know what I know. I use interludes between chapters to accomplish this. At times, writing the interludes felt kind of gross and indulgent. And self-centered. And absolutely not collectively oriented. However, they serve a purpose which is why I decided to include them. Even if it feels icky to air out my laundry so publicly. It comes down to a pedagogical orientation to the text. Many of the interludes might feel relatable—I hope you find them fruitful!

Throughout the text I use footnotes to provide explanation that might not be central to the main arguments but that provide important context. I realize that including long footnotes asks a lot of you as a reader to move back and forth between them. I will say it was written with

the intent of reading the text and footnotes in the order they arise in the chapter, but of course, you can read it any way that works best for you. Whatever you choose, thank you for taking the time to read this!

Before moving on to the chapter overview, I also want to mention a few points about how I treat quotes from lab members and documents. Rather than treat them as data in the text, I treat them as citable sources. Each quote, be it from an interview transcript or an internal document, includes an in-text citation and is included in the reference list. CLEAR members are knowledge producers and keen analysts of their own experiences, treating them any other way would be a disservice. Additionally, the first time a specific lab member is mentioned or quoted in a chapter, I include the introduction that they gave me during the interview in response to the question of how they would introduce themselves in lab. For those not interviewed but included in the text, I requested an introduction from them which they wrote and sent to me. I repeat these introductions in later chapters, following CLEAR protocols for introductions. They are repeated over time in lab, and sometimes change, so the same is true in this document.

There's a certain pressure that comes with writing a dissertation—the notion of valuable only translated as new and novel. In writing this document, there are times where I fell into concerns around "well what can I say that CLEAR hasn't already?" However, a quick trip into CLEAR's lab book provides some useful guideposts to turn that detour around. The Lab Book emphasizes humility, the idea that we are connected in certain ways and understanding those connections matter. Moreover, lab meetings emphasize the importance of agreement as a way to show texture to consensus and where unevenness may or may not occur. As a result, so much of what I write here isn't new but rather is building on the shoulders of giants.

Chapter overview

The first step in working towards change is knowing that there are alternatives and possibilities out there—that change is *possible*. In CLEAR, their everyday doings are the possibilities through which change is enacted. These doings demonstrate what's possible for those both inside and outside of the lab. While you might not be able to successfully plop down CLEAR's practices into other contexts, they can *inspire* other ways of doing things. As a result, CLEAR embodies possibility by doing everyday things, differently. I argue that seeing possibilities in action can be a joyful rupture that catalyzes ethical learning and transformative change.

In Chapter 2, I introduce you to CLEAR and set the stage for how these possibilities are made possible. I outline how the lab uses shared values as the foundation of their work and how the lab functions as a research space, a methods incubator, and a social collective. Each of these three hats brings different possibilities with them. As the chapter will show, sometimes it can be as simple as how you take out the trash.

In Chapters 3, 4, and 5, I use a case study of a multi-year CLEAR project on citational politics¹⁵ to illustrate and analyze how CLEAR operates and the possibilities that are embodied through those operations. I selected this case for two main reasons. First, citational politics directly links up to other projects and working groups, such as the author order protocols, the literature review working group, author attribution, and the weekly writing room. As a result, the topic of citational politics is connected to all of the work that CLEAR does, as both a research space and a methods incubator. Secondly and more pragmatically, I was a lab member and contributor to the project for its entire duration. Throughout the project, I was a participating observer in multiple roles, including a lab member, a working group member, and eventually the point person

¹⁵ More on this in the sections to come, but if you have an urgent desire to know more right now, CLEAR has compiled a public library on citational politics on Zotero, an open-access research tool. You can access the library at: <https://civiclaboratory.nl/2021/02/25/citational-politics-bibliography/>.

for the project (not leading it, but responsible for it). This allows me to follow the project, and thus, how CLEAR operates, from the project's initial development to its dissemination (which includes this very dissertation). Taken together, the citational politics project provides a rich case study of how CLEAR works.

Chapter 3 traces the start of the citational politics project through a central CLEAR practice, meetings. I argue that meetings are an important collective space for doing science that informs the production of future generations of scholars. However, members learn not just through the content of the meetings, but also learn through the meeting structure. This learning includes both the skills and tools for practicing feminist and anticolonial science, as well as the norms and values that go with it. Through CLEAR meetings, members learn other possibilities for what a meeting can be and do.

Chapter 4 continues the story of the citational politics project exploring how the *process* of engaging with citational politics can shape the type of scholar we become. I draw on Gloria Anzaldúa's theory of *conocimiento* to propose a framework for understanding how learning fosters shifts in consciousness capable of catalyzing collective action—how learning can do more than just make someone aware. I argue that CLEAR's infrastructure facilitates more than awareness; it makes *conocimiento* possible.

In chapter 5, I wrap up the citational politics story with one of the products from the project. Through the case study of comprehensive exams, I explore how joy can be a form of rupture that engenders *conocimiento*. In between each of the chapters, the interludes provide background and context that connects to the surrounding chapters. In chapter 6 I conclude by exploring what change can look like by addressing some of the common myths found in social justice work. Specifically, I examine the topics of hierarchy, boundaries, intimacy, and joy.

INTERLUDE ONE. CLEAR BEGINNINGS

Welcome to the first interlude! Between each of the chapters you'll find one. According to Merriam-Webster (2025), an interlude is:

- 1: an intervening or interruptive period, space, or event
- 2: a musical composition inserted between the parts of a longer composition, a drama, or a religious service.
- 3: a usually short simple play or dramatic entertainment.

Within this text, interludes fall under the first or third categories. Unfortunately, I am not musically gifted, and so I will leave the composing for the composers. Instead, the interludes will include short stories or discussions that are related to the main chapters.

For this first interruption or pause, I want to share with you how CLEAR got started (i.e. their origin story). While this isn't necessarily necessary for the rest of the dissertation, it provides some helpful background that can orient you throughout the rest of the text. Knowing where something came from can help point it towards where it's going. I could write about it in my own words, but I think CLEAR's origin story is better told coming from its originator, Dr. Max Liboiron¹. So, I want to share an excerpt with you from our interview together:

Christina Crespo:

Can you tell me a little bit about how and why you started CLEAR?

¹ My name is Dr. Max Liboiron, L-I-B-O-I-R-O-N. My pronouns are they/them, I am Michif, or Red River Métis, and settler. Grew up in treaty six territory. But I have been living and working in Newfoundland and Labrador for about 10 years, which are the homelands of the Beothuk and the Mi'kmaq. And I also work in Nunatsiavut which are the homelands of the Inuit. And my pronouns are they/them.

Max Liboiron:

Yeah. So in my graduate work, I learned how to critique science, you know, from a feminist STS² perspective, mostly...And so, when I was hired here, at Memorial, **I was prepared to come and critique plastic pollution science.** This is an ocean province; the ocean is a really big deal here. I was like, 'this is perfect'. When I got here, **there was no plastic science to critique.** And part of the reason was that we just had the Harper years, which were two terms like sort of like Trump—two terms of a very, very militantly anti-environment, pro-oil prime minister. And so, a lot of this science was actively not done. And then other resources were actively trashed—a lot of archives were destroyed, that sort of stuff. And so, **I realized it was a luxury to have science to critique to begin with, because science is still the coin of the realm when it comes to knowledge.** And that really matters, especially in social movements and stuff like that, where people have a right to know about their environments or need to know about environments, not just people, but organizations, governments, etcetera.

And so, **I decided to do the science,** because I knew enough to do plastic pollution science, because at that time, which was 2014 I think, for my dissertation I had read every single English language paper on plastic pollution ever published in the peer reviewed literature, because you could still do that at the time. Now, like a gazillion plastic articles are published on a Tuesday, and you can't do that anymore. But I was a leading expert in the field. And I had a really great grasp on the science. And I have background in science. And so I decided, well, I'll do the science.

But all I had to guide me from a feminist STS perspective was the critique. How not to do it, which wasn't as useful when it came to doing it. Which is where like Deboleena Roy³ and other folks come into play. You're like, 'Okay, well, if I'm going to clone, y'all can't have a wholesale critique of cloning, because here I am cloning.' So, **I started as a feminist lab,** specifically—how do I be, **how do I do science without being an asshole?** And specifically a misogynistic, masterful, objective, biased in the sense that 'I didn't think there was social influence in science,' like how not to do that, right?

So that began with things like studying plastic pollution from a community needs perspective, which meant I was studying cod in this province, because cod is both commercially important, and culturally very important. The first moment I found a plastic in cod, I was super pumped, except I remember very clearly, I was wearing blue nitrile gloves, there was a white triangle, either film or fragment on my finger that I had found. And I was like, 'oh, fuck, I just found plastic in cod, and cod is such a big deal here. And while I'm very excited I found plastic, what am I going to do? This is, uh, **this can cause a lot of harm.**' Telling people that cod, you know, the heartbeat of the island of Newfoundland is contaminated with plastics. How do I do that? Do I do that? And **so that's when I started the community peer review. So these methods**

² STS refers to Science and Technology Studies.

³ Deboleena Roy received her degree in reproductive neuroendocrinology and molecular biology, but after encountering feminist critiques of science wanted to learn how to practice feminist science. Her book, *Molecular Feminisms: Biology, Becoming's, and Life in the Lab* puts forward a model for understanding feminist science in practice.

started to evolve out of doing the science itself and needing to do things in the science itself, right. Trying to buy lab coats that fit me, trying to like all these sorts of things, which by the way, they don't. If you're five foot two, and aren't a giant man, you will not find a lab coat that fits you. It'll look like you're playing dress up every time a TV interview comes and that's what happened. So, there's just yeah, **all of these sorts of methods that came to cohere in what we now know as CLEAR, came out of the materialities of doing science.**

Over time, **CLEAR has refined itself from a feminist lab working on the twin values of solidarity and equity to an anti-colonial lab that draws very heavily from feminist science and Indigenous sciences that has values of accountability, humility, and collectivity.** I think inclusion might have been one of our first ones too. And now I really dislike inclusion as a concept. So **there was a real maturation the first few years**, we were basically drinking out of the firehose of needs. **And now we're a much more refined lab dealing with a lot more nuances.** You know, so we can get to things like citational politics, where like, in the early years, that wasn't as important as like, how do you, do you use the word contamination in the community meeting? Right, so yeah, so that's sort of been the trajectory of CLEAR over the last, not quite, probably nine years, CLEAR has existed, maybe a little less?

Christina Crespo:

How did lab membership then come to be? How do you go from you doing this thing to becoming a lab?

Max Liboiron:

So this magical thing I discovered when I was an assistant professor, a brand new assistant professor, still at my, you know, still living in my closet, both the lab and my office were in closets, which tells you the state of the assistant professor. But **I remember being like, 'how do I make a lab? I need a lab.'** And then I found an acronym generator. I figured out the name. I love that kind of generator. And I made a website, I can make a website in like 20 minutes. **Bought the URL, made the website, put a little blurb up, put up a picture, and I was like, 'I believe I have a lab now.'** I didn't have a room, I didn't have people, I may or may not have had samples.

The way **that CLEAR membership began was that other people donated me their students** that they didn't have the time to advise. These were mostly what are called MUCEP students at Memorial University, which are paid undergraduate folk. But then also their graduate students, which I, in retrospect, I now understand was due to like, really neglectful, and in some cases, abusive advising. I would get their students. There were more routes as well. Then I started asking my colleagues to apply for MUCEPs on my behalf. Could they please donate me students? Because I had no money. **After a few years, maybe two or three years in, I started getting my own money, and most CLEAR members are research assistants now.**

But in the beginning. I don't remember if—some of that was feasibility, it's easier to get undergraduates to work in a lab than to get your own graduate students.

Although I did have my own graduate students as well, many of whom started as RAs⁴ and then I sort of brought them into the program that way. Yeah, now we've got PhDs, postdocs, full time staff. **Most of the positions arise out of a combination of a need the lab has, and people who show up and I'm like, 'Oh, how do I bring you into my treehouse?'** I don't care what you're working on. So Sam, right? Sam works on—well, now works on things that are quite close to CLEAR, because I've been advising her for long enough. But at first Sam was doing international aid and animal relations and I'm, like, 'I don't know what that is, but I like you. Come on in.' And you know, and she is so good. **So it's a lot of me sort of trying to be a gravitational force for people that I think are good and could benefit from the CLEAR space. And that CLEAR could benefit from them.** As well as like, 'oh, we have this need that like Bridget can do, I need someone who knows plastics,' and we now have a master's degree person who did a lot of research in plastics before coming to us. So you know, that kind of stuff.

Christina Crespo:

So, one of the things that you mentioned, like the inclusivity thing, and you mentioned in the past all the work that goes behind filtering what comes into the lab. So, can you tell me a little bit about that?

Max Liboiron:

Yeah, so. **You'll realize that if you let everyone in, you get jerks. So I don't think we've ever been a radically inclusive lab.** But what I think we meant when we first used that term in the lab book is, well—CLEAR students introduced that term, and what they meant is 'when I come in, I feel welcome.' **And the reason they came in and felt welcome is because I'd kept so many people out.**

So first of all, in the beginning, I kept out a couple of abusive advisors. That was the first blush. But then in hiring interviews when I interview students, right, there are people we keep out: people who still subscribe heavily to the mastery, people who talk over me during the interview, or interrupt me, people who have trouble introducing themselves based on accountability. You know, like that sort of stuff. I also keep out people who, you know, just over identify with the lab—that has been a big learning curve. So people who are like, 'Oh my god, CLEAR's the most important to me and I want it so bad and I've been living there already, you just didn't know it and you're the best.' We don't take them because that never turns out well. Over identification with CLEAR does not turn out well for us. Or them.

Keeping a safer space is also crucial, so anyone who can't do that can't come in. I've had, for instance, really amazing Indigenous applicants who in most terms are frickin amazing, except, for instance, they subscribe to a policy where they feel comfortable calling certain nations not Indigenous or not Indigenous enough. They don't come in because they would create unsafe conditions for the folks we already have in the lab. Or who are really, really amazing, except for they have problems with trans folks.

⁴ Research assistants

Sorry, you're not coming. Like, you know, call us when you're further on that journey and we can revisit. So, people get hired when they are good at safety, good collegiality, exemplify our values already, and I don't care about their experience, usually. That's sort of been the model of how we hire lab members. And then also very important from a managerial perspective, running an undergraduate RA lab means that everyone's on short contracts. So if people don't work out, you just don't renew their contract. That's very important. We have an auto-out every four months roughly on an academic calendar. So that means the stakes of making mistakes are only four months long to manage. And we've only ever fired one person mid contract in the lot. Other people just don't get renewed, and that's worked for us.

Christina Crespo:

Then there's been changes in membership over time I imagine...

Max Liboiron:

Huge changes.

Christina Crespo:

So can you talk a little bit about your thoughts behind that, or where that's coming from?

Max Liboiron:

So I mean, it's a training lab, that has mostly specialized in undergraduate RA training. So the turnover in that is going to be huge automatically. And in some ways we want that. **So the more people who understand that, 'oh, science can be otherwise Oh, this is what was normal in my first job.'** So that's why we talk a lot about, like, employment rights with undergrads, most of whom have their first job with us. So if at least they go out being like, 'Oh, I am entitled by law to a 15 minute break now.' Or like 'you owe me leave,' or, 'I don't work for free,' or like these sorts of things. **If you want to spread it out, and you want to make it a new normal, as much as possible, having relatively high turnover as part of that, right, making sure people you know, ingest it, and then leave and spread it out.** And we hear back sometimes that that's happening and working well or not, depending on where they go.

The other thing is, turnover is normal. Mostly an undergrad comes to us in their last two years, which is when they feel confident enough to ask for employment in the lab, and then they graduate. Other people graduate, like my graduate students graduate. It's very good when a master's student turns over in two years! So because we're a training lab, of course, we have turnover. We try and sort of create these little stabilizers with our full-time employees. But even with those full-time positions, my entry level positions pay really well, but they're still entry level positions. And so we have every expectation that within two years, those folks are going to move on to something else and we design it that way, with lots of training for their next steps in the expectation that they'll leave us. Sometimes I have to push birds out of the nest. When contracts are over or coming up for renewal or someone graduates and they

ask to stay on for free or if I think we've already taught them everything we have, I write them a great letter of recommendation and nudge them out. I know lots of other labs keep their alumni, but we'd just be way too big if we did that. If we were a tiny lab I'd likely consider keeping people in a closer orbit longer.

With Jess, I hope she stays forever as a lab manager, and I'm also glad she left, had other work experiences, and came back as a lab manager. And I have crafted her position to be more of a permanent, like she could stay in it as a career move if she wanted to.

Sometimes people come in a short time. Sometimes undergraduates or our high school interns don't work their full terms, and then they disappear or ghost or life becomes too life-y and they bow out with our acknowledgment and thanks. That actually happens quite a lot. And I think if you take what some folks call quote unquote, high risk, **aka life is big and I have many more accountabilities than someone with a ton of privilege**. Those folks roll out a lot more because of their accountabilities to other parts of their life. And so we have a higher roll over that way as well, which is fine. And so there's a big part of the lab about leaving well, because people leave, it's designed for people to leave. **We have a series of methods about "leaving well" so there is continuity in projects despite roll over**. So does that answer your question?

Christina Crespo:

Yeah, part of it and then I guess the other part is how it's navigated, like moving to online and hybrid lab and those which is now set to shifting back to almost everyone's in person. But...

Max Liboiron:

...Moving online and stuff wasn't hard. It was tricky, but not hard. So it's like, I don't know, like digging a ditch. There's a certain amount of hard labor in it. But it's pretty straightforward. **It's chores. It's not a crisis if the only thing stopping you from doing it are chores**. So the second the school closed, there was not a lot of warning, like for COVID. I was like, 'no problem.' I mean, the principles of CLEAR are pretty simple: Number one, everyone gets paid: 'Don't even worry about it, you will be paid whatever your normal hours were, we will keep logging those normal hours, there'll be no change in that.' Number two, we pivoted to online meetings, and we're already doing hybrid because we had some online members, including you but also others. And then we do so much work in the lab, that it wasn't hard for me to put together a bunch of online tasks, like maintenance of our extensive documentation. How about if we maintain those documents? 'Anyone want to clean up the Drive?' Oh, hey, we have bags and bags and bags of fish tags that need to be data entered. We had lots going on, and I just had to scaffold that work with online instructions, check ins. Also I think because part of it is my background in Media and Communication Studies, I don't think online is a non-place or a lesser place. I think it's a different place. So I didn't have the conceit of like 'online is not as good' that you heard a lot of during COVID. I'm like 'online is different and how do we do our principles in this different

space. How do we do an artist in residency online? Let's figure it out.' **So I didn't have that hurdle to get over. If we're value-driven then what do those values look like online?** There's no problem here except for like digging the ditch, the chores.

If you're value based, the nice thing is, the parameters for solving problems are always really clear. There might be crises, but they don't stem from being lost. Like the problem is only ever, how do we do this with humility? And you have to figure it out. But if that's your orienting question, a lot of the flock is cut through, right? There's no confusion, just chores. The problem is how we figure out to do this with humility? Well, we stay together, we don't make a situation with unevenness. We make sure everyone's paid because that's our connection. And you know, we're accountable to that. So yeah. And we've had CLEAR members, I think it was Molly Rivers being like, 'the profound sense of relief, when the emails were flying around the university being like, "we don't know what's happening!" And you get the email for me being like, 'Don't worry, all, you're getting paid, no matter what happens. Do this in your time sheet. I also don't know what's going on. But you have your money now.'"' I was that like, 'oh, well, that's settled. I can eat during the pandemic.' And then it becomes my responsibility to fight with the grantors if they disagree with me, and you know what—they didn't. And in fact, they were very pleased that we didn't have any interruption in training. Right. So we got interviewed by the New York Times for some of our pivoting work, right. **So you get rewarded for not being a jerk sometimes and getting your chores done.**

CHAPTER 2. CLEAR INTRODUCTIONS

Before going any further, I want to start by introducing CLEAR. Each time someone joins (or rejoins) the lab, the first few minutes of weekly lab meetings are dedicated to doing introductions until the new or returning member becomes familiarized with current members. As a result, introductions are frequently repeated in CLEAR. These introductions are part of CLEAR's protocols and enact CLEAR values. Introductions are a way to name relations that matter in a given context (CLEAR 2021, 46-47). They are "about relationality and thus humility, and they also lay the groundwork for accountability—who is responsible for you, and whom are you responsible to?" (CLEAR 2021, 46-47). In the sections that follow, I introduce CLEAR, the work that it does, and the relations that guide it. This chapter outlines some of the fundamental doings that demonstrate what's possible to those both in and out of the lab. This preliminary introduction consequently forms the foundation that later chapters build on.

Initially I had a hard time figuring out how to introduce CLEAR—the lab is and does so much, so how can I best share that with you in a linear way that makes the most sense? As I was reading through CLEAR's description of the lab on their homepage, the answer was right in front of me. The best way to introduce CLEAR is how the lab introduces itself!

Equal parts **research space**, **methods incubator**, and **social collective**, CLEAR's ways of doing things, from environmental monitoring of plastic pollution to how we run lab meetings, are **based on values** of humility, accountability, and anti-colonial research relations. (CLEAR, n.d.-a)

The following chapter is organized around those three hats that CLEAR simultaneously wears: a research space, a methods incubator, and a social collective. In this chapter, I spend the most time discussing the first of those hats, a research space. I then briefly introduce the lab as a methods incubator and a social collective, with later chapters delving deeper into those two facets of the

lab. Taken together, I show how CLEAR is a pedagogical space oriented toward possibility. However, like CLEAR, this chapter begins with values.

CLEAR values

CLEAR lab's specific concept of **what is good**, or what our concept of **justice** is, is based in **good land relations**; and the **core values that organize our work are humility, accountability, and collectivity**. These values and our specific idea of justice guide us in making all of our other decisions... (Liboiron, Melvin, and Morgan 2024)

CLEAR's purpose is to do more than just science. As the lab book explains, "[a]t CLEAR, one of our primary goals is to change how research is done" (CLEAR 2021, 5). Despite this goal (or more likely because of it), the science CLEAR produces *is* legible to dominant science. There are risks entailed by doing things differently (this also gets back to what I mentioned before about compromise), but remaining legible to dominant science helps mitigate some of those risks. By traditional academic metrics, such as publications, citations, grants, and awards, the lab is highly successful. Max has successfully secured large grants to fund the laboratory's work which costs about three-quarters of a million dollars a year to run (CLEAR 2021d). CLEAR regularly publishes peer-reviewed publications and technical reports. Members frequently present at major conferences within their disciplines. Students in CLEAR have been highly successful in securing fellowships, grants, and prestigious awards. Given all of this, how is the lab changing how research is done?

For CLEAR, the difference starts at the level of axiology, or values. This is highlighted in the broad overview of CLEAR's work found in the lab book:

Rather than assuming we are value-neutral or that the product of research is more important than the process, we work towards humility, accountability, collectivity, and good land relations (anticolonialism) in everything we do, from how we run a lab meeting to how we take out the trash. (CLEAR 2021, 5)

As the quote explains, values inform every aspect of how CLEAR operates. For example, in working towards good land relations, rather than throwing out fish guts as biowaste once they've been

processed, CLEAR rematriates them to the ocean (with university approval, of course)¹. In the chapters that follow, I'll give additional examples of how CLEAR's practices are shaped by values. While any form of science is guided by values, the values that CLEAR holds and how those values inform lab practices that matters. It's what CLEAR deems valuable.

In the past, I read about feminist epistemologies and methodologies, about different ontologies in anthropology, but it wasn't until joining CLEAR that I had ever heard the term "axiology." Let me be clear, the term is not new and has a long history in philosophy. However, in all my reading, writing, and even coursework on feminist epistemologies and methodologies, axiology had somehow managed to be excised from the conversations. Or perhaps excised is the wrong word here? To be excised, it had to have been included in the curriculum in the first place. Perhaps, ignored is a better term? Or overlooked? Somehow it hadn't made an appearance, not even as a footnote or a vague nod. That seemed odd given that feminism is predicated on a set of values. So why weren't values an explicit part of the philosophical foundations of feminist science and technology studies? Or were they there, but just in different terms? Or was I just missing it because I was so conditioned to focus on epistemology and methodology?

The first time I read about axiology was in a book Max Liboiron had recommended to me, *Research as Ceremony* by Shawn Wilson. The text as a whole not only gives the reader a wonderfully digestible explanation of research paradigms and the philosophical foundations that inform them but also provides a model for how research can be both undertaken and communicated in ways that place being in good relations as the guiding orientation. It remains the most actionable explanation of axiology that I have encountered to date. Wilson explains axiology as follows:

¹ If you'd like to know more about this, you can watch a CLEAR mini-documentary, *Guts*, that explains the lab's approach to plastics at <https://civiclaboratory.nl/2021/05/10/clear-mini-documentaries/>.

the ethics or morals that guide the search for knowledge and judge which information is worth seeking in order to better understand reality...Axiology is thus asking, 'What part of this reality is worth finding out more about?' and 'What is it ethical to do in order to gain this knowledge, and what will this knowledge be used for?' (2008, 34)

This definition calls attention to what knowledge is considered valuable and what is ethical to do to pursue that knowledge.

For CLEAR, this translates to a set of collective values that guide their practices, both in research and everyday doings. The values are not aspirational statements about what the lab will hopefully one day become or vague sentiments and good intentions that lack the teeth of actual practices to enact them. If anything, shared values that only exist as intentions or lip service might even do more harm than good, much in the same way as Sara Ahmed discusses how 'doing the document' is how things don't get done (2012). Instead of being about what the lab wants to be *in theory*, CLEAR's values come from what the lab already is—the values come from and inform practices. They help orient the lab towards feminist and anticolonial horizons, towards good land relations (Liboiron 2021b). As the lab book explains, “...**we start with values, and keep them in front of us while we maneuver difficult terrain. They guide us**” (2025, 25).

So how does the lab decide on what values should (and can) continue to guide the laboratory's practices? Collectively and with a protocol², a reoccurring theme in the lab that is reflected on CLEAR's homepage, which states:

To change science and research from its colonial, macho, and elitist norms, CLEAR **works at the level of protocol**. Rather than lead with good intentions, we work to ensure that **every step of research and every moment of laboratory life** exemplifies our values and commitments. (CLEAR, n.d.-a)

The protocols give the step by step of “how to do things” (Lab book 2021, 5). They “are based on collective work by generations of CLEAR labbers. They are, in a sense, alive. They are always

² For a detailed explanation of the protocol, see <https://civiclaboratory.nl/2021/04/29/choosing-lab-values/> to watch a mini-documentary on the process.

changing, always adapting” (CLEAR 2021, 33). As a result, rather than rigid rules or static guidelines, CLEAR protocols grow and adapt as the lab does the same.

The protocol for choosing values starts with lab members telling stories³. This “allows us to focus on values we already have and enact” (CLEAR). The lab uses a prompt to decide which stories to tell:

Talk about a time when something happened that made you really glad to be here.
Stories with people doing things in place are better than statements about what you value. (Liboiron 2021a)

As each person tells their story, the facilitator or notetaker jots down the values they hear (Liboiron 2021a). From there, the lab follows a process to cluster, rank, and articulate the shared values. The lab even collectively decides on the precise wording to define each value and collaborates on a list of how each value is enacted in practice. The result is a set of collective values that guides laboratory practices and decision-making.

Given the collective nature of the lab’s values, as the collective changes, so do the values. In the years I have been a member of CLEAR, the lab has only undertaken the full process to choose new lab values described above once in 2021. However, the values are periodically revisited, revised, and refined through a collective review that Max describes as “renewing our vows.” I’ve participated in these meetings numerous times and when they say collective, they really mean collective. Every line of the lab book describing the values is reviewed following a consensus-based decision-making model. Over the years, the changes reflect not only changing membership but also shifting directions of the lab as a whole. Subtle shifts in values or not, the centrality of values as the overall guiding force for lab practices remains constant.

³ Originally, I was going to write “simply telling stories.” However, my time with CLEAR has illustrated just how difficult telling an actual story is (and how unprepared for the task academic training leaves you)!

The current lab values are humility, accountability, and collectivity, all undertaken beneath an umbrella of good land relations (a central orientation that directs the laboratory and their work). I could explain them in my own words, but that feels wrong given the collective care lab members put into the exact wording to make sure they accurately reflect the laboratory (and the values being articulated themselves).

Our core value, **humility** (understanding we are always connected to others in different and uneven ways) requires **accountability** (the actions that enact gratitude and responsibilities for and to those connections). **Collectivity** is manifested in how we approach our interactions with others, including how we stand with others on their own terms, and how we refuse certain types of relations. (CLEAR 2025, 5)

While it's one thing to say this and it's another thing to do it, interviews with current and former lab members reflected the sentiment that the values actually shape how the lab runs. And even shape how lab members move through other spheres of their life. Ashley Hayward⁴ reflected on this: "I think that the values, no matter where you go in life, are transferrable. One-hundred percent" (Hayward 2023).

Any form of science is guided by values, whether intentionally or not. What distinguishes CLEAR is how the lab incorporates their values into every aspect of the lab which I'll give concrete examples of in the following sections. These values both originate from and inform laboratory practices, from taking out the trash to what size filter the lab uses to process samples. The values of humility, accountability, and collectivity orient the lab towards good land relations. They help guide the lab as a feminist and anticolonial space as CLEAR works towards changing science from within science. They accomplish this as a research space, a methods incubator, and a social collective. In the sections that follow, I will elaborate on these three dimensions of CLEAR.

⁴ "So hi, my name is Ashley, my pronouns are she/her. I'm a settler living in St. John's, NL, which is the ancestral homelands of the Beothuk."

Research space

Like most labs, CLEAR is both a research space and a space of research. CLEAR specializes in “research on plastic pollution including its ties to wild food, food security, and food sovereignty” (CLEAR 2021c). CLEAR conducts place-based research with the objective “to do research that matters to the people of Newfoundland and Labrador” (CLEAR 2021c). This includes creating open-source technology for monitoring plastics and monitoring plastic pollution in Nunatsiavut, as well as other areas in Newfoundland and Labrador, in addition to projects centered on food sovereignty.

Before all else, CLEAR is a lab for communities. Jess Melvin⁵ articulates this point in their description of CLEAR:

...so the first thing I usually say when I try to describe it, is I start simply, and I describe us as a **lab for communities**. So we are **providing a service to them, that they are asking for**. They decide the research question, they send us their stuff, they tell us what they want from it, we give them exactly what they want, and nothing more. And if they want more, then they can ask us, and then we'll do that. And it's basically like we are providing a service to specific communities. And **then I would say we're an anti-colonial, feminist lab space that's aiming to do science differently**. And providing the service is only one way that we do that differently, by just like, not forcing ourselves on anyone and giving back in the best way that we can. But no, there's other ways, like, **questioning every protocol and method out there really**. You know? **Why? And who does it benefit?** Not taking anything for granted. And being cynical, which I'm pretty good at. Yeah. Yeah, that's probably where I would start. (Melvin 2023)

As Jess explained, CLEAR only works with Indigenous communities when they have been invited, a foundation that's central to enacting humility and accountability, and of course, good land relations. CLEAR works to answer questions that communities want answered. It took the lab four years before they were invited by their first Indigenous partner to collaborate on research (CLEAR 2021d). The lab has established long-term relations and engages in an extensive community peer

⁵ “Hi, I'm Jess Melvin. My pronouns are she/her. I am a settler currently living and working from the ancestral homelands of the Beothuk here on the island of Newfoundland. Well, specifically the Avalon peninsula, and I am CLEAR's lab manager, so I handle everything wet lab.”

review process for all the research on plastics conducted by lab members. As Jess expressed, *how* CLEAR does research is part of the research as well (I'll discuss this in the methods incubator section in a moment).

As a result, CLEAR's work spans the social and natural sciences alike. How they understand that divide is primarily pragmatic, however. This is evidenced by the main division in CLEAR's Google Drive folder where they organize, store, and share all of their research within the lab. The research is divided into two main folders, "science-y projects (projects that smell)" and "social science-y projects (projects that do not smell)." So, the division is centered on the materiality of the different forms of work more than anything else (i.e. projects that smell and projects that do not smell). And given that the lab often works with fish guts, the folders are certainly aptly named.

The wet lab in St. John's is where most of the projects that smell can be found, making it a central part of CLEAR's infrastructure. It's where they process samples (typically guts, but also surface trawls, ice cores, and other things that may or may not contain plastics) for their research collaborations. It's a space of *doing* science and even more than that, it's a space for doing science *differently*.

At first glance CLEAR's wet lab looks like any other academic laboratory. You'll find rows of lab benches with the classic black epoxy-resin counters, stainless steel sinks, microscopes, lab coats, a fume hood, and a white board flanked by emergency eyewash stations. For those who have worked in a wet lab before, it's likely that none of these things would feel unfamiliar. However, the feel of the lab is precisely where CLEAR differs from so many other spaces. This feeling is the product of not only the laboratory culture cultivated in/by CLEAR, but also the product of the physical space. In the following section, I take you through some of those details. But first, I want to ask you to take a moment and imagine a lab coat...What color is it?

When I visited the wet lab in October 2024⁶, I walked into the room and was handed a lab coat to wear. Lab coats serve multiple purposes in a wet lab, they can protect the person wearing it while also minimizing the contamination of samples. More than that though, a lab coat is often a visual marker of scientific identity—like a bright neon sign hanging over someone’s head flashing “I’m a *real* scientist.” So, getting back to my question above—what color is a lab coat? Did you answer white? I’d hazard a guess that you did because that’s the dominant image of a scientist (Downey 2021)—dressed in a white lab coat. That image is also often of a white man wearing said lab coat⁷, although that trend might be changing, at least for children asked to draw a scientist (Langin 2018). Either way, this dominant image contributes to narrow understandings of who can be a scientist (Subramaniam 2014). The white lab coat can also be intimidating for those in a lab for the first time or who don’t fit that dominant image.

If you’re a member of CLEAR, you may have had a very different answer. In CLEAR, the only white lab coats are ones that have been cut apart, painted, stitched, and drawn on, before being reassembled into a knowledge quilt⁸ (Figure 2.1). As for the lab coats you wear, they’re pink, or what some might call salmon (Figure 2.2). Why does this matter? What does it do? It creates a different, less intimidating (and I would also argue, more joyful) atmosphere. It

⁶ From my fieldnotes on my first impressions of the laboratory: I’m still shocked at how comfortable I felt first entering the lab. It feels different than any other lab space I’ve been in. I’m also shocked by how much more comfortable I am inhabiting these spaces in person than I am online. Is it the small talk? Being able to see people’s body language (especially Max’s)? Or is it just that I am really excited to be here?

⁷ I was making a Prezi presentation about CLEAR and noticed that they have a new AI function. Curiosity got the best of me and I had to try it! You simply give your presentation a title and Prezi makes an entire presentation (not a particularly reliable one albeit). One thing really struck me though, it created a slide that explained a “laboratory.” Want to hazard a guess what the photo on the slide was? A white man wearing a white lab coat surrounded by test tubes and beakers. Shocking, I know.

⁸ This was the result of Pam Hall’s time as artist in residence. Pam cut apart a lab coat and gave the different pieces to each lab member, asking us to illustrate something that came to mind after having a collective conversation about knowledge. Pam then reassembled the pieces into a new quilt that hangs in the lab.

challenges dominant images of science. The lab coats are a constant visual reminder that CLEAR is working to do things differently, though they aren't the only visual reminder.⁹



Figure 2.1 CLEAR lab quilt project assembled by artist in residence, Pam Hall. The quilt squares themselves were made by multiple lab members in response to discussion prompts about knowledge. Photo by Christina Crespo.

⁹ To clarify, the lab coats weren't dyed pink for this purpose. They were dyed pink for practical reasons—the pink helps the lab to identify contamination from the lab coats in samples since there aren't a lot of pink fibers otherwise. As a result, pink lab coats are common for contamination protocols in plastics labs. However, even though that's the purpose for dyeing the lab coats pink, it isn't the only consequence of it.



Figure 2.2 CLEAR labbers Melissa Morgan, Riley Cotter, Sam Morton, CJ Hoegg-Phelps, Jess Melvin, Max Liboiron, and Alex Flynn (left to right) wearing the signature pink CLEAR lab coats. Photo by Alex Stead.

As the lab manager, Jess, showed me around the brand-new lab, I noticed other small, and not so small, ways the space differed from other labs I previously worked in. The cabinet that holds processed samples and the like from lab projects is filled with brightly colored and patterned boxes (Figure 2.3), each with the project's details written on labeling tape across the front. While the labels are no surprise, the general aesthetics of the project cabinet fostered a different affective orientation to the work than what's often seen—one that created positive feelings. While the projects themselves may still invoke stress, the storage doesn't have to. Looking around the lab, the walls are covered in signage, most of it handwritten and even illustrated. The standard formal university documents written in black typeface across a white page stand out (Figure 2.4). Even the sign reminding labbers to wash the sieves before and after use had character. Beyond aesthetics, the content of the signs further cultivates an open atmosphere (Figure 2.5).



Figure 2.3 CLEAR project boxes. Photo by Christina Crespo.

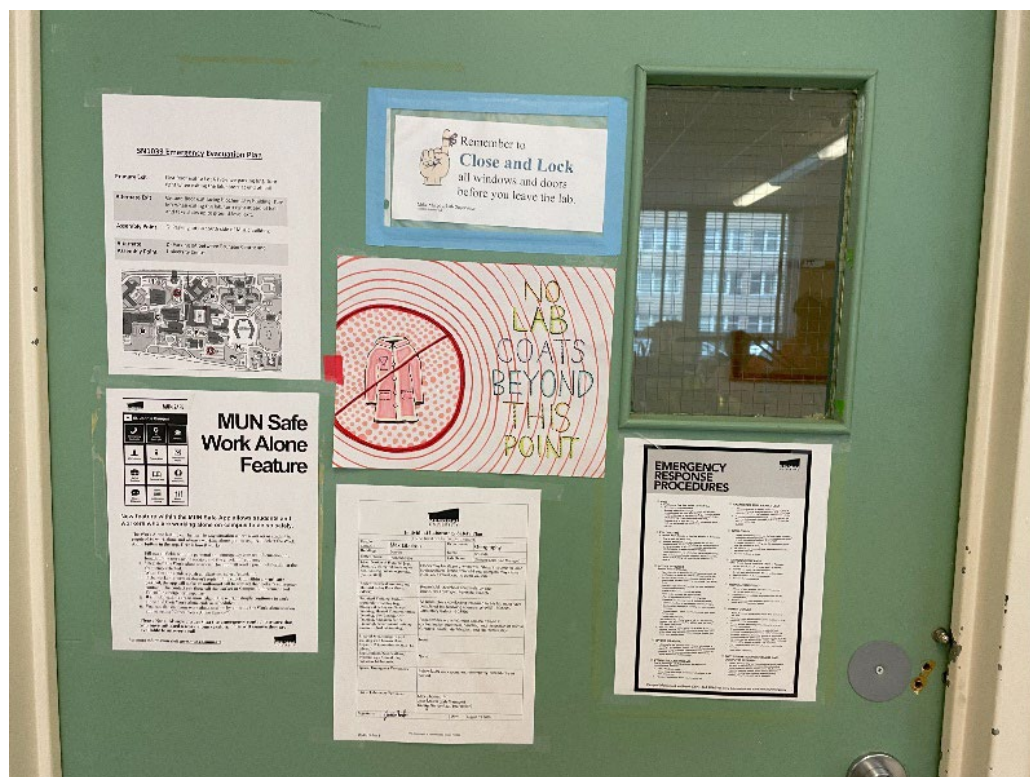


Figure 2.4 University and CLEAR signage side by side. Lab coat sign by Sid Ford. Photo by Christina Crespo.

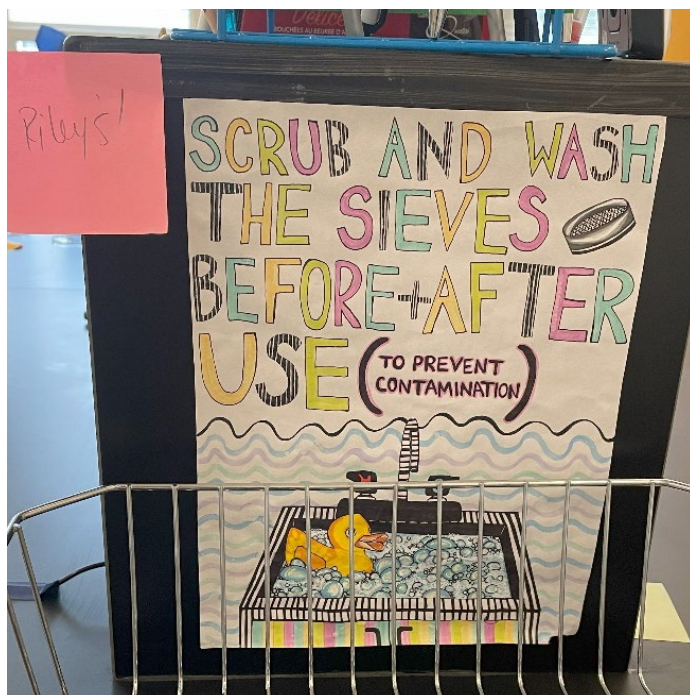


Figure 2.5 Example signage in the CLEAR wet lab. Sign by Sid Ford. Photo by Christina Crespo.

Taken together, all these details of the lab contribute to making the often-intimidating prospect of lab work less imposing. This is especially important given that for many of the undergraduates who work in CLEAR, it will be their first time working in a laboratory, a potentially daunting experience. These visual dimensions work together with how training occurs in these spaces to help teach students how to do *good* science.

As a whole, there's a pedagogical orientation to the wet lab. The protocols taught here teach more than just a series of steps to follow, they help students learn how to practice *good* science. For example, I attended a training session for the visual verification of plastics (VVOP) while I was visiting CLEAR. If you read the lab protocols for processing samples, you'll quickly notice that the methods speak to more than what you might typically find in a lab book. The protocols speak to lab values, such as accountability...

We have found that two things *consistently* make it harder for sample slingers to get good results, even if they've been doing it for years: being tired and/or stressed, and listening to music with lyrics or podcasts or doing other language-based activities while processing. Our science is only reliable if we can find all the plastics— so please

set yourself, our projects, our lab, and our partners up for success by not doing language-based activities and refraining from processing samples when you are particularly tired or stressed. (CLEAR 2025)

By not processing samples when folks are tired or stressed and by only listening to instrumental music (if anything), labbers are able to put their whole concentration into the task at hand. This is a key way the lab enacts accountability, both to the samples and to their community partners. Having multiple checks for quality assurance is another way these accountabilities are enacted. The protocols also include a note to not wear earbuds¹⁰ while processing guts as this “blocks out the sample” or separates you from the animal that you are currently working with. This show of respect is one small, but important, way that the lab teaches and enacts good land relations.

One of the most unique points in the VVOP protocol asks members to self-reflect. The purpose of the VVOP protocol is to “guide you through the process of confirming whether the plastics in the coffee filters are indeed plastics of other anthropogenic (human-made) debris, and to create data about morphology, colour, size class, size, weight, erosion, and erosion type of each plastic for final analysis” (CLEAR, n.d.-b). As part of this protocol, lab members are asked to reflect on their own thinking:

If you think this is weird or over the top or too touchy feely, **think about why you think that**. What has to be true or in place to treat scientific samples or plastics differently than other things in the world? What kind of relations have to exist for that? What kind of relationships can’t exist if that is true? **How do you think the different treatments impact the science (spoiler: they do)?** Dr. Liboiron has a chapter about plastics as land in *Pollution is Colonialism* **if you would like to think about this with some support**. You should count the hours reading as work hours.(CLEAR, n.d.-b)

¹⁰ Listening to music on a speaker is okay because it doesn’t create that degree of separation wearing earbuds does (as long as the music doesn’t have lyrics and other labbers okay the genre and volume). Think about it this way, if you were having a conversation with someone, how would you feel if they had earbuds in versus listening to music in the background that you both could hear?

The quote illustrates how the lab approaches training. It encourages members to reflect on how they react to being confronted with new ways of thinking and doing and to seek additional support, bolstering humility and accountability. The quote also highlights the material value that the lab places on such work. Notice that completing additional readings is counted as paid labor. As a result, the protocols teach *how* to visually identify plastics while simultaneously teaching lab values and providing support for that learning.

CLEAR's training approach gave students a chance to learn through trial and error, all the while providing support when needed. During the VVOP training, Max¹¹ frequently reiterated that it's okay to make mistakes. Mistakes are expected. They are part of science. The important thing, however, is how you remedy those mistakes. This reflects Max's approach to mentoring which they described to me as the following:

So my style of mentorship is sort of like, **I'm gonna throw you in the deep end of the pool with a set of really good pool noodles. And I'm going to come back in a week, but there's going to be so many floaties in the pool, and so many lifeguards that you'll be okay. But I'm not holding your hand through this.** Okay, two weeks later, I'll come ask, 'how'd that go? Oh, you made a ton of mistakes? Absolutely. Did you waste a lot of money? Thought you might, but what did you figure out?' Right? So I think a lot of mentors also use the "throw you in the pool" sort of thing. But **you have to provide a lot of scaffolding and space for profound mistakes if that's your model,** and I think that is missing from other spaces that use the deep end of the pool approach. I find that a lot of positive language around making mistakes is discursive as opposed to supported in practice. **In CLEAR I feel like it's in practice...**there's only one time I have ever gotten mad at someone in CLEAR. And it's when someone fucked over another student and knew she did. Right and that will set me on fire. But if you miss your \$3,000 flight out of Labrador, I'll be like, 'well, when's the next one?'

Max's quote highlights a fundamental orientation of the laboratory, an orientation towards learning and developing lab members' confidence.

¹¹ My name is Dr. Max Liboiron, L-I-B-O-I-R-O-N. My pronouns are they/them, I am Michif, or Red River Métis, and settler. Grew up in treaty six territory. But I have been living and working in Newfoundland and Labrador for about 10 years, which are the homelands of the Beothuk and the Mi'kmaq. And I also work in Nunatsiavut which are the homelands of the Inuit. And my pronouns are they/them.

How CLEAR is structured from its aesthetics to its mentoring model supports that learning—is oriented towards that learning. It’s a space that accepts mistakes while providing the tools and support (and extensive quality assurance protocols) to remedy them. What you find in the wet lab often serves multiple purposes, to do the science *and* to do it in a way that enacts CLEAR’s values. The tools created for collecting samples do more than collect samples. The signs that remind labbers of this or that, do more than just remind. They foster learning all the while showing labbers what’s possible within a space of academic science. Whether in the wet lab or outside of it, as a research space, CLEAR differs from dominant science in *how* they do science which brings us to the methods incubator.

Methods incubator

How CLEAR does research is as important as the research it does. If you open up the “Methodological Projects” section of CLEAR’s website, you’ll first see two brief sentences that sum it up: “CLEAR aims to do research with humility, accountability, equity¹², and in good land relations. The question is: how?” (CLEAR 2021b). That “how?” question results in a central dimension of the lab—a methods incubator—a space for creating ethical methods for everything from running a meeting to monitoring plastics. As Sam Morton¹³ explains, the lab takes what is typically normalized or taken for granted and breaks it down, all the while expanding it, drawing out the relations and values that inform a method or practice.

I love all the spaces we have that are **deep dives on the why, and the mechanics, and the how, because I value how-questions and I love asking how do we do this thing?** And yeah, something I really value about those spaces is we look at things that seem normal, or like, that’s just how you do it. And it’s something that seems two-

¹² Equity was previously one of the main values that guided CLEAR’s work. Over time, the lab evolved and developed different language for their values. Eventually, equity was refined to collectivity.

¹³ “My name is Sam Morton. I use she/her pronouns. I’m a settler, originally from Southern Ontario. I grew up in a town called Georgetown, which is the traditional homelands of the Attawandaron, Haudenosuanee, and Anishinaabe people, and the Mississaugas of the Credit First Nation. Now I live and work in St. John’s, which is the traditional territory of the Beothuk. And I’m a PhD candidate in the Department of Geography, where I work with Dr. Max Liboiron and Dr. Nicole Power.”

dimensional, through our conversations, we just expand it and make it 3D. It's like, actually, **all these things are in this, and it has its own politics**. And this is how, you know, different members relate to that politics, navigate it. **Nothing is too small to explore its complexity** (Morton 2023)

By making things three-dimensional, the lab is able to rethink how things are normally done. Importantly, they also make their methodological innovations freely and publicly available so others are able to use these methods as well.

In the chapters that follow, I'll be using a case study of one of CLEAR's methodological projects, citational politics, and within that case study, I'll be discussing other ways in which CLEAR has both answered and works to answer that "how?" question. For now though, I want to give you one example that relates to the work of the wet lab—BabyLegs (Figure 2.6). You might not guess it from the name, but BabyLegs is actually a surface trawl for monitoring marine microplastic pollution in surface water. So why is it called BabyLegs? That gets right to the heart of how CLEAR works as a methods incubator.



Figure 2.6 BabyLegs in action. Photo by David Howell.

Early in CLEAR's history, they ran into a problem—how to collect plastics in a way that enacts CLEAR values. CLEAR wanted the surface trawl to be easily replicable by community members. So, they visited a local store and made BabyLegs only out of objects that they could find there, including a pair of baby tights that served as the collection nets (and how BabyLegs got her name). However, creating new open-source technology also meant circumventing the university patent system. So, CLEAR leaned into those baby tights and used strategic essentialism¹⁴ to feminize BabyLegs as a way to make the technology less desirable (and consequently not patented, so that it could remain open source and accessible to the community) (Liboiron 2017). If you'd like to learn more about BabyLegs and how she came to be, I highly recommend reading "Compromised agency: The case of BabyLegs" by Max Liboiron.

As a methods incubator, CLEAR directly reimagines what's possible in the space of science. It reimagines *how* research can be done—from the collection and processing of samples to citing sources to taking out the trash. One of the important *how's* that CLEAR works towards, is how to work together. This brings us to our third hat that CLEAR wears, a social collective.

Social collective

CLEAR is a collective, rather than a collection of people. That means we have some shared goals and values and **an intentional (rather than incidental) laboratory culture**. If you're reading this as a new CLEAR member, you're coming into this **community and its accountabilities**. They require some documentation: that's the lab book! It's imperative that all lab members are fluent in part one of this book, as it outlines the foundations of our values and commitments. (CLEAR 2021, 5)

As a community of practice, CLEAR spans a diverse group of individuals with shared interests who work together on a regular basis. Most of the current lab members are affiliated

¹⁴ Strategic essentialism is a political tactic described by Gayatri Chakravorty Spivak wherein marginalized groups embrace essentialist categories for the purposes of advancing a particular agenda all the while remaining conscious of the potential risks that come with such essentialization. In the case of BabyLegs, the feminization bolstered sexism in some ways, however, it also served a particular and important purpose—keeping the technology open source. It's an example of enacting what Max Liboiron refers to as compromised agency (2017).

with Memorial University of Newfoundland and Labrador, however, there have been a number of members from other areas and institutions in Canada, the United States, as well as other countries across the globe. Laboratory members come from a range of backgrounds, disciplines, career levels, and institutions. On average, there are about 20 CLEAR members at any given time. This typically includes natural scientists, social scientists, education scholars, and artists from different career stages such as high school interns, undergraduate students, graduate students, post-graduates, faculty, and professionals. The laboratory also frequently hosts guests and regularly collaborates on projects with unaffiliated researchers.

However, as the above quote from the lab book states, CLEAR is more than a collection of people, it's a collective. The lab's structure and membership have also changed over time as the lab's director, Max Liboiron, has experimented with different approaches. Given the nature of a teaching laboratory, membership is often in flux as new cohorts regularly join the lab while others become alumni—making mechanisms for maintaining a collective culture especially important. Part of the way CLEAR maintains the collective, however, is through boundaries.

CLEAR is NOT a radically inclusive lab. It would NOT work if it was. Instead CLEAR is a collective built on shared values, it's "**a community more than just a lab**," as Ashley explained (Hayward 2023). Max described this in their interview with me:

I think this goes back to the **semi-permeable membrane**¹⁵. So a **collective is a lot more like an organelle, or an organism**, than a bunch of stuff together. Right? It's a gestalt that works together. In some kind of harmony, uneven as it may be. And it maintains itself. And that's it, that's all it has to be. It's like an organism. **It eats, it shits, it maintains itself. It doesn't have to be profound. It doesn't have to be pushing the boundaries. It doesn't even have to work well. But it does have to be self-replicating, you know, it has to work.** In our case, it can absorb different individuals, and it can lose certain different individuals in the thing but the thing endures. (Liboiron 2023)

¹⁵ For a full description of collectivity and the semi-permeable membrane see Appendix 1.

The semi-permeable membrane is a way that Alex Flynn¹⁶ originally described the lab value of “collectivity” and is now included in the description of collectivity in the lab book. A semi-permeable membrane allows some substances to pass while blocking others. That’s how the hiring process works in CLEAR. Max and the lab manager filter who comes into the lab based on what values they show in the interview. Not everyone is allowed into CLEAR, but those who are, are carefully selected to work within the existing group, a point which Riley Cotter¹⁷ raised when I spoke with them:

I also didn't realize **that once you're in the lab you're meant to be there** basically, unless you show otherwise. **Like it's not just we take anyone and wait for them to screw up and kick them out.** (Cotter 2023)

By hiring based on shared values over skills or preexisting knowledge, the lab is able to do the kind of work it does. Knowledge and skills can be easily taught. How not to be an asshole, not so much.

Though the lab functions as a social collective, it is hierarchical to some degree, with Max at the top (Figure 2.6). The laboratory also employs a full-time lab manager who works closely with Max to manage and oversee everyday operations (Figure 2.6). However, at the end of the day, CLEAR is Max’s lab. This is plainly set out for lab members in the Lab Book:

Sometimes people forget this is Dr. Liboiron’s lab because it’s not called Liboiron Lab. But it is. **Dr. Liboiron directs the lab and is accountable for everything it does.** (CLEAR 2021, 43).

Sometimes hierarchy can be perceived as a dirty word, however, for CLEAR, “hierarchy is about identifying accountability and responsibility in uneven power relations” (Liboiron, Melvin, and

¹⁶ "Okay. Hello, my name is Alexander Flynn. My pronouns are he/him. I'm from the South coast of Labrador and of mixed Inuit and settler descent. I am a research assistant here at CLEAR. And I work as a master's student in biology at Memorial. I am living in St. John's, which is the ancestral homeland of the Beothuk and Mi'kmaq."

¹⁷ "My name is Riley Cotter. My pronouns are he him I am a settler born and raised and currently work from the island of Newfoundland which is the ancestral homeland of the Beothuk and the Mi'kmaq and I'm a master's student at CLEAR."

Morgan 2024). It's a way to account for the fact that as a tenured faculty member, Max will always have more power than the students in the lab. That can't change, but it can be and is taken into consideration. Max reflected on the cons of a fully horizontal space during their interview:

There were a lot of jerks in Occupy¹⁸ like there are in any totally inclusive spaces, which Occupy was, and totally horizontal. So, this is when I was like, 'oh, horizontality. **There are some serious cons to horizontality.**' It is not a model I love. Although Occupy Sandy was completely horizontal, and because of that it was the most successful relief organization that could run without many bottlenecks and be highly responsive. So, **I understood a lot about horizontality. CLEAR isn't horizontal, though I take some of the skills required for horizontality and bring them into the lab.** So yeah, a lot of those social movement skills are what you see in CLEAR. I mean, I settled on like, six facilitation techniques that we do all the time. But those are anti oppressive facilitation techniques. These are consensus-based decision-making. Those are things I learned in social movements. (Liboiron 2023)

I'll talk more about facilitation techniques in Chapter 3; however, I want to call attention to the typical association of horizontality with justice work. Max's quote highlights the structure of CLEAR—it's **not** horizontal, but it **is** still a collective. The two things aren't mutually exclusive.

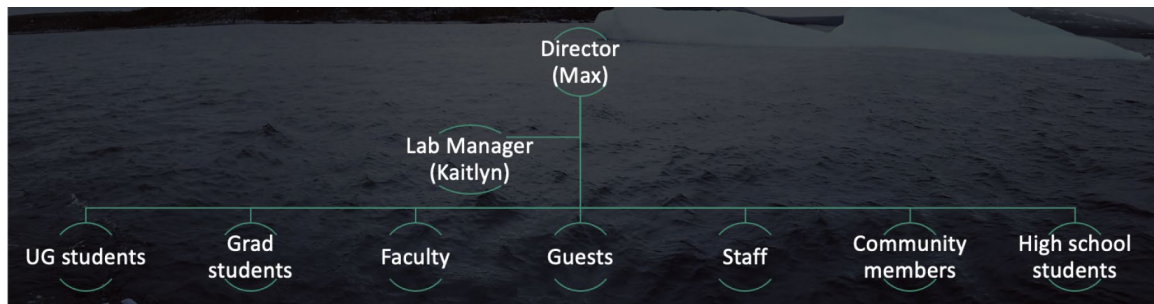


Figure 2.7 CLEAR's hierarchical structure from the CLEAR Lab Book 2021, 43.

Beyond this hierarchy premised on accountability, the rest of the lab is horizontally structured. CLEAR follows a consensus-based decision-making model so that regardless of an individual's career stage, all other lab members "have the same amount of decision-making power" and are "equal in terms of responsibility" (CLEAR 2021, 44). So, you can think of the lab

¹⁸ "Occupy" referring to the Occupy Wall Street social movement.

as a shallow hierarchy (only composed of the main divisions of Max, the lab managers, and everyone else). This structure is one of the things that makes the lab so good at what they do.

All of the projects in the lab are collaborative, even the dissertations. Figure 2.7 gives an example of what this looks like in practice. Notice that Max oversees all projects, however, other members of the lab may work on multiple projects at once or over their tenure as a lab member.

The Lab Book sets out this structure for new members, explaining that:

While Dr. Liboiron is involved in all projects in some way or another, and the lab manager is responsible for some of their logistics, there are many, many sub-projects going on at once and each has different lab members involved. Some lab members only come to lab meetings and are involved in the lab-wide project (e.g. citational politics, or the artist in residence program). Graduate students have their own projects, but often (almost always) other lab members are paid as RAs to help. Other projects have point people that are responsible for overseeing the project (often that person is Dr. Liboiron, but often not). Thus, every lab member is involved in one or more projects. (Lab Book 2021, p. 44)

Most projects are run by a point person who is accountable for the work (they aren't necessarily in charge, but they do keep the project running) and a working group of individuals dedicated to the project. This collaborative structure is central to not only how CLEAR operates but to how it functions as a social collective.

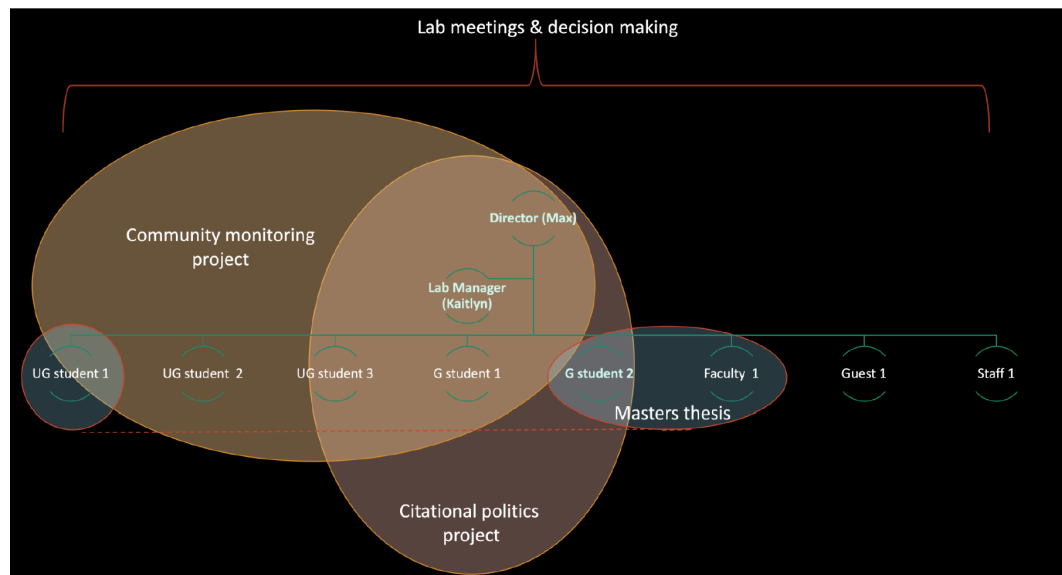


Figure 2.8 Sample project organization and decision making, from CLEAR Lab Book (2021, 44).

The multiple projects that the lab works on brings with them different relations and accountabilities. Recently, the lab collaboratively mapped these out (Figure 2.8). The accountability map is vertically divided by stakes: with rights at the top, followed by high stakes, and then low stakes. Accountabilities that the lab deemed the most important are marked with dots and stars, so it's not surprising that accountabilities attached to rights were ranked the most important, such as Indigenous data sovereignty. Horizontally, the map moves across different scales of relations with global at the far left all the way to the self on the right. Notice that the accountabilities don't extend much past Indigenous nations. Beyond that are scales of relations that are simply too broad for CLEAR to be accountable too. However, the lab is in relation with Indigenous nations, the academy, Newfoundland and Labrador, the university, their collaborators, the lab itself, and to individual members of the lab. However, the lab isn't equally accountable to all of those parties. Rather, relations are uneven and context dependent which is why the accountability map is so textured.

consent process (which I discussed in the introduction chapter). Then the protocols, processes, and relations(hips) of accountability, humility, and collectivity can take care of the rest.

So to summarize, CLEAR is a social collective made up of diverse scholars, though it is not entirely horizontal. Max directs the lab and this hierarchy is one premised on accountability to address uneven power relations. Other lab members are all equal in respect to decision-making power and responsibility. All projects are collaborative and the accountabilities and the relations in the laboratory are complex. In order for the collective to work, it is premised on shared values, meaning that the boundaries of the laboratory are fundamental to its operations.

Conclusion: CLEAR magic

As a research space, methods incubator, and social collective, CLEAR is a space that cultivates hope and renders it a concrete reality. A space where science and scholarship are grounded in the values of humility, accountability, collectivity, and good land relations. As a result, what happens in CLEAR is more than the production of consumable knowledge. It's also a site for producing possibility—for producing different kinds of scholars and scholarly relations.

There are environmental factors which have facilitated CLEAR's development, including the kinds of institutional support CLEAR exists within. Consequently, CLEAR is not directly transferable to other contexts. However, from my time with the lab, I have come to understand CLEAR as a magical space; it makes things happen that I never thought *possible*. CLEAR's magic isn't about transforming a pumpkin into a carriage—it's a different kind of magic, but a transformative magic all the same. CLEAR transforms often hostile spaces into ones of hope and rejuvenation. It turns tiny everyday tasks into world-changing possibilities. It transforms what we imagine is possible *and* provides the tools to turn those possibilities into realities. CLEAR is a magical space because it makes things thought impossible, possible. I might be using a bit of

hyperbole here, but the truth is that CLEAR *is* a special place. One where different, and desirable, forms of academic relations take place.

INTERLUDE TWO. JOINING CLEAR

I get asked how I joined CLEAR all the time. Joining CLEAR was in many ways serendipitous, but it also mirrored CLEAR's own approach to research—I was invited to join! This reflects CLEAR's research policy—they only work where they've been invited, an important foundation for an anticolonial lab.

I met with Dr. Max Liboiron as part of the Society for the Social Studies of Science (4S) annual meeting's mentoring program in 2019. I didn't know it at the time, but that meeting would change my entire orientation towards not only my research but also academia more broadly. A close friend and collaborator (thank you Dr. Samm Holder!) had recently shared how valuable they found participating in a similar program at a different professional meeting (I highly recommend them!) So, I signed up as both a mentor and mentee.

At the time, I had been feeling rather disenchanted with academia (from some less than awesome experiences in feminist spaces) and yet re-energized all the same (from reading some awesome feminist scholars). I went to 4S wanting to study feminist science after my previous dissertation project in Cuba fell through because of political changes. My work was moving more towards the realm of feminist science and technology studies and I learned a lot of valuable critiques of science—ones that really hit home for me as a once upon a time biologist. Consistently, my response to the critiques was, so how do we do science better? What can I/we do better? How? This led me to feminist science and the works of Deboleena Roy and Banu Subramaniam. Their works on feminist science (in practice) are what first brought me to this project. So, I wrote up a proposal to study *how* feminist science is *done* and was off to the conference!

It's probably not surprising then that on the mentoring interest form, I had indicated that I was interested in feminist science. Thank you to Matthew Harsh, the Mentorship Program Coordinator, and the other mentoring program organizers who paired Max and me! Before the conference, Matthew introduced the two of us via email and I had a chance to look into Max's work before we met. During our meeting, I told Max about needing a new dissertation project and they stunned me with their response. "Come study us," Max said, taking their work as a mentor far beyond any of my expectations.

When I first joined CLEAR, I was in the midst of some hardcore burnout. I'd been frustrated with academia...then came the pandemic...that really wasn't helping. I read the work of Sara Ahmed and found comfort, it reminded me that I'm not imagining things or overreacting. In describing 'diversity work' she explains the phenomenon of coming up against a brick wall, that "[t]he feeling of doing diversity work is the feeling of coming up against something that does not move, something that is solid and tangible. The institution becomes that which you come up against" (Ahmed 2012, 26). In *Living a Feminist Life*, Ahmed even includes a photograph of a brick wall with the caption "a life description" (Ahmed 2017, 143). Despite the somewhat bleak outlook, Ahmed's work provided comradery in coming up against brick walls.

The problem is human bodies are fleshy and fragile in the grand scheme of things. If you keep throwing yourself against a brick wall, you are going to find yourself getting hurt, possibly turning into a metaphorical pile of mush strewn at the wall's feet. So, while Ahmed's work helped me make sense of my frustrations, it did little to provide much hope for how to move forward when the way is obstructed by bricks and mortar that have, thus far, withstood the test of time. However, as Max Liboiron explains, "understanding that power is not a monolithic wall to throw your soft body against" is "an important part of anticolonial science" (2021, 130).

Max's work and CLEAR gave me an answer—screw the brick wall, find your own path. As a result, coming into CLEAR was a breath of fresh air, albeit a terrifying one. In one of my first meetings with Max about joining the lab, they told me a story about another anthropologist, Lauren Watwood, who had been working at CLEAR for their master's research. The story was shared by Lauren and has since been published with her consent (see Liboiron 2020).

Lauren spent her first day in lab “voraciously cataloguing every interaction, every gesture, every idea discussed” (Watwood, as cited by Liboiron 2020, 68). She thought to herself “‘My, my...I am doing quite a good job being an anthropologist! Mhhmm. Look at this gold I’ve already collected’” (Watwood, as cited by Liboiron 2020, 68). Later that first day, Max sat down and asked her, if she had already been collecting data. Lauren enthusiastically replied that she had and Max responded...

...calmly, deadpan: ‘That’s stealing...You came in assuming entitlement to extract data and acted in a deeply colonial, imperialist manner. You thought you could come in here and take information from us without our consent, even after we’ve talked about needing to have a consent process in place. That’s harmful.’ (Watwood, as cited by Liboiron 2020, 68-69)

Max told Lauren that she needed to apologize and see what the lab wanted to do. Lauren crafted an apology and shared it with the lab as a group. After her apology, Lauren was “welcomed into the lab” (Liboiron 2020, 69).

The first time I listened to that story, the moral I heard was ‘don't fuck up.’ Don't perpetuate anthropology's colonial moorings. Or else. That story scared me. I *really* didn't want to fuck up. Max brought up that story again when I interviewed them in their office at Memorial University in 2023. After hearing it many times, it wasn't until then that I actually heard something different. I thought the Lauren Watwood story was a cautionary tale. I couldn't hear the story for the values it was sharing until listening to Max telling it again years later (after lots of unlearning!). The moral wasn't don't steal (though that still holds true), it was about humility and

accountability. It was about that it's okay to make mistakes as long as you make amends asap. However, all I could hear was 'don't fuck up' since that seemed to be the moral of every academic tale I'd heard as a student. It permeated my bones so thoroughly that it took three years for me to really start shaking it.

There's an important moral to the story I'm telling here today as well. Unlearning the trauma of academic baggage isn't always easy, it can take time, even in the best of spaces.

CHAPTER 3. MEETING MATTERS/MEETINGS MATTER

According to social theories of learning, students of science learn to be scientists by *doing* science within a scientific community. I don't know about you, but when I first think about 'doing science' my mind jumps straight to the lab bench, and studies have indeed demonstrated that identity formation happens in the laboratory (Subramaniam 2014; Traweek 1988; Myers 2015; Hunter, Laursen, and Seymour 2007; Wylie 2019). However, my work with CLEAR has shown that other spaces of doing science also play a key role. Beyond the laboratory, I argue that meetings are an important collective space for doing science that informs the production of future generations of scholars. Meetings are a site of possibility.

Meetings are central to how CLEAR operates. Given the working group structure and that all projects are collaborative, even dissertations and theses, meetings are a frequent and fundamental experience in CLEAR. In this chapter, I focus primarily on weekly lab meetings. Lab meetings are an important space and practice for creating and sustaining the collective culture. All lab members who are able to do so¹ attend these meetings and any decisions that impact the lab as a whole are made in these spaces. This is evidenced by the lab book which identifies lab meetings as key to maintaining a collective rather than a collection of individuals (CLEAR 2021a, 5). Moreover, in our interview Max² explained, "the goal of every lab meeting is to work on the

¹ The number one rule in the lab also applies to lab meetings: "if you are heartbroken, unwell, or exhausted, you go home and take care. Your lab work/schoolwork/job is not more important than your life" (CLEAR, 2025). This rule enacts both accountability and collectivity within the lab. As a CLEAR member, you are accountable to yourself, but also to your lab mates and the work that you do. This rule is often hard to follow though, given how intensely students are socialized into an academy that rewards self-sacrifice. There's a lot of unlearning to do. To counter this, max frequently reinforces the rule by thanking lab members when they opt to stay home/go home to take care. These thank yous serve as subtle reminders of the lab's values and how they are enacted.

² My name is Dr. Max Liboiron, L-I-B-O-I-R-O-N. My pronouns are they/them, I am Michif, or Red River Métis, and settler. Grew up in treaty six territory. But I have been living and working in Newfoundland and Labrador

collective” (2023). Taken together, these points show that CLEAR values lab meetings. However, what actually happens during a meeting?

Weekly lab-wide meetings are a primary way lab members are enculturated into CLEAR and socialized as scholars. I argue that members don’t only learn through the content of the meetings, they are also learning through the meeting structure. This learning includes both skills and tools for practicing feminist and anticolonial science, as well as the norms and values that go with that. As lab members move through spaces outside of CLEAR, this learning comes with them, forming the basis of and for transformative change. As a result, to understand how CLEAR operates, it’s necessary to understand how lab meetings work.

To illustrate how CLEAR meetings are structured and demonstrate how this shapes what members learn through meetings, I use a case study of a specific multi-year CLEAR project, citational politics. This chapter is based on participant observation of lab-wide meetings that focus on the project’s initial development. I use thematic analysis of interview transcripts with lab members and others to corroborate and expand on the findings from participant observation. Additionally, I draw heavily from document analysis of the blog posts resulting from the project, the public version of the CLEAR Lab Book (2021), and the internal CLEAR Lab Book. I also draw from relevant documents used during the CLEAR onboarding process. Specifically, I focus on a handout from the Anti-Oppression Resource and Training Alliance (more commonly known as AORTA) on “Anti-Opressive Facilitation for Democratic Process” which outlines the facilitation approach that CLEAR lab meetings are based on. As with the rest of the dissertation, I treat fieldnotes, interviews and CLEAR documents as sources rather than data, including them alongside other referenced work. Taken together, these materials shed insight not only on how

for about 10 years, which are the homelands of the Beothuk and the Mi'kmaq. And I also work in Nunatsiavut which are the homelands of the Inuit. And my pronouns are they/them.

CLEAR enacts their values through meeting structures and facilitation techniques, but also how students are enculturated into the lab through those meeting processes.

In the first section, I discuss the role meetings play in organizations generally before explaining the experience of CLEAR meetings specifically. After which, I tell the story of how the citational politics project began (written in italics to distinguish the story from the rest of the text), providing explanations into the meeting structures at work. I use interview quotes to illustrate the forms of learning that occur through three main facilitation techniques: consensus-based decision-making, collective agreements, and round robins. I conclude with a discussion of how learning from social movements has informed the experience of CLEAR lab meetings. By using facilitation techniques informed by activism, CLEAR changes science by *doing* science. These methods open up new possibilities for what a lab meeting can be and *do*. Not only are the meetings effective in producing good science, they also produce good scientists.

Making meetings matter

How many meetings do you attend in any given week? How many of those leave you feeling exhausted or burned out? How many fill you up and leave you inspired? How many bring you joy? As mundane as meetings may be, they can make or break not just the experiences of individuals or the success of a project, but also shape community culture and beyond (Heath and Wensil 2019; Tracy and Dimock 2004; Scott and Allen 2023; Köhler, Tenzer, and Cramton 2023; Ballard and Gómez 2006; Haug 2013).

Studies of workplaces and social movements alike assert that meetings are important spaces for shaping and maintaining organizational culture (Scott and Allen 2023; Köhler, Tenzer, and Cramton 2023; Haug 2013; Tracy and Dimock 2004) and mobilizing democratic processes (Haug, Rucht, and Teune 2013). Meetings connect members to the past through institutional memory while shaping their present and future (Ballard and Gómez 2006). Meetings not only

form a central infrastructure for organizations (Haug 2013), they can also “build and fracture communities” (Tracy and Dimock 2004).

As AORTA explains³, “[e]ven organizations with great meeting process inadvertently perpetuate barriers to full participation and access to democratic process” (2017, 1; Heath and Wensil 2019). This occurs through group power dynamics, including privilege and oppression which “often marginalize women, people of color, queer, trans, and gender non-conforming folks, people with disabilities, and those with limited access to the cultural cues and financial resources that come with class privilege” (AORTA 2017, 1). I’m going to hazard a guess that no one reading this *wants* to hold meetings that perpetuate oppressive power dynamics. The problem is that without the right processes and “containers” (more on that soon) in place, even the most well-intentioned groups may end up doing just that. However, a meeting can be a space of collective inspiration and community building—a space of transformative learning. All you need are the right tools. That fact alone can be a revelation.

CLEAR meetings

Sitting in a CLEAR lab meeting, you can really feel the difference between CLEAR and other spaces within academia. How the meeting is run and how everyone interacts with one another feels different. Ashley Hayward⁴ expressed this as she described her first impressions of the lab meetings. She said,

³ A quick reminder that the AORTA document I reference here is what CLEAR uses to guide their meeting process. AORTA describes themselves as “a worker-owned cooperative of facilitators, coaches, and consultants devoted to movements for liberation” (AORTA, n.d.-a). The organization’s theory of change rests on liberatory education, leadership development, cross sector/issue pollination, and conflict transformation and healing (AORTA, n.d.-b). Their big picture or goal for the organization is to “catalyze and sustain successful, leaderful movements composed of skilled, democratic, principled, and courageous people and organizations that are able to build collective power and work in solidarity through liberatory praxis (action, learning, reflection)” (AORTA, n.d.-b). During their work with different social movements, Max received training from AORTA and brings this training with them into CLEAR.

⁴ “So hi, my name is Ashley, my pronouns are she/her. I’m a settler living in St. John’s, NL, which is the ancestral homelands of the Beothuk.”

Yeah, it was really good. I'd say I was very **overwhelmed**, just **overcome with emotion seeing such a different environment** from what I've been used to in academic settings. (Hayward 2023)

It can be quite intimidating, even overwhelming, walking into your first CLEAR meeting.

Something that multiple interviewees mentioned. Riley Cotter⁵ explained,

My first impressions were that I was **extremely intimidated** and that I felt like I totally, like just reading the lab book and knowing about the lab, **I felt an extreme sense of imposter syndrome**. Like I know nothing about anything we do here. I know nothing about anything to do with geography or micro-plastics or fish or feminist methods. So it felt like a huge...**It felt like it was going to be a huge learning curve. Even though that's not what actually transpired to be**. But it was so **intimidating** with a giant lab book with all these protocols and things and how to apologize, and how to be accountable, and how to show humility, and how to do all these different things **that aren't expressed explicitly in other academic domains** or anywhere else. It was [pause] intimidating. My first impression was, I was **extremely intimidated**. (Cotter 2023)

Importantly, when I asked Riley if that changed, he replied:

Yeah, oh **it definitely changed...because the lab is very explicit that it doesn't matter if you don't know the answers. It doesn't matter if you're wrong**. Like it's really forward facing in that it's values-based and not like skill-based or knowledge-based. **And it's kind of hard to internalize that**. Like when someone says that in academia and in science, **your first instinct is, "well, that's not true**. It only matters that I'm smart. It doesn't matter if I'm a good person or I have great values." But then as I started to get into it, I realized that that was actually true. So, all the pressure of being wrong was gone. All the pressure of not knowing, feeling like I didn't know anything was gone. **So, it was about peeling back the layers of what I thought it was going to be versus what it said it was and what it actually ended up being**. So, it transpired to be a lot less pressure than it actually was... (Cotter 2023)

Riley's response points to the difficulties of unlearning, a necessity for operating in a space that differs from past experiences. Here CLEAR is a completely different experience for most entering the lab which explains Riley's initial skepticism, and lab members' frequent mention of feeling intimidated when they first join the lab.

⁵ "My name is Riley Cotter. My pronouns are he him I am a settler born and raised and currently work from the island of Newfoundland which is the ancestral homeland of the Beothuk and the Mi'kmaq and I'm a master's student at CLEAR."

However, feeling intimidated is not necessarily a negative experience. This is reflected in Sam Morton's⁶ explanation,

I was **totally impressed**. And yeah, impressed and I'm trying to think of the word to like, **not necessarily intimidated, a bit of that, but more how that work means this is an opportunity to bring my A game**, and I can put my work and energy here. And I might feel like, you know, it's your brain that can sneak in and be like "you're not good enough". But I can try and pause that voice a little bit. And then, because there's so much in the lab that's about what we do, there's so much to grab onto. **And so, you don't have to be sitting in abstraction of like, how do I do well in the space?** (Morton 2023)

Sam's response shows that it's a different kind of intimidation, a positive overwhelmed perhaps? Her response also points to the role that structures and protocols serve in the lab. They form the infrastructure that enables members to do well in this space.

This brings me to one of the most shocking parts of being a CLEAR member (also shocking for the fact that it is shocking), how you typically feel when you walk away from a meeting. This was frequently mentioned in the interviews, but there's also clear long-term observational data to back it up. Max frequently uses a check-in and check-out⁷ during a meeting, such as "weather ball" where we go around the room and each person describes their current emotional state as weather (which importantly doesn't require anyone to go into intimate details). At the start of the meeting, this helps the facilitator (often Max) gauge where everyone's at so they can modify their plan if need be. It also gives a benchmark to compare folks' responses to the same prompt

⁶ "My name is Sam Morton. I use she/her pronouns. I'm a settler, originally from Southern Ontario. I grew up in a town called Georgetown, which is the traditional homelands of the Attawandaron, Haudenosuane, and Anishinaabe people, and the Mississaugas of the Credit First Nation. Now I live and work in St. John's, which is the traditional territory of the Beothuk. And I'm a PhD candidate in the Department of Geography, where I work with Dr. Max Liboiron and Dr. Nicole Power."

⁷ These are common facilitation tools. Sometimes you might just do a check-in to see where everyone is at or maybe just a check-out such as: "what's one word that describes what you're leaving this meeting with?" Both are common during the lab meetings Max facilitates but are also brought into working group meetings facilitated by others. Max modelling these techniques serves as a guide for other lab members to bring them into different spaces.

at the end. Time and again, you can see a positive shift in weather from the beginning to the end of a meeting⁸. This change comes down to good facilitation, but I'm getting ahead of myself.

Meetings are an important collective space for doing science and making scientists. Meetings can shape and maintain organizational culture all the while mobilizing democratic processes. However, without the right structures in place it is easy to unintentionally perpetuate barriers to full participation. In CLEAR, those structures make for a meeting space that differs from many lab members' previous experiences. As a result, it can be a bit overwhelming coming into a CLEAR meeting. That feeling of being overwhelmed isn't necessarily a bad thing though. It is the product of entering a new space.

So, it's true. Meetings can in fact leave you feeling amazing, all the while accomplishing collective goals and respecting attendees' time. It's not something that just happens though. It takes work. And training. In the following sections, I'll show you how some of that work is accomplished and what that work accomplishes.

Structuring meetings: A case study

In the following section, I use the case study of the citational politics project to discuss the values and norms that underlie three main facilitation techniques used in CLEAR: consensus-based decision-making, collective agreements, and round robins. Before going forward though, I want to note how this section is visually organized. Throughout the section, I narrate the story with explanations of how mundane academic practices can be oriented towards justice. To help you along the way, I've *italicized* the citational politics story to help distinguish it from the narration which makes up the bulk of the main text.

⁸ What 'good' weather looks like differs between people. For example, being a sunny day is great for me while a gray drizzle probably isn't my ideal state. For others though, a gray drizzle may be the perfect day. So, when gauging the change in weather from the start to the end of the meeting, it's important note that the responses are relative to someone's individual range of weather conditions.

These narrated moments are mainly meant to open up the ‘black box’ of academia—the hidden curriculum through which inequality becomes subtly, and not so subtly, reinforced and consequently reproduced (Margolis and Romero 1998; Romero 2017; Subramaniam and Wyer 1998). This practice of explaining stuff is important to how Max runs CLEAR, and consequently to how students are socialized as scholars within the lab. As Max explains:

Some students come in and say, “Whenever I try and do something, it doesn't work.” That's because you're trying to do something that was never designed for you. And what you're doing is amazing. And let's talk about that. Part of that is **the black box**, like first generations, etcetera coming into this academic world and being like, ‘this makes no sense. I feel like I'm under threat at all times. Because nothing makes sense.’ So, it's an alien world. So, **we try and narrate what's actually happening** so that some of that gap closes. That's the goal, anyhow. (Liboiron 2023)

By opening up the black box and narrating what's happening, Max exposes parts of the hidden curriculum, helping level the playing field for those who don't fit the narrow boxes of dominant identities (Subramaniam 2014; Subramaniam and Wyer 1998).

In addition to these explanations, modelling practices for other lab members is central to both enculturation and socialization within the lab. So, I'll be trying my best to model some of these practices within this section through these narrated moments. While I'm certainly no Max, I can let you in on some of the *why's*. Why does CLEAR do things the way they do? Why these practices, in these ways? Now, on to our story...

Beginnings

In the early months of COVID-19, when zoom meetings were still a novelty, I sat alone at my dining table, the glass surface a mosaic of brightly colored sticky notes, a cornflower blue and pale-yellow kitchen at my back. I opened my laptop, double and triple checked that my charger was indeed charging. As I waited, you could almost feel the nerves coming off me in hot waves, hear them, see them as they intermingled with excited curiosity. Then, it was finally time to join my first CLEAR lab meeting. I rechecked my notes one more time, glanced at my image in my laptop camera, and pet a fluffy cat sneaking through my ankles⁹. With an anxious click, I joined the meeting and was greeted by a screen full of faces looking back at me from tiny rectangles checkering a background of black.

⁹ Thank you Zibbi for your companionship and Zoom cameos.

The format of CLEAR lab meetings enacts CLEAR values. Since I joined CLEAR in May 2020, nearly all lab meetings have been on Zoom. Though in 2023, a handful of the meetings were hybrid. The first of these was a feast that the lab graciously hosted when a visiting scholar and I independently came to CLEAR in-person for the first time. While in-person meetings may provide some benefits that Zoom meetings cannot¹⁰, meeting fully online provides an infrastructure through which all lab members can equally participate¹¹, whether they're in St. John's or working remotely (as many lab members do). In many ways, online meetings are a compromise, but like other lab decisions, it's a compromise guided by lab values like collectivity. In a world of imperfect options, it's the best you can do.

Facilitation as foundation

*On the agenda for the meeting was to collectively choose the topic for a lab-wide summer project. Max **facilitated** the meeting, beginning with a round of introductions for the new members present, including myself¹². After the introductions, we moved on to project proposals. Given COVID-19 restrictions, the project needed to be something we could undertake remotely. Before the meeting, Max circulated summaries of potential topics and lab members had a chance to propose additional ideas. After going over the proposed projects, everyone had three votes to contribute¹³. In CLEAR, you can place all your votes on*

¹⁰ I'm not sure if you ever experience this, but I'm willing to admit it...I feel so awkward on zoom! Something about being confined to a little box doesn't bode well for me—I normally speak with my whole body, gesticulating dramatically throughout a conversation (insert joke about being Cuban here). On more than one occasion, I've even accidentally chucked a dry erase marker across a room during a particularly enthusiastic gesticulation. So, at the start of the pandemic, especially, I found it difficult to navigate zoom interactions. It even took many a zoom wine night with my best friend to not find ourselves ending up in an awkward kerfuffle over misread social cues as interactions are rendered flat by a computer screen. This may sound like just random ramblings, but it also speaks to the challenges in creating more personable spaces on Zoom. It's not impossible, it just makes those processes and 'containers' all the more important.

¹¹ The lab works to ensure this as best as possible. Some lab members are in areas that have less stable internet connections. There's not much CLEAR can do about that. However, when it comes to other technology, the lab does help out where it can. For example, when my laptop camera broke, Max offered to buy me a webcam through the lab so I could still participate.

¹² As both an illustration and a greeting, let me introduce myself as I would in lab: Hello! I'm Christina Crespo. I'm the current point person for the citational politics project and a PhD candidate at the University of Georgia in Athens, the ancestral homelands of the Eastern Cherokee, the Muscogee Creek, and the Yuchi. I'm a first generation Cuban-American of Cuban and Anglo settler decent from South Florida, the ancestral homelands of the Taíno, Seminole, and Tequesta.

¹³ This facilitation method is often called a 'dotmocracy' and is typically done with dot stickers, where everyone gets a set number of votes (i.e. stickers) to mark their choice next to options on a list. On Zoom, this can be done with the whiteboard function and stamps or checkmarks, etc.

one thing or split them up. The citational politics project¹⁴, framed as an experiment in how to do citational politics differently, ranked high on the list. However, to move forward, everyone still needed to consent to the project. So, Max called for “wiggle fingers” (how we indicate our consensus in CLEAR). Everyone at the meeting held up their hands, fingers wiggling, and citational politics won! But now back to opening that black box...

As the Lab Book explains, facilitation differs from traditional approaches to teaching or academic discourse. Rather than individualistic approaches, one-way knowledge transfer, or debates over who’s right and who’s wrong, facilitation is a very intentional “discussion method that aims to **bring collective knowledge together**” (CLEAR 2021a, 51). That means the goal is collaboration, not just efficiency or expediency. In truth facilitation can be a more time-consuming approach to running a meeting. However, it can be far more productive for achieving collaboration.

Often classrooms and meetings are structured in a way where there is a primary knower through which all knowledge flows *through*. This is not what facilitation does (and just because someone says a meeting is facilitated, doesn’t mean it’s done effectively). In contrast, successful facilitation is about **collaboration** and making sure everyone has opportunities to contribute to that collaboration. Effective facilitation techniques, thus, help a group work together effectively, ensuring “that the group is empowered **as a whole**” (AORTA 2017, 1). At its heart, facilitation is a tool for collaborating and enacting change.

In CLEAR, facilitation is about equity (rather than equality). It’s not just about making sure everyone has equal opportunities to contribute (i.e. equality). It’s also about recognizing and

¹⁴ Original description of the citational politics project that Max circulated before lab: “An important part of feminist and anticolonial science is showing how scientific knowledge isn’t only produced by old white guys. But that seems to be the case whenever you look at the average bibliography. This project would look at different ways to do what is called ‘citational politics,’ or ways to do activism through citation practices and bibliographies. We would not only use these methods in papers we’re already writing, but write a paper about that process—since there isn’t a clear or obvious method for *how* to do citational politics. It’s more than just citing more women/non-binary and Indigenous people.” (email to CLEAR members from Max Liboiron, 4/29/2020).

addressing how power dynamics can play out in a space (i.e. equity). As the CLEAR Lab Book explains, facilitation “addresses how different people in the room are more or less likely to speak, be heard, or be interrupted, and **works to address those disparities**” (CLEAR 2021a, 51). As a result, facilitation techniques can help make meetings “better, more inclusive, and fully democratic” (AORTA 2017, 1). While facilitation may be about the group, it’s not to the detriment of individuals’ experiences.

One of the most important parts to a successful meeting is the facilitator (or sometimes facilitators). A good facilitator helps ensure that “the group follows its own agreed-upon process and meeting agreements” (AORTA 2017, 1; Heath and Wensil 2019). They are responsible for holding members accountable, though everyone in the room can contribute towards that goal. While in some forms of facilitation (Gower et al. 2020), the facilitator doesn’t interject their own perspectives into the conversation, during most lab meetings Max facilitates, they also actively contribute. This aligns with the lab’s general structure—at the end of the day Max is accountable for the lab and so they need to contribute to the meetings. More than that though, it’s often through these contributions, and those of other lab members, that so much of the modeling and subsequent learning occurs in CLEAR.

As a result, lab meetings provide an opportunity for lab members to learn and model new skills. Sam Morton explains,

And so I often feel like a puppy, in CLEAR meetings, kind of seeing how other members do things, and then, you know, practicing it, and it's a bit clumsy at first, because my legs are too big for my body. **But then you kind of grow into it.** And there's so much about almost like muscle memory or brain memory, building up those skills. **There's a lot that's demystified in a way.** A lot of what we do are skills, like writing is a skill. Sure, some people might have better talent starting out, but **these are skills we can all work on**, and giving presentations, there’s a huge fucking set of skills that go into that, or facilitating, and then **we get to practice these skills in a supportive space.** (2023)

Sam's use of "demystified" calls back to Max's earlier point about opening up the black box. Sam's quote also highlights the key role that lab meetings play in learning new skills. She emphasizes the importance of practicing new skills and how lab meetings provide an opportunity to do so.

I've often seen lab members apply the same facilitation techniques Max uses when they facilitate meetings themselves. I know I have also brought these tools to my own classroom, and for the better. Though it isn't always easy for CLEAR practices to travel. Something that Paul McCarney¹⁵ (2023) reflected on during their interview with me—that when they brought CLEAR practices into other spaces, that they didn't always work without the collective, without the infrastructure. Despite the mixed successes, Paul and others still bring the **values** that they enact through CLEAR practices into other spaces.

While facilitation isn't something you see too terribly often in academic spaces, it is a cornerstone for some social movements and is central to how Max runs the lab. As Sam alluded to, facilitation "is a skill, and it has to be trained" (CLEAR 2021a, 51). As a result, facilitation training is embedded within CLEAR's practices and protocols. It is explicitly addressed in the onboarding materials for new lab members, such as in the AORTA handout. Based on observations and experience, the primary way labbers learn facilitation skills is through weekly lab meetings. There, Max models facilitation approaches that they've learned through their training and experiences in social justice movements (CLEAR 2021a; Liboiron 2023). Lab members learn from Max and from participating in the process themselves on a regular basis.

¹⁵ So my name is Paul McCarney, my pronouns are he/him, I'm a settler researcher, working on kind of a wide variety of conservation, related work with indigenous communities across the north. Right now I am based at Yukon University, which is in Whitehorse, which is traditional and self-governing territories of two First Nations, the Kwanlin Dün First Nation and the Ta'an Kwäch'än Council. And that, and I have lived kind of a couple of different places in the north. But that's where I'm now but in my work kind of takes place across a lot of territories in the north.

So, what is it that makes CLEAR meetings so effective? In a word, facilitation. Facilitation is a tool for collaboration that works to ensure that all members are able to contribute. Effective facilitation identifies inequities and addresses them. Moreover, a well-facilitated meeting offers the perfect opportunity for others to learn the skills necessary to facilitate. After all, facilitation isn't something that just happens naturally, it is a **method** that needs to be learned and put into action. Now, to recap before jumping back into our story, the lab just finished coming to a consensus on a project and citational politics won!

Uneven in agreement

With the consensus-building complete and citational politics the winner, we went around the Zoom room so each lab member could share their thoughts and reactions to the topic choice. Some embraced it with enthusiasm while others were open to the idea, but with a more...lackluster reception, though that changed once the project was underway. So, agreement may have been uneven, but everyone was in agreement nonetheless.

This uneven agreement is part of CLEAR's consensus-based decision-making process. It is reflected in some lab members later blog posts about the citational politics project. Their feelings towards citational politics did indeed change once the project was underway, however, this was Kaitlyn Hawkins'¹⁶, the lab manager at the time, initial reaction:

When citational politics was first brought up as a potential topic for the CLEAR lab, I **can't say I knew much—or cared much**—about the topic. I didn't know much about 'citational politics,' other than the fact that being cited was a good thing that would help secure careers in academia. Much to **my disappointment** at the time, citational politics became the lab's chosen project. (2021)

Molly Rivers¹⁷ expressed a similar sentiment:

"...when I first heard that citational politics was to be the topic of discussion at one of our lab meetings in CLEAR, my ignorance **prevented me from feeling particularly engaged**" (2021).

¹⁶ From her blog post: "Kaitlyn Hawkins (she/her) is a settler from Newfoundland and Labrador, the ancestral lands of the Beothuk. With a B.Sc. from Memorial University, she works with CLEAR as both a researcher and as the lab's manager."

¹⁷ From her blog post: "Molly Rivers (she/her) is a settler in St. John's, Newfoundland, originally from Bristol, England. She is currently doing her Master's degree in marine biology at Memorial University of Newfoundland researching behavioural ecology of invasive species."

In CLEAR, everyone needs to consent on a decision in order to move forward. Any one person can not consent and a proposal will be rejected (I've seen projects vetoed on more than one occasion). However, consensus-building is *for the collective*. Meaning that individuals consent based on what they think is best for the group, not based on individual interests. This explains why, despite some lackluster sentiments towards the topic, like those shared above, everyone still consented on citational politics.

Making space for uneven agreement helps CLEAR members learn how to put the collective first. It's not always easy, but seeing the process in action time and again helps. Since labbers make decisions for the well-being of the lab and not their individual feelings, it's okay if not everyone is at the meeting. Other lab members have their back. It also means that sometimes lab decisions may not be your favorite thing. That's also okay.

Decisions by consensus

At this point, you might be thinking, "What does a project on citational politics actually look like?!" I left my first CLEAR meeting asking that very question. However, that answer came later...after four more weeks, four more collective conversations, and a stack of readings. Since the project was process-driven, developed through consensus-based decision-making, the process took time.

Consensus-based decision-making is a concrete, step-by-step *group* decision-making process (Hartnett 2011). As a collaborative and participatory process, consensus-based decision-making aims to bring everyone into the process horizontally. For CLEAR, this means that "tenured faculty do not have more say than undergraduate students, though we acknowledge that faculty still have greater power of persuasion and that unconscious biases are always at work" (CLEAR 2021a, 15). CLEAR's decision-making process is modelled after Occupy Wall Street. The Lab book also cites Hartnett (2011), so I'll be drawing both from the Lab Book and Hartnett 2011 to explain the process. Engaging in consensus-based decision-making reinforces CLEAR's collective culture and enacts the lab's core values of accountability, collectivity, and humility.

Consensus-based decision-making requires careful and intentional stepwise facilitation (Hartnett 2011; CLEAR 2021a, 52). It takes time and a hell of a lot more work than other approaches, but it can be worth it. It reinforces the collective, by actively valuing every member's contributions all the while putting the collective at the forefront when it comes to decision-making. Typically, Max facilitates the process during lab meetings, and the citational politics project was no exception. In the next few sections, I'll expand on how this process unfolded.

We started by reading and thinking together. So, there was homework before the next meeting, a list of readings to complete, from blog posts and interviews to journal articles. The readings fell into two basic camps: (1) critique and (2) action. The critiques¹⁸ formed the starting point for the project, helping tease apart and describe the problem at hand. The second group of readings served as a launching pad for inspiring possible actions¹⁹, helping shape the project proposal.

The first step of consensus-based decision-making is to frame a topic, a step typically done by the facilitator (Hartnett 2011). This gives the facilitator an opportunity to plan how to structure the discussion so that the topic is clear (Hartnett 2011). The resources that Max selected to have everyone read for homework accomplished much of this labor. The materials provided an explanation of the topic and drew some boundaries around it, getting everyone onto the same page. This helped us to jump into the second step of consensus-based decision-making when we next met as a group.

The second step is an open discussion about the topic to generate a wide range of possibilities for the group to consider (Hartnett 2011, 40) and identify different ways of seeing the topic or problem (CLEAR 2021a, 52). This is a vital part of the process and if you rush through it,

¹⁸ The critiques included Sara Ahmed's blog post, "Making Feminist Points"; an interview with Kyle Powys Whyte and Sarah Hunt, "The Politics of Citation: Is the Peer Review Process Biased Against Indigenous Academics"; and an article by Carrie Mott and Daniel Cockayne "Citation Matters: Mobilizing the Politics of Citation Toward a Practice of 'Conscientious Engagement.'"

¹⁹ These included "The Citation Practices Challenge," organized by Eve Tuck, K. Wayne Yang, and Rubén Gaztambide-Fernández; an example bibliography from the CLEAR publication, "Doing Ethics with Cod," and later the book chapter "Exchanging" by Max.

you might miss out on some important possibilities (Hartnett 2011). However, whatever facilitation approach is taken, CLEAR has some guidelines for “safer collective conversations” (CLEAR 2021a, 50–51).

Collective agreements

The guidelines work in the same way as community agreements or agreed-upon expectations for how you’ll interact with one another—a kind of container for your meeting, often used in transformative dialogues (I told you I’d come back to containers! I bet you thought that I forgot) (Gower et al. 2020). As AORTA (2017, 2) explains, these ‘containers’ are “tools that participants and facilitators can come back to throughout the meeting to help keep the group focused, on track, and on the same page. They also offer direction for moments when things get sticky or tense” (AORTA 2017, 2). So, in order for facilitation to be effective, there first needs to be some stuff set in place. After all, a skilled facilitator may be necessary for facilitation to be effective, but it isn’t sufficient. A group also needs things like community agreements. Beyond helping your meetings run more smoothly, community agreements can actually help *build* community and even foster collectivity.

Every lab member needs to not only be familiar with the guidelines for safer collective conversations, but also agree to them. In CLEAR, reading through the guidelines is part of the onboarding process. However, rather than prescribing set-in-stone rules, community agreements are about establishing expectations that the group decides on collectively (AORTA 2017, 2). Some members coming in won’t have been part of that collective process; that’s the nature of an academic lab—high turnover. However, these guidelines are revisited in other ways. For example, the lab periodically “renews their vows” by going through the lab book line by line. So, there are multiple opportunities to contribute to the collective practices and they are woven in throughout the Lab Book, not just under the guidelines themselves.

One of the guidelines that CLEAR uses that is particularly important for the second step in the community-based decision-making process is “don’t yuck my yums” which is explained in the lab book as: “If what someone offers to the group (their joy, ideas, experiences, gender expressions) isn’t hurting anyone, don’t disparage it. Instead, affirm and add (yes, and!). One person’s yummy bit isn’t superior to anyone else’s.” (CLEAR 2021a, 50–51). To not yuck someone’s yums in practice, the Lab Book reminds members that at this step in the process “[y]ou are not yet judging ideas, so ask questions of others rather than make statements whenever possible” (CLEAR 2021a, 52). This helps guide the conversation and collective discussions in a direction that puts the collective first all the while enacting humility.

As you might have noticed, CLEAR uses a bit of humor and playfulness in writing their guidelines (and in lab meetings more generally). This can go a long way towards humility. In fact, humor is directly cited under how the lab enacts humility in the lab book. Under the sub-heading “Creating and maintaining collectivity/we are not the center,” you’ll find: “We try not to take ourselves too seriously, teasing ourselves and others when it makes sense. Jokes!” (CLEAR 2025) Humor can be a cornerstone to activism (Chattoo and Feldman 2020). Max reiterated this during a recent lab meeting. When Erdanya Anderson²⁰ asked how to bring the sense of **joy** that comes out the lab to their writing, Max replied “jokes...and swears.”

Collective agreements such as CLEAR’s guidelines for safer conversations help set the groundwork for collective discussions. They structure conversations and form a framework that each meeting can always come back to. In CLEAR, these guidelines are collectively determined

²⁰ Erdanya Anderson (she/her) is mixed Kanyen’kehá:ka (Mohawk) and settler descent with family roots in Tyendinaga Mohawk Territory. Originally from Barrie, ON, Erdanya now resides in Toronto on the traditional lands of the Haudenosaunee, the Mississaugas of the Credit, the Anishnabeg, the Chippewa, and the Wendat people. She holds an MA in Philosophy from the University of Toronto where she studied research ethics, specifically examining the intersection of the Tri-Council Policy Statement 2022 (TCPS-2) and Indigenous research ethics guidelines.

and part of the training process. The guidelines can also be a space of humor and humility. Now, let's return to citational politics.

Citations, killjoys, and other ruptures

With our homework complete, we were ready to discuss citational politics. We started with another round of introductions²¹. The conversation then moved to what citations are and why they matter. Max still facilitated, but the conversation was anchored by all three faculty members in the lab at the time. Max explained that 'citation' can either mean the act of citing or the number of times others reference your work. Using a helpful metaphor, Charlie Mather²² explained that citing is central to how science builds knowledge—when adding thread to a ball of wool, citations show what's inside that ball. However, there's more to citation than building knowledge. Citation is also a site where politics and power play out.

Sara Ahmed asserts, citation is a "rather successful reproductive technology, a way of reproducing the world around certain bodies" (2013). In academia, citation "is taken as an assumed proxy for measuring impact, relevance, and importance..." (Mott and Cockayne 2017, 2). As things like author order²³ and h-indices translate into expertise and social capital, citations become a key academic currency that in turn impacts academic's material livelihoods during hiring, promotion, and tenure processes. Citations can also translate into actual capital, as

²¹ Identities and relations are neither fixed nor static and, as the Lab Book explains, repeating introductions regularly makes space for identities that are always open to changing (CLEAR 2021a). Introductions are also not always as straight forward as they sound. For example, let's take a moment to look at my introduction again. Over time and depending on the context, it changes. Some of this is a result of uncertainties on my own part, some of it is about what relations come to the fore in a specific moment, and some of it is the result of the inherent ambiguities and contradictions attached to 'identities.' For example, should I be explicit about being a white-passing Latina? Should I identify as a settler of color, despite being white passing? Is the categorization of 'settler' as meaningful in the Latin American/Caribbean context as it is in the Canadian? How do the different histories of Spanish colonization and Anglo colonization come into play? Does it matter? And the list of questions continues...These tensions and uncertainties related to something as seemingly simple as an introduction are not just an issue of individual angst but play a major role in why navigating citational politics can become oh so very tangly—a point that will become clearer as we continue on our journey in the following chapter.

²² "Yeah. So, as I would in a CLEAR meeting, okay. I'm Charlie Mather. I go by he/him. Those are my personal pronouns. I'm a settler on Beothuk land here in Newfoundland and Labrador, a guest. I work in the Geography Department at Memorial University. I'm a professor there."

²³ CLEAR addresses this issue in their article, "Equity in author order: A feminist laboratory's approach" (Liboiron et al. 2017). For more details on CLEAR's author order protocol, you can watch a mini-documentary on the process available here: <https://civiclaboratory.nl/2016/05/23/equity-in-author-order/>.

research funding can be tied to how often you're cited. Given all of this, it's safe to say that who's cited (and who isn't) matters.

While the first part of the lab conversation focused mainly on existing critiques of citational practices, the critique was a starting point, not endgame (Liboiron 2022a). This is central to CLEAR's work. While the project, whatever its form, would have a 'killjoy'²⁴ moment, it would center on experimenting to bring about something new (i.e. protocols) (Liboiron 2020a).

Before deciding on what that experiment would look like, Max continued to facilitate the lab through the consensus-based decision-making process, creating space for open discussion and for lab members to identify any underlying concerns. To do so, Max used round robins, giving everyone the space to share their thoughts, questions, and experiences with citing and citation, if they so desired (round robins play an important role, so I'll come back to them and with greater depth soon). The discussion centered on what we each took from the readings and what we wanted to work on for the citational politics project. Labbers voiced both critiques and concerns as well as hopes for what the project might do.

This follows with the third step of consensus-based decision-making, identifying underlying needs and concerns (Hartnett 2011, 41). After you've reached this point in the decision-making process, it's finally time to develop proposals for what the project will be. The different ideas are built on and put forward to the group as possible options. This step can be done collaboratively, but that can become unwieldy in large groups, including CLEAR. Now, before moving on, let's circle back to round robins.

Round robins: Equity in action

Round robins are one of the most important facilitation techniques used in CLEAR. So much so that I contemplated writing this entire chapter solely about them. The Lab Book explains round robins simply: "We go around to everyone at the table or Zoom, in order, and they have a chance to speak or weigh in on the topic based on a prompt or question by the facilitator" (CLEAR

²⁴ The CLEAR Lab Book explains the term for lab members as follows: "Sarah Ahmed coined the term 'feminist killjoy' to name the act of stopping everyone's easy going, happy status quo to point out issues of inequity, bad relations, and oppression. No one loves to have that stuff come up, especially when it is about something they are doing or are part of. Takes the joy right out of the room. See Ahmed's <https://feministkilljoys.com/> or Living a Feminist Life (2017), which includes a Killjoy Manifesto" (CLEAR 2021a, 18–19). Simply put, Sara Ahmed's killjoy phenomena is that in naming the problem you become the problem.

2021a, 51). Importantly, anyone can ‘pass’ or ‘pass for now,’ so the opportunity is there but it isn’t forced participation²⁵. Simple as they may be, round robins can do a lot of work towards creating a collective culture and a space that’s oriented towards justice.

Doing a round robin on Zoom poses specific challenges, given the logistical issue of how to go around a Zoom ‘room’ when not having a person sitting physically next to you makes it hard to know who’s up next to speak. When I first joined CLEAR, Max facilitated round robins by giving two names at once, who’s up next and who’s coming after them. That way individuals weren’t caught off guard when asked to speak. Over time they transitioned to a different approach, where each person passes it on to the next. At the start of someone’s turn, they say who they’ll be passing it to so the next person can prepare themselves.

Who do you pass to? The answer to that question isn’t random, it’s context dependent. It’s also how you can enact equity through a round robin. Max has emphasized this in lab on multiple occasions, reinforcing the idea. Who you pass to should keep equity in mind. It should also consider the topic at hand. This is essentially a ‘progressive stack’ approach to a round robin.

A progressive stack approach to round robins brings in positionality and equity. It’s a way to put marginalized folks at the front and a way to step up or step back to let who might most need to speak go first, depending on the specific context of the discussion. For example, if we were discussing the experiences of international students, an international student might be prioritized. If we were doing something that Max wanted to be modeled more to help new members before they jump in, they might select a PhD student or a post-doc to start the conversation off. By doing a progressive stack, you can put intention into the order, creating

²⁵ This matters. As education scholar Stephanie Jones asserts, some forms of round robins, such as round-robin reading can do far more harm than good (2015). For more on this, see Jones 2015.

opportunities for more equitable relations than simply going around in order would do. It also enacts CLEAR values.

What else do round robins do? Thinking back to my first few lab meetings, I remember how much it struck me that the lab *actually* valued my opinion as a brand-new member. In fact, new members play an important role in the lab: they act as a fresh set of eyes that might perceive things differently than those who've been in the lab longer. I'll admit it was terrifying to be asked to share my opinion right off the bat, but being treated as a valued member of the community from day one also bolstered my confidence not just in my knowledge but also in it being okay to be wrong, an important counterbalance to experiences in other academic spaces. But don't trust my experience alone. A similar sentiment was expressed in multiple interviews. For example, lab manager Jess Melvin²⁶ shared the following:

And, you know, we were still at the time doing the round robin thing in a slightly different way. But it was still like, everybody gets the space to speak, and it will come to your turn. And when I was first, like when I was a new member, I was so nervous when we were in these conversations. I was like I have no idea what this means. **But after a few meetings, I saw that graciousness being shared with other people, and I was like, No you can, you can say it. And if there's something wrong with it, they're going to be really sweet about telling you that there's something wrong with it.** And I actually didn't even say wrong things very often. So. Yeah, just so kind. So kind...yeah, normally, you get one of those round robin things in a topic. Like if you were just in a random class, you do that and topic you don't know and be like...But it was okay. It was fine. It was great, actually. **It gets to the point where you kind of look forward to just throwing something almost, not random, but you know if you're not an expert, it feels random. And then hearing someone say, oh, yeah, that goes really well with this.** Actually, you probably didn't think of it this way. (2023)

As Jess explains, round robins are a space to enact and experience graciousness.

Taking a step back, I want to note that in order for community agreements to work, for all of this to work, the community *actually* needs to agree to the guidelines *and* there needs to be

²⁶ “Hi, I'm Jess Melvin. My pronouns are she/her. I am a settler currently living and working from the ancestral homelands of the Beothuk here on the island of Newfoundland. Well, specifically the Avalon peninsula, and I am CLEAR's lab manager, so I handle everything wet lab.”

mechanisms for holding everyone accountable. In some ways, this is easier to do in CLEAR, a self-selected community with a hiring process based on shared values rather than skills. It's a lot of work to maintain those boundaries of shared values, but those boundaries also do a lot of work²⁷. In a classroom or a faculty meeting, etc., this is often not the case. However, facilitated round robins travel well and can be an easy technique to transform a space. Some of my feminist methodologies students even mentioned in their interviews that they started enacting round robins in their other classes.

Beyond creating opportunities to share and listen to multiple perspectives, round robins bolster confidence, teach humility, and build collectivity. They can even enact justice²⁸ when combined with a progressive stack. Round robins are also a technique that travels well, so maybe give one a try during your next meeting and see what happens (don't forget an option to skip!). Now back to the citational politics project!

The proposal

Based on the collective conversations, Max put together a project that they proposed to the lab (the fifth step in consensus-based decision-making—choosing a direction) (CLEAR 2021a; Hartnett 2011). With another round of consensus checking, the plan for moving forward was unanimously agreed on. So, what was the proposed project? True to the spirit of CLEAR, it was indeed an experiment in citational politics. Here was our study design: We collectively chose a published CLEAR paper, selected three paragraphs from it (one from the introduction,

²⁷ There was a point early on in CLEAR's history where the lab had to shut down for a while to recalibrate. Max shared the story during our interview: "I feel like I turned around one day, well it was during an author order meeting, and it went so badly. And I was like, how, how is it possible? Author order is like what we do best, and they're the time of the most celebration and amazingness. And it went so badly. It was violent by consensus. And I had constructed the facilitation in such a way that I had no agency during the process which is usually fine but this time it was not. Charlie was there. And afterwards, Charlie and I were like, holy shit. How did that happen? How was that possible? Given the culture of the lab, of CLEAR? How was the violence that just happened literally possible? And part of the answer was that there were some folks who were just complicit in letting bad actors and values like self-maximization and competitiveness and scarcity take over and even investing in them. And then we had a couple folks with really bad values that even though they talked the talk, their walk was going in the opposite direction. And, and they had become the core of the lab. The people who were there all the time doing all the work, meeting everyone, that sort of stuff. And I couldn't, I tried for about four months to uproot it, like bring it around, and I couldn't do it. So, I just I chopped off the head of the beast and I closed." (Liboiron 2023)

²⁸ In case you can't tell, I really love a round robin. I've seen what they can do and heard other folks gushing about them in interview after interview. Round robins work.

one from methods, and one from the discussion), and applied different ‘treatments’²⁹ to see what would happen to the text. To give you an idea of the process, we would take one of the paragraphs and try to re-write it with a particular treatment in mind. For example, what if you cited with gratitude and humility? How would the text change? What would stay the same? What could you no longer say? What might you need to add?

Each treatment included three lab members who tried carrying out the methods individually, recorded what happened, and then shared their findings within small working groups. We then regrouped as a lab to discuss the issues, trends, and insights encountered. The plan was to “write a methodological paper, using the revised paragraphs and our experiences of writing them as our ‘primary’ data sources” (Liboiron and CLEAR 2020). Simple, right?!

Not simple. Not simple in the slightest, but I’ll save this for the next chapter.

The consensus-based decision-making process may be time intensive, but it serves multiple important purposes. It enacts the CLEAR values of accountability and humility. Consensus-based decision-making also helps teach collectivity while strengthening the collective, making it a particularly helpful facilitation tool.

CLEAR meetings are structured, but that structure provides freedom. Lab members know the general order of things and what’s expected of them. Through facilitation techniques, such as consensus-based decision-making, community agreements, and round robins, CLEAR members learn the skills and tools for practicing feminist and anticolonial science, as well as the norms and values that go with that. The meeting structure isn’t something coming out of journal articles and university spaces. It’s the stuff of social movements.

Methods of movements

So where do these facilitation techniques come from? In the 2020 Lab Book, it simply says "Here are some resources to running an anti-oppressive, horizontal, equity-based meeting:" (CLEAR 2020, 42). However, in the public version of the 2021 Lab Book, this is expanded to: "Max

²⁹ The initial treatments were broken down into four larger groups: the control; difference groups (gender diversity targets, racialized targets, and global south targets); knowledge groups (other forms of knowledge, local knowledge, and accessible knowledge); and the values group (gratitude and humility and responsible/accountable).

runs CLEAR meetings based on training and experiences in social justice movements. This includes having guidelines that make the space safer, facilitation rather than leadership of discussions, and consensus-based decision making" (CLEAR 2021, 49). The new entry both establishes Max's authority/expertise on the topic and points to the fact that these skills aren't coming out of academia but rather are from social movements. It also points to the specific tools that are outlined, rather than the outcome (i.e. running an anti-oppressive, horizontal, equity-based meetings).

When I asked Max to expand on how their background in activism shaped CLEAR, this is what they told me:

It's shaped, not just CLEAR, but the way I teach and the way I administer hugely, so every time I am responsible to a collective or group. That's what social movements teach you, or at least taught me: **'You're part of a collective now, you're not primarily an individual, your individual desires and choices don't matter, except how they relate to the collective.'** What matters is the collective, right. **And there are therefore techniques and skills and principles you need to learn because most of us aren't taught how to first and foremost be part of a collective instead of an individual nugget.** That's what social movements can do. And one of the things they do. And so it was, I mean, a little bit before this, but it really cohered during Occupy, both Occupy Wall Street and then a couple of years later, Occupy Sandy when Hurricane Katrina hit. I was in New York City doing my PhD during all of that, and I received these lessons, both like when you're in like Zuccotti Park, and they're doing the communal *Declaration of the Occupation of Wall Street*, which is a multi-page document, and you're consenting with over 1000 people, on every sentence, you learn a lot about technique. You learned a lot about consent. **About facilitation, rather than leadership. You learn a lot about the gap between words and actions when it comes to activism and protocol.** I was formally trained by ACT UP, by AORTA Collective, by a bunch of folks who are on the ground, they're teaching a bunch of us how some of this actually works. Learning **concrete skills for being part of and making collectives.** And then you just got to see it work (and not, sometimes). And there were like, go-to facilitators in Occupy that you would see over and over again, in certain areas, because they were so good, and you could watch them, and I shadowed some of them to learn better, and then some of them were in my working groups, became my friends. **So, I had a very deep, immersive learning on the techniques and tools of consensus, collectivity, the unevenness of consent, working in fraught situations.** (Liboiron 2023)

Max's response shows that CLEAR meetings are informed by the techniques and training coming out of social movements. In how they do science, CLEAR is working to enact social change. As a

result, I argue that through techniques of social movements, students are not only enculturated into CLEAR but also socialized as different kinds of scholars—not only do the practices travel with them into other spaces but so do the values and norms informing them. In short, meetings matter.

Using facilitation techniques informed by activism, CLEAR changes science by *doing* science. Even something as mundane as meetings matter. These methods open up new possibilities for what a meeting can be and what they can *do*. With that, meetings also shape the type of scholars and scientists that lab members become.

Conclusion

Meeting spaces are an important site not only for socialization and enculturation, but also for creating and maintaining a collective. They can provide the infrastructure for collectivity. Or they can be miserable and pointless exercises in futility. To make meetings matter, it's important to focus on process. In this chapter, I told the story of how a CLEAR project, citational politics, came to be. By tracing its formation through CLEAR lab meetings, I show the work that process can do to uphold shared values and to socialize students into a different version of academia, one that prioritizes accountability, humility, and collectivity. In CLEAR, these processes come out of social movements, relying on techniques such as facilitation, consensus-based decision-making, and round robins.

Facilitation is a tool for collaborative thinking and collective work. Through different facilitation techniques you can enact (and teach different values). Using a consensus-based decision-making processes can bolster collectivity and collective agreements can be spaces that enact humility. Round robins, particularly with a progressive stack approach, can account for and address inequities and promote justice. Round robins can also bolster individual confidence while strengthening the collective. Taken together, these tools enact and teach CLEAR values to lab members which they can bring with them as they move into spaces outside of CLEAR.

Now what's next? After reading so much about the intricacies of CLEAR meetings, I hope that you might have found some inspiration of your own. If you haven't before, why not give some of these techniques a go? Why not try out a round robin the next time you facilitate a meeting or even teach a class? What might you be able to do differently? What might become possible if you do?

INTERLUDE THREE. MEETING ANZALDÚA

Theory, then, is a set of knowledges. Some of these knowledges have been kept from us—entry into some professions and academia denied to us. Because we are not allowed to enter discourse, because we are often disqualified and excluded from it, because what passes for theory these days is forbidden territory for us, it is *vital* that we occupy theorizing space, that we not allow white men and women solely to occupy it. By bringing in our own approaches and methodologies, we transform that theorizing space. (Anzaldúa 1990, xxv)

Gloria Anzaldúa passed away in 2004, but her work remains foundational to feminist theory. Throughout her books, the text seamlessly undulates between Castilian Spanish, English, North Mexican dialect, Tex-Mex, and Nahuatl. Anzaldúa describes this code switching as “the language of the Borderlands,” where “at the juncture of cultures, languages cross-pollinate and are revitalized; they die and are born” (Anzaldúa 1987). Beyond her use of language, her texts exist within a borderland of genres. She draws from personal narrative and reflection, poetry, Aztec myth, songs, historic texts, films, books as well as numerous other styles and sources of knowledge. By breaking the binds of the traditional academic chains that supposedly ensure scholarly rigor and validity, her texts become powerful acts of resistance to the ivory tower status quo—a testament to the potential of border thinking.

In order to understand Anzaldúa’s work, it helps to understand her approach to “theory” and theorizing. As you read in the epigraph above, Anzaldúa advocates for those who have been marginalized by the production of academic knowledge to create new theories that account for their existence. Identifying the emancipatory potential of theorizing, she asserts that “if we have been gagged and disempowered by theories, we can also be loosened and empowered by theories” (Anzaldúa 1990, xxvi).

Yet, similar to Latin American decolonial scholars, Anzaldúa asserts that these new paradigms “must come from outside as well as within the system” (2015, 119). These teorías mestizas consequently “create new categories for those left out or pushed out of the existing ones” (Anzaldúa 1990, xxvi). Anzaldúa’s approach to theorizing refuses to accept detached knowledge, severed from everyday lives, and instead asks us to begin theorizing from lived experiences, to create theory in the flesh (Moraga and Anzaldúa 2015).

Anzaldúa’s work helps us dive into this mess (and la masa), make sense of spaces of contradiction, and understand knowledge in ways that include the body, mind, and spirit. Her work challenges rigid borders, working to dismantle the divisions at the center of dichotomous orderings of the world. For example, she proposes the concept of “nos/otras” in which la rajadura, the slash, the crack in between, creates a third point of view outside of binary constructions. Possibilities for sciences otherwise might exist within such a liminal space.

Methodologically, Anzaldúa’s approach is both an exploration of self and an effort towards making sense of the world, “a way of inventing and making knowledge, meaning, and identity through self-inscriptions” (2015, 6). Her methodology directly connects personal experience with social realities, “fusing” personal narrative with theoretical discourse (Anzaldúa 2015, 6). She describes this “hybrid genre” as “a new discursive mode” which she calls “autohistoria” and “autohistoria-teoría”. In describing their relation to each other, Anzaldúa explains “conectando experiencias personales con realidades sociales results in autohistoria, and theorizing about this activity results in autohistoria-teoría” (2015, 6).

The first time I read Gloria Anzaldúa’s work, it felt like a blow to my stomach, but in the very best kind of way. It illustrated what I had been missing out on by not seeing myself reflected in course syllabi, in the ideas being put forward by the scholars I was tasked with reading—tasked with thinking with. Don’t get me wrong, I’ve enjoyed, been inspired by, and drawn to plenty of

other texts in the past—but somehow this felt different. Not only did the lens that Anzaldúa was putting forward address questions I had long grappled with, it did so in a way that reminded me of ‘home.’ She weaves in and out, between and through languages and dialects as the words demand it, and she does so *without* translating, *without* italicizing anything other than English, calling attention to its ‘Otherness’.

Reading something that at times reminded me of the Spanglish that I grew up on in an academic context radically shifted my perspectives and experience of what ‘academic’ can be. It resonated. I may not be Chicana, but her work resonated with me as the daughter of a Cuban immigrant and an Anglo mother, raised in an often three-generation household—always “cradled in one culture, sandwiched between two cultures, straddling all three cultures and their value systems” (Anzaldúa 1987, 78). But more than that, it helps us see what’s *possible*.

“The possibilities are numerous once we decide to act and not react” (Anzaldua 1987, 79). Thank you Gloria Anzaldúa for reminding us of that. Thank you for the hope and inspiration your writing has given me and those I have had the pleasure of sharing it with.

Moving sunwise you turn to the **south**:
Fuego, inspire and energize us to do the necessary work,
and to honor it
as we walk through the flames of transformation.
May we seize the arrogance to create
outrageously
soñar wildly—for the world becomes as
we dream it.

(Anzaldúa 2015, 157)

CHAPTER 4. NAVIGATING CITATIONAL POLITICS: A PATHWAY TO ETHICAL (UN)LEARNING

How do you enact change? That's the question theories of change seek to answer. Some, such as awareness theories, posit that if people were aware of an issue, they would change (Liboiron and Lepawsky 2022; Liu 2023). In a similar vein, damage-centered theories rely on the assumption that documenting damage will lead to change (Tuck 2009). Gloria Anzaldúa's¹ work provides a different theory which helps answer the question of how learning fosters shifts in consciousness capable of catalyzing collective action—how learning can do more than just make someone aware.

Anzaldúa's *conocimiento* is a genre of learning that is dynamic, actionable, and timely. *Conocimiento* provides a holistic and accurate way of thinking about knowledge that includes the hand, heart, and mind. It places value on the *process* rather than quick fixes and easy answers. Moreover, *conocimiento* helps explain how individual epiphanies are capable of catalyzing collective action. More than anything though, *conocimiento* is central to emancipatory theories of change as it moves from an *is* to an *ought*.

So how do you foster *conocimiento*? In this chapter, I'll continue with the case study of citational politics. This case study shows that you don't need massive infrastructure or even outside teachers to reach this form of learning. The chapter is primarily based on participant observation of lab-wide meetings and smaller working group meetings from the project's inception to its eventual dissemination. I also draw heavily from document analysis of the blog posts resulting from the project. As with chapter three, I use thematic analysis of interview

¹ For background on Gloria Anzaldúa, see the interlude, "Meeting Anzaldúa."

transcripts with lab members and others to corroborate and expand on the findings from participant observation and document analysis.

Citational politics are a tangly, socialized web woven in and through education, dominant discourse, and scholarly identities. The questions of who and what we cite are about more than to whom we credit this ‘fact’ or that one. Citations are also about who we’re *thinking with*. While any one citation weighs just as heavily as any other in the numerical benchmarks of h-indices and citation metrics (e.g. something being cited once or fifty times in a single paper all tally up to the same end figure)—the scholars we use to form our foundations and frameworks, the scholars we think with—shape the thoughts both possible and permissible to think. So, how do we learn how to cite and what do we learn through citing?

By telling the story of this collective experiment in citational politics, I explore how academics learn and learn through citational practices and politics. I illustrate that engaging with citational politics is a hard and messy process, not as neat and straightforward as add this or subtract that, with outcomes beyond the resulting citations in any one piece of writing. To *do* citational politics requires taking time and doing a bit of self-reflecting along the way. Citational politics and positionality are part and parcel—you can’t really do one without considering the other. As a result, I argue that the *process* of engaging with citational politics—thinking about who we think with, who we are in conversation with, who we write with—can shape the type of scholar we become. In other words, engaging with citational politics cultivates *conocimiento*.

To demonstrate this, I first dive a little deeper into *conocimiento*. I then explain its connections to CLEAR and citational politics. The rest of the chapter is organized around Anzaldúa’s pathway to *conocimiento*. Beginning with a rupture, this process moves through seven stages that aren’t linear, and not everyone goes through every stage in the same order, or even to the same degree. However, the pathway provides a helpful organizing framework for

understanding the process through which *conocimiento* is reached. So, I organize the case study around those seven stages before concluding with a discussion of rupture as a site of possibility. The pathway to *conocimiento* maps the winding and even circuitous course through which knowledge moves from what is to what's *possible*.

Knowing *conocimiento*

What *is* *conocimiento*? Anzaldúa explains that *conocimiento* “derives from *cognoscere*, a Latin verb that means ‘to know,’ it’s the Spanish word for knowledge and skill” (2015, 237). In Anzaldúa’s work, *conocimiento* has both a broader and more specific meaning. At different points in her writing, she describes it as insight, awakening, embodied spiritualities, and reflective consciousness. However, she takes the concept further, calling *conocimiento* “that aspect of consciousness urging you to *act* on the knowledge gained” (Anzaldúa 2015, 237 emphasis added). As a result, *conocimiento* brings together Anzaldúa’s earlier theories to develop a holistic understanding of knowledge and learning that is explicitly activist in its orientations.

Conocimiento challenges binaries, rethinks the individual in relation to others, and provides insight into creative acts in knowledge making. Anzaldúa’s *conocimiento* is a relational healing theory of knowing and being that refuses binary constructions such as mind-body, self-other, material-spiritual, public-private, and real-imaginary. Analouise Keating describes *conocimiento* as a relational onto-epistemology (2015, xxvii) that represents a “nonbinary, connectionist mode of thinking” (Keating 2006, 10). Anzaldúa envisions *conocimiento* as “a form of spiritual enquiry” reached via creative acts such as writing, art-making, and teaching, (2015, 119). Through these creative engagements, individual experiences are situated within the larger frame of social realities, connecting personal struggles with collective action.

What does any of this have to do with a marine plastics laboratory or citational politics? Great question. I'm using *conocimiento* because it provides an expansive understanding of

knowledge, including what we can know and how we come to know it. One of CLEAR's goals is to produce scientists that are good at three things: hands, heart, and brain (Liboiron 2020c). So, it's important that *conocimiento* provides an understanding of knowledge that encompasses all three. Moreover, given its explicitly activist orientation and its focus on knowledge that propels action, it aligns well with CLEAR's goals as a lab. Furthermore, *conocimiento* is a particularly helpful framework for understanding the process of navigating citational politics because it approaches writing as a creative act through which *conocimiento* might be reached. The thing with *conocimiento* is not that you end up with an answer or a new truth, it's that you are able to navigate contradictory worlds (which is totally what the citational politics project was about).

The pathway to *conocimiento*

Cada arrebatamiento is an awakening that causes you to question who you are, what the world is about. The urgency to know what you're experiencing awakens la facultad, the ability to shift attention and see through the surface of things and situations. (Anzaldúa 2015, 125)

El camino del *conocimiento*/the pathway² to *conocimiento*, involves travel between seven nonlinear stages or spaces through which internal shifts in consciousness are linked to collective action. The stages may occur concurrently, chronologically, or zigzag in between. As Anzaldúa explains, "[y]ou're never only in one space, but partially in one, partially in another, with *nepantla* occurring most often—as its own space and as the transition between each of the others" (Anzaldúa 2015, 123-124). In the following sections, I'll use the pathway to *conocimiento* as an organizing framework for explaining the process of learning that occurs through engaging with citational politics.

² Thank you to education scholar Stephanie Jones for your reminder about the limitations of metaphors. A pathway may bring to mind a predetermined linear track to follow. Anzaldúa's pathway is a way of travel, the endpoint unknown, the track overlapping, circling back, and crisscrossing over itself.

Moving forward with the citational politics story is going to feel a little less like moving forward and more like moving this way, that way, reverse, pivot, circle back...well I think you get the idea. However, I argue that the framework of *conocimiento* can help us understand this process—to understand *how* engaging in citational politics and practices produces a different kind of scholar(ly identity) and how these internal shifts scale across different relations. The citational politics experiment might not have answered all of our questions, but it did give results.

As a reminder, we ended our citational politics story with the project proposal for a collective experiment in doing citation differently, doing it better. As Max³ states in their blog post about the project, *“It is necessary but insufficient to want to do better, and hope actions fall into place through intention”* (Liboiron 2022a). The citational politics project was thus a way to try to *do* better rather than just expect good intentions to automatically yield good results.

Once we had the project design set, we chose an existing scientific paper authored by CLEAR to try out our treatments⁴. From that paper, we narrowed it down to three specific paragraphs—one from the introduction, one from the methods, and one from the discussion. The plan was to take those three paragraphs and apply our ‘treatments’ to them to see how the text would change. Each treatment was generally assigned to three people of varied career stages, trying to include an undergraduate, a graduate student, and a professor on each team. I was a part of the racialized targets and the gratitude and humility treatment groups, so I can only speak

³ My name is Dr. Max Liboiron, L-I-B-O-I-R-O-N. My pronouns are they/them, I am Michif, or Red River Métis, and settler. Grew up in treaty six territory. But I have been living and working in Newfoundland and Labrador for about 10 years, which are the homelands of the Beothuk and the Mi'kmaq. And I also work in Nunatsiavut which are the homelands of the Inuit. And my pronouns are they/them.

⁴ As a reminder, in addition to the control, our treatments were: gender diversity targets, racialized targets, and global south targets (difference group); other forms of knowledge, local knowledge, and accessible knowledge (knowledge group); and gratitude and humility and responsible/accountable (values group).

to what happened during those small group meetings. However, all treatments were discussed during the lab-wide meetings.

Each person would apply the assigned treatments to the selected paragraphs and keep a ‘treatment journal’ to document what happened, including what you tried to do, what happened when you tried to do it, how you felt doing it, and any other relevant notes. We would then compare findings in our small groups before reconvening as a lab. So, what happened as we tried to apply the treatments as individuals and as we collectively grappled with the outcomes?

One: An ending and beginning

The pathway to *conocimiento* begins with an **upheaval or rupture** that catalyzes an eventual shift in consciousness. Anzaldúa describes this first stage, as an event that pulls the “linchpin that held your reality/story together” (Anzaldúa 2015, 125)—a loss, a betrayal, systemic racism, or another experience that “turns your world upside down and cracks the walls of your reality” (Anzaldúa 2015, 125). Rupture can be both a beginning and an end. Moments of rupture can shut you down or close you off, “pushing you out of your body” (Anzaldúa 2015, 153). Yet, for *conocimiento*, rupture can also be a site of creative possibility, rendering visible that which is normally concealed by the everyday (Anzaldúa 2015, 153). Upheavals can be a space of possibility.

Upheaval ruptures your current presuppositions and renders frames of reference irrelevant as it “jars you out of the cultural trance and the spell of the collective mind-set” (Anzaldúa 2015, 125). In many ways, the social context of the time—COVID-19 and the Black Lives Matter movement set the backdrop for the project—meant rupture had become the new normal. But moments that shake you from what you thought you knew don’t always come on such a global scale or with such heavy consequences. Sometimes smaller, more mundane, moments or experiences can create such a shift. Some of these ruptures happened during and through the

citational politics project. I'm not saying these are comparable in scale, just that multiple ruptures at multiple scales are often occurring simultaneously.

The beginning of the citational politics project triggered different ruptures for both individual lab members and CLEAR as a whole. For some labbers, it was reading about citational politics and engaging in lab-wide conversations about it⁵. For example, both Molly⁶ and Kaitlyn⁷ (who we met in chapter three) expressed an initial disinterest in citational politics. However, in both cases that changed after learning more about the topic. Molly explains their *arrebato* in her blog post:

As a graduate student in marine biology, I had never considered the importance of whom and how I cite before. I had never thought about citation beyond its use to enhance and strengthen my own work, and I had never had it brought to my attention. From my experience within the academy, I already knew about citations in regard to their importance to my career, like the importance of being cited often, of publishing in high impact journals, and the negative view of self-citation. So, when I first heard that citational politics was to be the topic of discussion at one of our lab meetings in CLEAR, my ignorance prevented me from feeling particularly engaged. After this initial lab meeting however, I found myself **shocked** by the importance of citation, and particularly by my lack of awareness of the impact my citing could have on others. I was especially **shaken** by the fact that I had never heard this discussed before, an aspect of scientific writing I now realise is so important. (Rivers 2021)

Kaitlyn also used the language of 'shock,' saying that learning about citational politics changed their entire thought process on it:

What I read in those assigned readings and in other pieces that those readings led me to, completely and **utterly changed my entire thought process** on the subject and frankly **blew my mind**. It was then on that I began to learn a lot of **shocking** knowledge about the politics of citation. (Hawkins 2021)

⁵ I'm not advocating for an awareness theory of change here though (Liu 2023); becoming aware of citational politics may have been a rupture for some, but just learning about it alone doesn't change the outcomes. Rather it was engaging in the process of trying to *do* something about it that catalyzed change.

⁶ From her blog post: "Molly Rivers (she/her) is a settler in St. John's, Newfoundland, originally from Bristol, England. She is currently doing her Master's degree in marine biology at Memorial University of Newfoundland researching behavioural ecology of invasive species."

⁷ From her blog post: "Kaitlyn Hawkins (she/her) is a settler from Newfoundland and Labrador, the ancestral lands of the Beothuk. With a B.Sc. from Memorial University, she works with CLEAR as both a researcher and as the lab's manager."

For both women, learning about citational politics ruptured what they thought was true about academia, that citations are a neutral technology. As white women and junior scholars, their positionality may have influenced their experiences with citations, creating that initial experience of rupture.

For others occupying different identities, citational politics unfortunately wasn't always a new idea for them but rather reflected their own experiences with publication. As Max explains,

Some of us have been unable to publish path-breaking work from non-dominant perspectives. Some have had our public intellectualism used but not cited in works by dominant actors, even as we're celebrated by those same actors as being generous and brilliant. Most of us have been bumped down or removed from authorship on projects we are involved in. (Liboiron 2022a)

This is indicative of how positionality plays a role not only in citational politics, but individual experiences with it. While initially learning about citational politics may not have been a moment of rupture for everyone in the lab, CLEAR as a lab had its own eye-opening realization at the beginning of the project.

The citational politics project created a rupture for the lab as a whole, challenging CLEAR's self-image. Max described this experience in their blog post:

Indeed, we have understood ourselves as a feminist lab since our inception, but when we look at one of our fairly recent papers on plastic ingestion in fish (our bailiwick research topic), we found that we cited only ~20% women authors, and nearly ~60% White authors (Liboiron et al. 2019). Intentions, even when clearly stated and revisited, are not enough to change norms. (Liboiron 2022a)

Even as a feminist and anticolonial lab, CLEAR had some work to do in order to enact good citational politics in our work. The project triggered that recognition, that rupture. Consequently, the collective experiment was a way to work on our own citational practices—to rethink how we were citing and how we might cite in the future. The realization that even as a feminist and anticolonial lab, our citational practices still left something to be desired was thus a catalyzing rupture for the lab as a collective.

The citational politics project created a new beginning as we worked collectively to find a way forward/grapple with what to *do* about it. It seemed straightforward at first, but as the project unfolded, it was anything but. It triggered ruptures at both individual and collective levels that catalyzed the pathway to *conocimiento*. However, throughout the project, we spent the most time inhabiting an in-between or liminal space of transformation and the second stage on Anzaldúa's pathway.

Pause.

Before going on to the second stage, I want to bring your attention back to the when of the project. It was still in the early days of COVID-19, so alongside our collective experiment there was uncertainty and upheavals all around us. This was also right in the middle of the Black Lives Matter protests, with #ShutDownSTEM happening at the same time as our lab meetings about applying the treatments. One of the important recognitions in CLEAR is that context matters, and in this case, the context of the project—the current moment—took a front seat in the conversation. Max explained that “one of the things that guides this lab is the crucial role of specificity and politics” (June 12, 2020 meeting notes). So rather than diving right back into the citational politics project, the lab meeting gave us a space to pause and reflect. We started with a round robin check-in about Black Lives Matter and how it had impacted not just our projects, but our lives. Did we take part in the strike? What did we do?

We left the meeting with the following commitment: “One of the commitments we’ll be making is not to let this moment pass. But to maintain it and deepen our commitment” (Max, meeting notes). The meeting also emphasized the importance of supporting people in our groups taking breaks and Max told us to remember that “taking breaks is part of your activism, rather than a departure from it” (June 12, 2020, personal meeting notes). Moreover, Max emphasized the importance of specificity, as evidenced by one of the main takeaways in the lab meeting notes:

“This project [citational politics] is about specificity, the difference between anti-blackness and colonialism, oppressions by Black vs. Indigenous vs. People of Colour, etc. Think about what we consider citation as what is both on the page and what we do through the page/project” (June 12, 2020 meeting notes).

Two: More questions than anything

After a rupture or break, “yesterday’s mode of consciousness pinches like an outgrown shoe” (Anzaldúa 2015, 125) which can result in multiple opposing perspectives and realities existing simultaneously, intertwined through continuous dialectical encounters. This second stage is “an in-between space” or a place that is not a place (Anzaldúa 2015, 28). As a stage of *conocimiento*, Anzaldúa describes it as a liminal space where different perspectives “come into conflict and where you question the basic ideas, tenets, and identities inherited from your family, your education, and your different cultures” (2015, 127). While rupture renders those cultures transparent, here the “zone between changes where you struggle to find equilibrium between outer expression of change and your inner relationship to it” (Anzaldúa 2015, 127). It’s a site of constant tension through which transformation is possible.

After the pause, we continued meeting with our treatment groups. The next few lab meetings centered on report backs from each group. Both within and across groups, it was clear that people took very different approaches, even for the control group. The process differed for different people based on their standpoints, yielding different results. The project’s structure of individual application of treatments, small working group meetings, and lab-wide meetings to share findings formed an infrastructure that was able to render these differences visible. That shifting back and forth between individual and collective work made certain forms of learning possible. It also fostered an in-between space where we had more questions than anything else.

This liminal space is somewhere we came back to time and again during the project as question after question kept surfacing. In my individual efforts to apply the treatments, I found that what I had was A LOT of questions, as evidenced by my treatment notes from trying to cite

with humility (Figure 4.1). Even my annotations of the Lab Book's definition of humility was punctuated by questions (Figure 4.2). However, I wasn't the only one with more questions than answers and as the weeks went on, we continued to wrestle with the question of "*how do I cite well?*".

In the difference group, questions around classification were frequently raised. Do you assume gender based on name? On a profile photo? What about race or ethnicity? Who counts as Global North versus Global South? These questions only raised more—is an add and stir approach really going to enact good citational politics? What are the ethics at play here? Is it enough to just cite more women? More people of color? More Indigenous scholars? Or is it also about *how* you cite?

The deluge of questions left us circling back to the in-between throughout the process. However, this liminal stage is also a place of possibility. Consequently, the questions that we encountered sometimes catapulted us into new forms of learning, into *conocimiento*. Yet encountering questions and the uncertainty that comes with them doesn't make for a straightforward process. In times like these, it's hard not to fall back onto what's been deeply ingrained, on what you were trained to do through years of socialization.

Plastic ingestion by fish is a primary concern in Newfoundland, where both “recreational” (sustenance) and commercial fishing remains financially and culturally important to the people of the province. Within the context of the Newfoundland fishery, Atlantic cod yielded the second highest landed value for all captured groundfish species (~\$23 million), while capelin (*Mallotus villosus*) yielded the highest landed value of all pelagic species (~\$13.5 million) (Fisheries and Oceans Canada, 2017). The provincial recreational fisheries have one of the highest participation rates in Canada: 71,382 participants in 2010 according to Fisheries and Oceans Canada (2012). In a study of seafood preferences in rural communities in Western Newfoundland, both Atlantic cod and Atlantic salmon were the species most commonly consumed by respondents (81% and 42%, respectively), while capelin was eaten less often, but remained a part of the diet of a majority of respondents (Lowitt, 2013). (page 244)

This baseline study synthesizes plastic ingestion data collected across the island of Newfoundland between 2015 and 2016, including inshore bays and harbours, as well as offshore regions of the Gulf of St. Lawrence, the Grand Banks and a collection site north of Labrador (Davis Strait) (Fig. 1). This research was conducted on the unceded, unsundered ancestral lands of the Mi’kmaq and Beothuk peoples. We would also like to acknowledge the Inuit of Nunatsiavut and NunatuKavut and the Innu of Nitassinan, and their ancestors, as the original peoples of Labrador.

Plastic characteristics (type, colour, length, mass, weathering and polymer) were quantified as a percentage of all particles for which the characteristic in question could be determined. Plastic types were categorized as either: industrial resin pellets, sheet/film (i.e. plastic bags), threads (i.e. fishing line, rope), foamed plastics (i.e. polystyrene packaging), fragments (i.e. hard plastics from a wide array of products), fibres (i.e. from clothing), microbeads (i.e. from personal care products) or other. In order to evaluate the state of plastic erosion each particle was assessed for: discolouration, fraying, fracturing, pits and grooves, and adhered particles (Corcoran et al., 2009), as well as burning or melting (Avery-Gomm et al., 2016). Raman micro-spectrometry (Reinshaw InVia with 830 nm excitation) was conducted only on particles obtained from Atlantic cod collected in 2016, Atlantic salmon and capelin. This analysis was not available for the Atlantic cod collected in 2015. However, no plastics from 2015 were visually ambiguous. Particles that could not be weighed (because they were lost prior to weighing or were too small to register) were assigned a mass of 0 g for calculations involving the entire sample population, and left out of calculations for the sub-population of individuals with ingested plastics. (page 245)

The ingestion of plastics by Atlantic cod has been examined over a wide geographic range beyond this study, with a particular focus on the Northeast Atlantic. The reported results from this region have been highly variable. Rummel et al. (2016) and Bråte et al. (2016) report % FO values of $\leq 3\%$ for the species in the North, Baltic and Norwegian seas. By contrast, earlier studies reported higher %FO values for Atlantic cod in the same region ranging from 13% (Foekema et al., 2013) to 39% (Lenz et al., 2015) in the North Sea, and 21% in the Baltic Sea (Lenz et al., 2015). Low plastic ingestion levels reported for Atlantic cod ($< 3\%$ FO) that are complementary to the results reported here stem from studies that similarly rely on the visual identification of plastics (Bråte et al., 2016; Rummel et al., 2016). Meanwhile, reports of relatively high plastic ingestion levels in Atlantic cod ($> 10\%$ FO) have stemmed from studies that employ acid digestion of digestive contents and can identify plastics $< 1\text{mm}$ in size (Foekema et al., 2013; Lenz et al., 2015), thus increasing the size range of identifiable plastics and the resultant %FO for the sample population. Acid digestion protocols are not suitable to the long-term monitoring developed by CLEAR for its accessibility to citizen scientists and so are not used in this study (see Liboiron et al., 2016). (page 247)

Commented [CMC1]: How is this known? Could it be a place to cite community meetings, locals, or individual/collective experiences?

Why is the lab studying this research topic? Insert an explicit rationale for the project to indicate relations.

Bring in an ecological/food web perspective? Explanation of why plastic ingestion is a concern (be specific)? How does it impact those who consume it?

Commented [CMC2]: What is the lab's relation to the organization?

Why did the lab choose these specific authors to cite? What is there relation to them?

Commented [CMC3]: Instead of citing the survey, are their individuals or experiences that could be cited instead to discuss seafood preferences in rural communities in Western Newfoundland?

How could the laboratory be situated in this paragraph?

Commented [CMC4]: Could this study be cited along with participants?

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Commented [CMC5]: Include the feminist and anti-colonial practices in the methods section. What informed them? Cite feminist and indigenous literature that informed the methodologies employed on a regular basis

How were those doing the work compensated? Who did the work of collecting and analyzing data?

What were the moments that required the method to change when things didn't work? Transparent methodologies...

Commented [CMC6]: What made it possible this time around?

Commented [CMC7]: Other than formal studies what else is known and how?

What can not be known through the science?

Commented [CMC8]: How can this work be credited more than a citation? Does a citation necessarily show gratitude or does more need to be included since others often will not read the original articles cited?

Figure 4.1 Gratitude and humility treatment notes documenting the changes to the original paragraphs (notice that more than changes, there were questions).

Next, I went to the lab manual to look up the lab's definition of **humility**:

- "Humility is enacting the understanding that our world is interconnected. It is about recognizing that one still has much to learn regardless of age, education, or lived experience and about remaining teachable, no matter how much we already know. Being humble means that we—as members of larger groups of humans and others—recognize that we are not singular nor superior in our knowledge, perspective, experience, or social position, and that we are connected to others (whether we want to be or not). We can be humble by being ready to change our minds and actions, being responsive to context, stepping back and listening instead of taking up space, and being mindful of our surroundings so we might adapt to it rather than force it to adapt to us. A humble person understands that there are many ways to know things, many different forms of knowledge, and recognizes the limits of a single way to know things (e.g.: strictly via the scientific method is not superior to lived experience, but is a different kind of knowledge, or even that your own good intentions are better than the other good intentions in the lab)" (5)
- "Being humble means being ready to change oneself, being responsive to and mindful of one's context (i.e.: our social environment) so we might adapt to it rather than force it to yield to us or our desires. Humility and collaboration requires accountability to each other, to other beings, to place, and to the things we produce (i.e.: our lab space, our knowledge/research) because we are always already connected to these things."
- Humility is a verb, not a noun. It is not just discursive work (saying things in support, acknowledging others verbally in Lab acknowledgements), but involves concrete actions that make material change on the ground" (6)

After which, I returned to Max's article for some definitions of **gratitude**. I couldn't quite remember where I read it so I started by going back to "Exchanging," then to "Doing Ethics with Cod," and finally the intro to *Pollution is Colonialism*:

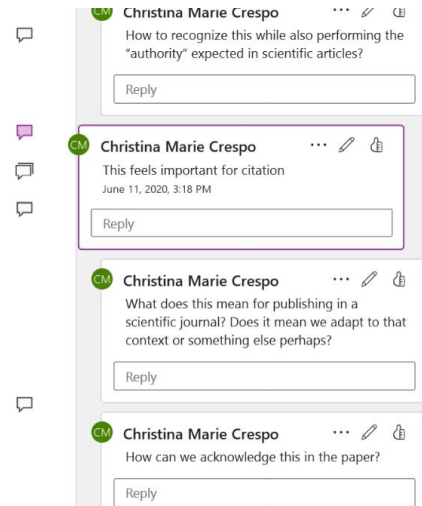


Figure 4.2 My annotations to the Lab Book's definition of humility (notice that I even had questions about what humility was before I could even begin to figure out how to cite with humility).

Three: Desconocimiento

Under *conocimiento*, transformation is not an easy or straightforward process. This is particularly apparent in the third stage, "Coatlicue states," or blocks, referring to periods in which one might return to **desconocimiento**, false knowledge or not knowing, in order to avoid or to retreat momentarily from the inherent struggle of transforming internal consciousness. Anzaldúa explains this is the result of a central paradox of *conocimiento*, that "the knowledge that exposes your fears can also remove them" (2015, 132). It's an easy place to fall into as the result of years of socialization.

Sometimes when you try to do things differently, you end up doing them the way that they've always been done (and perpetuating the same harms in the process). Unlearning dominant citational practices—doing things differently—is hard. Multiple lab members talked about not knowing how to do *it*, not knowing what we were allowed to do. There were moments of impasse or hesitation, walls that we ran into that were really imaginary rules that we thought

we had to follow. The funny part is that there wasn't a wrong way to apply the treatments! We could break any 'rules' that we wanted! Yet we still got stuck in them.

This shows how deeply ingrained academic practices and norms are. Even when you have freedom, it can be hard to shake the feeling of a right and a wrong way. Even in CLEAR. As a result, one of the main takeaways from one lab meeting was:

There should not be any rules. If you are stopped by a rule, think where it comes from. Write that down. We will figure out why those rules are there and where the wiggle is (meeting notes for June 6, 2020).

During a check-out at the end of the meeting, Molly expressed that it was nice to know that other people were encountering challenges. Max explained that tracking our moments of failure is par to our findings, reinforcing the normalization of failure that's central to how scholars are socialized in CLEAR. We left that meeting ready to get back into our treatments.

Over the next few meetings more treatment groups shared their findings from the project thus far. There was a clear trend. The groups didn't have solutions, but they did have a lot of questions and considerations to navigate when trying to enact good citational politics (including what 'good' means). As a result, the project didn't end in a set of protocols or a methodological paper. It ended in a working group. So really, it didn't end at all.

With the first iteration of the citational politics project complete, the project transitioned into a smaller working group tasked with figuring out what to do with the findings from the collective experiment, with citational politics *in practice*. Given all the questions and conundrums that were raised during the experiment, it no longer made sense to collaboratively write a single methodological text. The new goal was to create a series of blog posts around different topics related to citational politics. New members who hadn't been a part of the original experiment also joined the group as it continued over the following years, resulting in seven blog posts from

2021 to 2023, with two additional posts still in progress. Writing the blog posts brought with it even more moments of desconocimiento as new questions began to surface.

In trying to put new citational approaches into practice, desconocimiento reared its head on more than one occasion. This was most obvious in the drafts of the blog posts and in the peer feedback the drafts received. For example, in Riley's⁸ blog, they originally discussed the solution that *everyone* should be expected to include a positionality statement in their work. Through conversations, however, it became clear that this solution wouldn't enact the citational politics he hoped for. Positionality is easy to account for if you fit into dominant boxes, however, for some passing is a strategic way to get by (Hoang 2015). Sometimes passing is even an issue of safety. So, requiring everyone to disclose would inevitably just further marginalize those who are already marginalized. Oops! However, this moment of desconocimiento also opened up an opportunity to continue down the pathway to generative forms of learning, to conocimiento.

Desconocimiento may sometimes feel like a backslide, however, it's part of the learning process. The moments described here show how good intentions alone are not enough to counter years of socialization and the deeply ingrained practices that come with them. But that's okay! That's why this isn't just a two-stage process. Desconocimiento is a steppingstone along the way to new knowledge and new ways of knowing, being, and doing in the world.

Four: The compromise and crossing

This brings us to the fourth stage, the **compromise and crossing**, in which one begins to move into a new identity, a new understanding of the world. In this stage, "[y]ou open yourself up and listen," bridging the mind-body dichotomy by asking what you can contribute, what you can *do*, as a fundamental step in ethical learning (Anzaldúa 2015, 136). "As you continually

⁸ "My name is Riley Cotter. My pronouns are he him I am a settler born and raised and currently work from the island of Newfoundland which is the ancestral homeland of the Beothuk and the Mi'kmaq and I'm a master's student at CLEAR."

reinterpret your past, you reshape your present” (Anzaldúa 2015, 136). As you cross a bridge into something else, you might leave pieces of you, your story, “erroneous bits of knowledge” behind (Anzaldúa 2015, 137). The process of writing the blog posts helped us move into and through this stage of the pathway.

Part of the fourth space of *conocimiento* is the recognition that you might need help to transform, that it’s important to listen if you’re going to leave old bits behind and create new stories. For many in the working group (myself included), an important moment came in the form of a reading from Katherine McKittrick’s book, *Dear Science and Other Stories*. The text gave some of that help and we wanted to listen. Rather than the Sara Ahmed approach to citational politics (i.e. ‘I don’t cite (the institution of) white men’), Katherine McKittrick gives a different understanding of citational practices, one that centers on citing as a form of relations and a way to enact possibility (I’ll discuss her work more in chapter five). Her work helped as we struggled through the different citational practices and the tensions they bring.

Working on the blog posts, and the moments of *desconocimiento* that came with, confronted us with the question of, “well, how do we deal with it?”. Often, we were left with questions that we couldn’t answer. Questions that couldn’t be solved. Instead, we decided to sit with it. To accept that there weren’t always easy or straightforward answers, but to still keep working at it. Rui Liu⁹ described this issue in their blog post about citing against harm:

Until the colonial university is abolished, until carceral society is abolished, **there is no innocent, easy, standard, cut-and-dry way out of the problem of citing against harm**. Although having ready-made solutions is not a prerequisite for critiquing something oppressive, or desiring something else, **I’m interested in fleshing out how citation can be used as a non-innocent technology for change**. (Liu 2023)

⁹ “Rui Liu is a PhD student in American Studies at New York University. Their research explores the circulation of settler colonial aesthetics, discourses, and infrastructures across China and North America through transnational feminist and queer methods.”

Rui's blog post illustrates how engaging with citational politics can be a generative form of learning. By accepting that there are no easy answers, Rui instead provides a toolkit, "a mixed bag of strategies that foreground accountability and structural violence" (Liu 2023). While they aren't straightforward solutions, the tools give insights into how these problems might lead to "a reorientation to how we think about attribution, credit, and the project of knowledge production" (Liu 2023). The tools orient us towards *conocimiento*, towards new personal and collective stories.

Coming to *conocimiento* sometimes means taking a step back to listen. Sometimes that means seeking out help or guidance. Sometimes it means asking different questions. By taking the time and the space to consider the problem at hand, it opens up the possibility for new stories to be formed which brings us to our next stage in the pathway.

Five: New personal and collective stories

Anzaldúa describes this fifth stage as creating "**new personal and collective 'stories,'**" ones that provide an option other than assimilation or separation. She explains that through this process of examining the world often taken for granted, the dominant paradigm loses footing as the "only true impartial arbiter of reality" (Anzaldúa 2015, 140). In developing a more expansive consciousness it is necessary to attend to multicultural narratives, creating new stories that "must partially come from outside the system of ruling powers" (Anzaldúa 2015, 140) though they may also strategically "relocate selective features of the older frameworks within the new ones" (Harding 2016, 1078).

Through the blog posts and the working group meetings, we worked to (re)define what good citational politics might mean for our individual practices and for the lab as a whole. As Rui sat with Katherine McKittrick's words, their final tool for citing against harm asked us to reimagine what citation could be and do. She asks...

How might our protocols for citing against harm shift when we turn away from individualistic understanding of authorship that frame knowledge as intellectual

property to an understanding of knowledge production as an inherently collective endeavor? (Liu 2023).

In this turn to *conocimiento*, Rui is beginning to redefine traditional narratives of what citation is and can do. She continues working through McKittrick's work to come to the following conclusion:

Reorienting our focus to collective intellectual praxis challenges the illusion of individualized knowledge production and individual "choice" and shifts our energies to building the kinds of intellectual communities we want to be a part of. Thinking about Black collaborative ways of knowing, McKittrick argues that the "works cited" lists of Black studies, "when understood as *in conversation* with each other, demonstrate an interconnected story that resists oppression. (Liu 2023)

Rui's blog post provides one example of how struggling through citational politics generated a new understanding of citation, of citation as collective praxis.

Rather than give one-size-fits-all recommendations for enacting good citational politics, Max focused on a particular sphere of citation, on citing in "tight spaces" where there isn't much flexibility for what and how you might be able to cite, where "not only the norms of citation (of the canon) but also the structure of the knowledge or research overdetermines what might be done" (Liboiron 2022). These tight spaces are things like baseline studies or comprehensive exams—places where the wiggle room is small. What Max calls attention to, however, is that even in these tight spaces, there is some wiggle room. Working that wiggle room is what CLEAR is all about.

By focusing on the wiggle room, Max shifts narratives of unyielding monoliths ("there's nothing that can be done") into spaces of possibility. They provide *tactics* for how to navigate these spaces of citation. As Max explains,

CLEAR believes in critiques of citation and referencing, but we're still scientists in the dominant tradition of Western science. At the end of the day, we still put on our lab coats, write papers, and need to cite knowledge about plastic pollution, including baseline studies. We are committed to the question of *how* to cite differently in these tight places. (Liboiron 2022)

The tactics are imperfect in that there is no perfect to citational politics. Each of the tactics came with their own “compromised agencies” (Liboiron 2017). For example, one of the tactics, “Engage your citational uglies” translated into the same bibliography, however, the body of the text focused on some knowledge over others. The citations were there, but how much airtime each received changed. Max’s quote also highlights how new stories can be situated both inside and outside dominant narratives. Doing things differently doesn’t have to mean tearing everything down. This is emphasized in one of Max’s concluding points...

...the issues and tactics we outline here are dedicated to working within these tight spaces rather than fantasizing our ways outside of them. Thinking with la paperson’s *A third University is Possible* (2007), we are not interested in citations that have been modified to *be* in good relations as if they are settled, but rather citations that enact good relations, even when they are still in problematic structures and standards. We hope this experiment in finding our way through a tight space is useful to your own efforts at change. (Liboiron 2022)

The question remains of *how* to cite in ways that enact good relations. Following the pathway to *conocimiento* might be one way to enact those relations.

With new ideas and stories about citation in hand, CLEAR took the next step by sharing what they learned beyond the collective. Some of the blog posts rewrote individual’s stories and their relations to citations. Other blog posts like Max’s and Rui’s asked what new collective stories look like. Both are part of the process, even if the relations that matter might differ for each. But what happens when these new narratives move outside of the lab? What happens when others are confronted with the stories?

Six and seven: Navigating backlash and acting out the vision

Thus far, attention has primarily been directed towards internal shifts in consciousness, however, Anzaldúa emphasizes the role that internal changes play in collective action. The sixth stage of *conocimiento* is “**the blow-up...a clash of realities.**” She explains that “[n]ew *conocimientos* (insights) threaten your sense of what’s ‘real’ when it’s up against what’s ‘real’ to

the other. But it's precisely this threat that triggers transformation" (2015, 147). Anzaldúa acknowledges that in bringing new realities to bear, conflict will inevitably ensue. However, she asserts that new knowledge is produced through conflict, chaos, tension, and mistakes (2015, 143).

The sixth stage of *conocimiento* is the blow back that comes with new ways of knowing. Sometimes it just comes down to haters are going to hate. However, it can also be an opportunity, where the resistance from someone else might trigger their own *conocimiento*. As a CLEAR member, I'm sheltered from a lot of this blow back by Max and the lab managers. It's how the lab is intentionally designed. Max explained how the lab is supposed to work as "shit rolls uphill," so that those accountable for the lab at the end of the day (i.e. Max) are also the ones that take on the backlash. I know Max gets some major hate mail in response to CLEAR's work. I get to be spared from it though. It's one of the benefits of having someone 'drive the bus' so to speak. Max is accountable for the lab and dealing with the conflict brought on by others is one of the ways they enact their accountability.

In this stage, however, Anzaldúa also illustrates how you can work to bridge those differences through "individual and group rituals to contain volatile feelings and channel them into acts of *conocimiento*" (2015, 149). By accepting ambiguity and doubts, conflict can be reframed, shifting the point of view in more open and inclusive directions.

This brings us to the end of the pathway, **acting out the vision** (which is really just more beginnings and branches and sideshoots and backtracking, as the pathway has no end point in reality) (Anzaldúa 2015, 149). Anzaldúa explains what happens in this stage as "the critical turning point of transformation" (Anzaldúa 2015, 123). This is the point in the process where "[y]ou include these practices in your daily life, act on your vision" (Anzaldúa 2015, 123). For the

citational politics project, this means bringing the new stories of citation with us into our individual and collective practices.

The knowledge from the citational politics project doesn't exist in isolation and it has shaped how many in CLEAR approach citation in spaces beyond the project. For example, I asked Edward¹⁰ to tell me about their experience with the citational politics project and this was his response:

Actually, that's another **learning experience for me and one that I've been able to enact actually just recently**. So I'm weird in this regard. You know, citations are often considered the currency of academia, right? But I don't give a shit about them. Right? I don't. And I know that's going to prevent me from teaching or any position, really. But it's just never been a currency for me. **But I learned during this project**, you know, what the significance of it is, what it perpetuates, what it does, what it doesn't, what its impact and a number of other things, right? So, **I started giving a shit about it. Not as in a self-promotion kind of thing, but in a way that I can attend to more, for lack of better words, equitable acknowledgement of contributions, right?**
(Edward 2023)

Edward highlights how learning about citational politics changed his own feelings about citations and consequently his practices.

The citational politics project is embedded within a broader set of relations within CLEAR, both informing and informed by other ongoing lab projects and aspects of Max's work.

It wasn't only a lab project. I also added modules to my courses, I also put together a data spreadsheet of like, core BIPOC folks in plastics for us to read and cite. Some of that came out of the citational politics treatments, but some of it didn't. I have this big citational politics/what is cheating module in my courses, because a lot of the COVID cohorts don't know that they're plagiarizing, like they really don't know. They also think that all their ideas are theirs and that ideas don't come from conversations, and you have to document those as conversations. And it's to an unusual degree in the COVID cohorts. So now, now, I will teach to that unique thing. **Reading Kathrine McKittrick's *Dear Science* changed my citation practices. Learning about the Gray test changed my work, where I spend a lot more time myself, and when I talk to other people, engaging in, with other people's ideas on their terms.** I mean, look at

¹⁰ "Yeah. So depending on how familiar people are, if new people are there, I would tend to introduce myself as, I'm the son and namesake of Edward Allen from Nunatsiavut. I'm Kallunangajuk which is an Inuktitut term. It refers to somebody that has blended Inuit and settler ancestry. I'm a visitor here on the ancestral homelands the Beothuk, longtime visitor, student of the geography department, longtime member of CLEAR, father, brother, son, and all-around good guy."

Pollution is Colonialism, the footnotes, the writing of that predates our working group, but is also in tandem with the citational politics group. There would have been even better footnotes if we had the working group before I wrote the book. (Liboiron 2023)

Acting out the new visions of citational politics thus connects multiple lines of work in CLEAR.

Conocimiento is not as much about naming a problem, as it is about finding productive ways to move forward to new narratives (Anzaldúa 2015, 140). Rather than viewing the pathway to conocimiento as ending with a final destination, the process itself is what is valuable. By engaging with the *process* of citational politics, by sitting with the struggle, we might not have arrived at neat straightforward answers. However, thinking about who we think with, who we are in conversation with, who we write with—can shape the type of scholar we become. Engaging with citational politics can cultivate conocimiento—knowledge made for action.

Conclusion

As Anzaldúa asserts, “[c]racks in the discourses are like tender shoots of grass, plants pushing against the fixed cement of disciplines and cultural beliefs, eventually overturning the cement slabs” (Anzaldúa 2015, 73). These moments of rupture can not only serve as spaces for more than individual transformations, but also collective action. By telling the story of the collective experiment in citational politics, I showed how academics learn and learn through citational practices and politics. I used Gloria Anzaldúa’s pathway to conocimiento as an organizing framework to move through stories and encounters at different scales. What these stories show is the value of a collective space and intentional infrastructure that help turn a moment of shock into deep learning.

There is one point where I diverge from Gloria Anzaldua, however. She states that “...wounding is the entrance to the sacred. Openings to the sacred can also be triggered by joyful experiences...because most of you are wounded, negative emotions provide easier access to the sacred than positive emotions” (Anzaldua 2015, 153-154). As a long-time CLEAR member, it’s clear

that joy can also serve as an excellent source for conocimiento, something I'll illustrate in chapter five.

So, what's next for you? How might you put good citational politics into practice?

INTERLUDE FOUR. A RETURN TO ANZALDÚA: A MORE COMPLICATED STORY

This interlude will be quite brief, but I believe it's necessary, nonetheless. I thought about not using Anzaldúa's work so centrally in my dissertation given the somewhat complex terrain her work brings us into. However, not citing her would feel more than disingenuous, it would feel unethical. Her work did in fact inform how I think about what I've presented you with in this dissertation. Her work has helped me understand the world. My work is in conversation and community with Anzaldúa's (McKittrick 2021). However, as CLEAR members reminded me, Anzaldúa's work has also been critiqued for appropriating Indigeneity and Nahuatl concepts (e.g. Saldaña-Portillo 2001; Hooker 2014; Busey and Silva 2021). A point that I don't think should be ignored.

At this stage, I could open up a rather large can of worms. Or I could decide not to. I'm going with the latter route. So, I won't be delving into the critiques of Anzaldúa's work here. Instead, I work toward a goal that Rui Liu¹, puts forward in her blog post on citational politics,

Citing against harm toward collective intellectual praxis then, may not (just) be about excluding specific individuals. Citing against harm toward collective intellectual praxis redirects our attention to structural oppression, building good relations, collective modes of resistance and the necessity for political mobilizations beyond individual citational practices, and transformative change.[25] It gestures to a future capacious enough for not only the mitigation of harm but its transformation. (Liu 2023)

So, I still chose to cite Anzaldúa; however, I do so with a recognition of the larger issues at play. Consequently, I try not to use Indigenous language that does not come from Indigenous language

¹ "Rui Liu is a PhD student in American Studies at New York University. Their research explores the circulation of settler colonial aesthetics, discourses, and infrastructures across China and North America through transnational feminist and queer methods."

users. I also elected to not italicize or translate most Spanish words that I use. In the end, all decisions are compromises.

CHAPTER 5. JOY AS RUPTURE: A TALE OF TWO FIELD STATEMENTS

To be trained within a discipline is to learn to follow a citational path...good habits of citation are about extending a line: you have to show how much you know a field by citing those *deemed* to have shaped that field. (Ahmed 2019, 168, emphasis added)

What do PhD qualifying exams have to do with citational politics? Citational practices come with a lot of baggage...and expectations...and expected baggage (Liboiron 2022a). For graduate students, citations can be the hook upon which our [nascent] credibility hangs. Decisions about who, what, and how we cite are bound up with the need to demonstrate our scholarly abilities—or at least our ability to perform the part of a certain type of scholar. As my colleague Molly Rivers explains, our citations “prove we’ve done our homework” (Rivers 2021).

For students in doctoral programs in the US and Canada, qualifying exams (also known as quals, comprehensive exams, or comps, as I’ll refer to them in the rest of the text), often serve as an important checkbox that *must* be ticked. Whatever a program might call them, they typically entail a formal examination that students are required to pass to make the all-important transition from PhD student to PhD candidate (which means that in the eyes of the university, you’re prepared to undertake independent research). How the exams are structured varies from department to department, as does the rationale behind them. The consequences of failing these exams range, but it can mean no longer being able to continue your program. In recent years, some programs have opted to do away with them completely. However, those programs remain a minority.

In many PhD programs, comps mark a key hurdle. Comps are an academic rite of passage (Stewart-Wells and Keenan 2020)—an obligatory passage point (Star and Griesemer 1989). This makes for high stakes citation as a PhD student’s ability to continue in their program hinges on

passing these exams—on engaging with the ‘right’ literature in the ‘right’ way. It can be hard to find the wiggle room when the stakes feel so high, making comps another example of what Max Liboiron calls ‘citational politics in tight places’ (2022a). As a result, comps become a site where students learn how to *be* an ‘academic’—where “the reproduction of the same old bodies doing the same old things, is a result of *work* rather than being something that ‘just happens’” (Ahmed 2019, 168). **Or perhaps, could comps do otherwise** (Star 1990)?

In the chapter that follows, I’ll share with you a version of the blog post about comps that I produced as part of the CLEAR citational politics working group. As a PhD student in Integrative Conservation and Anthropology at the University of Georgia, I took comps in 2021 (spoiler: I passed). The process taught me a lot, and a lot of what I learned had nothing to do with what I was tested on. There have been ample critiques of comps that both question their effectiveness and their role in perpetuating inequities within the academy (Posselt et al. 2021; Stewart-Wells and Keenan 2020; Keenan and Stewart-Wells 2021; McLaughlin et al. 2024). However, my focus here isn’t on exams themselves, but rather I use comps as a case study of enacting citational politics. Through this case, explore how citation can be a site of possibility. I’ll delve into my own experience taking comps to discuss how joy eventually became an unexpected part of the process. Throughout the chapter, I use excerpts from my comprehensive exams to illustrate my points. I conclude with a call for finding joy in unexpected places, arguing that joy can be a form of rupture that can lead to *conocimiento*.

Stories and socialization: Preparing for comps

Attending to how scientific cultures function to normalize some bodies and behaviors while rendering others aberrant impacts all scientists, men and women, especially future scientists who desire something other than the prototypical disembodied, a-cultural fiction of scientific rationality (Subramaniam 2014, 173).

When I took comps, my department required us to select three ‘fields,’ or areas of scholarship, that we develop comprehensive bibliographies for. For each area, we also write a

‘field statement’ which is essentially a literature review. A students’ advisory committee uses these to come up with questions for three back-to-back days of testing. Each testing day consists of four hours of responding to closed-book questions that cover one of the areas. We later defend our responses verbally in front of our committee.

I started preparing for comps in 2020 shortly after CLEAR began their citational politics project. So, as I tried to identify my three *distinct* areas of concentration and put together my literature reviews, I was engaging in parallel conversations and collective experimentation in CLEAR that had me thinking about citational politics in new ways. This conjunction spawned a slew of questions, some generative...others not so much...

Who is (in/ex)cluded? How are categories drawn around bodies of work? Around bodies? Whose bodies? *Am I doing this right?* What counts as theory? As anecdotal? What even counts as a field? As knowledge? *Am I doing this right?* The documents only circulate among my committee, so does it even matter? If I do things differently, what will my committee say? How do I pass comps and not feel gross about it? *Am I doing this ‘right’?*

Question after question (re)surfaced in my mind as I tried to move forward to jump through the ever-glorious hoop that is comps. Taking a moment to step back and contemplate was often generative, but the carousel of insecurities wasn’t just taking a step back. Preparing for comps felt like someone grabbing my ankles and pulling them out from behind me, as I dramatically fell on my face, arms waving in slow-motion. I’ve spoken to numerous others about their own experience taking comps, and it seems mine is rather typical.

I can sum up the questions playing on repeat in my mind in one word...FEAR. Better yet, in two words—SOCIALIZED FEAR. It’s hard to move forward when you are constantly turning around, checking your back, questioning your steps. I could write this off as an individual failure of confidence on my part, and I frequently did (oh the joys of imposter syndrome, a structural problem not an individual one, I might add). But in taking one of those (productive) steps back, there’s more to it than that—it was something I built up in my head, but not something of my

own making. This became clearer as I read for my first area, “Higher Education and Graduate Socialization.” The following two paragraphs come from my field statement.

...[A]cademic disciplines and epistemic cultures reproduce themselves through the production of future generations (Delamont, Parry, and Atkinson 1997; Romero 2017). The socialization of doctoral students, in particular, has been identified as a primary process through which this occurs (Delamont, Parry, and Atkinson 1997; Austin 2002; Baker and Lattuca 2010; Weidman and Stein 2003; Lee and Boud 2009; Sala-Bubaré and Castelló 2017)...While graduate students are learning the skills and content knowledge necessary for participating as a member of their profession, **they are simultaneously learning and internalizing the profession’s norms, values, and ethics** (Baker and Lattuca 2010; Austin 2002; Weidman and Stein 2003; Margolis and Romero 1998; Sala-Bubaré and Castelló 2017; Blakeslee 1997)...

...Studies in higher education, sociology, and psychology have provided insights into this socialization process as experienced by graduate students. While it can be difficult for all students (Romero 2017), graduate education is not uniformly experienced nor is it identical across all disciplines and institutional contexts (Gardner 2008). Research has found that women and students of color face additional burdens (Romero 2017; Margolis and Romero 1998; Gardner 2008; Thomas and Ashburn-Nardo 2020; Puritty et al. 2017; Subramaniam and Wyer 1998). It is not surprising then that graduate school has been identified as a critical point of loss of underrepresented students in scientific fields (Ong et al. 2011). While formal graduate curricula have been shown to reproduce social inequality (Margolis and Romero 1998), research has demonstrated that it is often through informal mechanisms and interpersonal relations that inequality manifests (Gardner 2008; Ong et al. 2011; Brown et al. 2019). **Through the hidden curriculum of graduate education, inequality becomes subtly, and sometimes not so subtly, reinforced and consequently reproduced** (Margolis and Romero 1998; Romero 2017; Subramaniam and Wyer 1998). (Excerpt from my first field statement)

Part of the way that this reproduction occurs is through the discourse around what academia ‘is’—about what it means to be an ‘academic.’ Sometimes (e.g. comps) this discourse feels like the academic equivalent of bedtime stories about a boogeyman who’s out to get mischievous ~~children~~ grad students, so ~~children~~ grad students better behave. Or else. You better [behave/conform/assimilate/take your pick of terms here, but not your pick of how to be in the world] or else **you will fail**. These stories circulate through syllabi and citations. Through conference programs and faculty profiles. Through hallway chats and happy hours. These academic spaces are dominated by the ideas and practices of Anglo cishet men, (with a few Anglo

women dispersed throughout for some measure of ‘diversity’). Just take a look at the authors of the ‘foundational texts’ in a discipline or who’s considered canon, a space ripe for the colonization of thoughts (Wa Thiong’o 1998; Restrepo and Escobar 2005; Sundberg 2014; Todd 2016). There’s not a lot of space there for difference. As a result, the overwhelming impression pressed upon students is that to be a legitimate scholar, you must know the words and write in the ways of Anglo men. Or as Banu Sabramaniam remarks: “Resistance is futile! You will be assimilated” (2014, 180). This hidden curriculum¹ saturates the experience of graduate education and the citational politics that circulate throughout.

Expectations, both stated and perceived, surrounding comps serve to reproduce not just narrow disciplinary histories, but also restricted ways of *being* a ‘legitimate’ scholar. When writing my first two field statements, I spent so much time trying to do it the ‘right’ way, the way I thought it was ‘supposed’ to be done, that I ignored the fact that it didn’t feel *right*. I thought I had to write in that wonderfully sterile way that academics can be oh so good at. I thought I had to cite particular scholars, and in particular ways, or else. So, there they were in my bibliographies. There I was proclaiming and reproducing particular histories of disciplines, particular ways of being...But before we fall too far down the path of fatalism, I want to step back to a different part of my first field statement:

Studies of graduate education assert that **socialization is a two-way and dynamic process** in which graduate students both shape and are shaped by their research communities and the institutions they participate within (Austin 2002; Sala-Bubaré and Castelló 2017). Consequently, rather than a passive process, becoming an academic subject has been understood as “coming into agency” (Gullbekk and Byström 2018, 251)—a continual process “without a resolution or endpoint” (Moss et al. 2018, 53). Students’ identities as scientists and scholars are neither exclusively a matter of self-definition, nor solely “the result of how individuals are positioned and defined by the people around them” (Baker and Lattuca 2010). Thus, **both the reproduction of norms and practices, as well as resistance and the possibility of**

¹ Meaning the unwritten and sometimes unintended norms, values, behaviors, and other lessons that students learn through schooling.

transformation, are part of the academic socialization process (Duff 2010). (Excerpt from my first field statement)

Finding joy in comps (and that's actually not sarcasm)

When I write/read, I listen to music that allows me to concentrate in order to be as *efficient* as possible. I don't listen to the music that brings me joy, that fills me up, that lights me up. Today, I deviated from my well-established writing routine to listen to the Spotify playlist for *Dear Science and Other Stories* as I was reading the text. Bad Bunny. Trina. It did distract me; it made me *pause* to consider—what if I was concerned about the potential creativity lost, rather than efficiency gained? Instead of neoliberal definitions of productivity being the benchmark, what if it was possibility? *How* we read can matter as much as what we read (Liboiron 2020b; Dumit 2012). As *who* we read (Liboiron 2020b; McKittrick 2021; Todd 2016; Ahmed 2019). I'm left wondering, what is made possible when we start from different starting points? When we focus on the ambiguities and the mess rather than the separations? What becomes possible from *la rajadura* (Anzaldúa 2015, 79)? (Excerpt from my third field statement)

Something changed when I got to my third and final field statement—'Feminist and Anticolonial Conversations and Crosscurrents'. The bibliography I put together was mostly all of the things I really *wanted* to read or that had *inspired* the directions of my own research. My first few attempts at the review were as sterile and 'academic' as can be. But it just didn't make sense. It didn't fit. How could I write about the work of scholars doing all of these awesome transformative things in and through their writing, but not put a damn thing they're talking about into practice? I spent a lot of time thinking about this and feeling like I was going nowhere. Then I read the chapter "Footnotes (Books and Papers Scattered About the Floor)" from Katherine McKittrick's book, *Dear Science and Other Stories*. The note I wrote to myself after reading it proclaimed: "Reading this chapter was world-shattering in the most joyful kind of way." This text had me thinking about knowledge and citation in ways I hadn't before. It legitimated a different form of citational politics that made space for everything from citing twitter posts to Missy Elliot. It opened up **possibilities** for greater nuance in the form that citations can take and even the very purpose of using them.

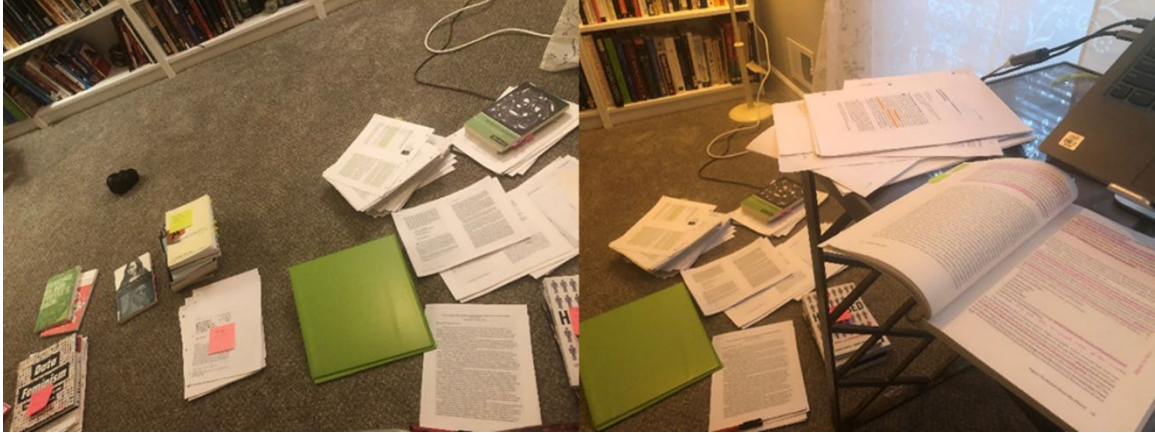


Figure 5.1 The state of my home office when I started reading “Footnotes (Books and Papers Scattered About the Floor)” (McKittrick 2021). I looked around the room and I had to laugh after reading the chapter title for the first time. Photos by Christina Crespo.

While Sara Ahmed’s often cited approach to citational politics follows the line of ‘I don’t cite white men’ (meaning white men as an institution, and not citing those whose work bolsters that institution) (2013). Katherine McKittrick takes a different approach, raising the point that the solution to exclusion might not be more exclusion. She states that “[u]nknowing does not seek or provide answer: the steady focus is, instead, on working out how to share ideas relationally” (McKittrick 2021, 17). Then she goes further to reimagine what citations are and what they can *do*— “What if citations offer advice? What if citations are suggestions for living differently? What if some citations counsel how to refuse what they think we are?” (McKittrick 2021, 19). Her words and the form that they took on the page gave me a different way for thinking about my comps bibliographies. She explains that...

The works cited are many and various divergent and overlapping texts, images, songs, and ideas, that may not be normally read together. The works cited, all of them, when understood as *in conversation* with each other, demonstrate an interconnected story that resists oppression. We do not have to agree with all the works in the works cited. We do not have to like all of the works in the works cited. We do have to trust that the works in the works cited are helping us understand and talk about and theorize how to know the world differently. (McKittrick 2021, 28)

Her text also inspired multiple other CLEAR members to approach citation differently which you read about in the previous chapter (Liu 2023; Liboiron 2022a).

So here I was all newly inspired, with the *Dear Science and Other Stories* Spotify playlist on in the background, and with very little time left until I had to send my last literature review to my committee. So, I just wrote the way I wanted to and stopped thinking about how I was supposed to be doing it. I started using citations as precedence (Narayan 2012, 5)—precedence for doing things differently, for not performing the kind of scholar I *thought* I had to perform to keep the boogeyman from my door. I started searching texts for spaces with some give and I decided to take up that space. I also took a different approach to structure my field statement, using footnotes to try to cultivate a conversation with the reader which I explained as the following:

Footnotes are one of these doings. Some of the authors discussed here employ footnotes to engage the reader in conversation (see Liboiron 2021 and McKittrick 2021 for examples)—a practice that I work to incorporate in this final field statement (which seems important given that a central assertion is the inseparability of theory and practice). Footnotes can act as spaces both within and outside of an academic text, Nepantla, a borderlands of sorts (Anzaldúa 2015). They can draw attention to the messiness and non-linearity of thought and practice that go into the work of transforming a text into something ‘academic’—tidy descriptions that show a thinker’s final destination while often eliding the path taken to get there (McKittrick 2021; Ahmed 2016). I use footnotes to make space for the mess inherent in knowledge production (Nagar 2014). As Gloria Anzaldúa asserts, writing is “an endless cycle of making it worse, making it better, but always making meaning out of the experience, whatever it may be” (1987, 73). (Footnote from my third field statement).

The strangest part was that I had fun writing it (or maybe it should be strange that this was so strange?). It was fun to write. I feel like I have to just keep repeating that to cement it into my brain. Being a social scientist can be fun! Working to change a shitty system can be joyful and not just an endless brick wall (Ahmed 2012; 2017; Liboiron 2021b)! Total revelation.

Now, when the time came to share what I wrote with my committee I was ready to go to battle and defend my approach, ready for all the push back to come my way because my literature review (and the bibliography it covered) looked nothing like the examples I had seen. I was ready for that bogeyman...It never came...My committee liked what I wrote. They told me that they thought I “found my voice”. This experience illustrated how so much of graduate socialization is

about the stories that circulate, that permeate everything, that enforce the rules of how to be an ‘academic,’ but that might not actually be set in stone.

Moving towards the point

Citation is a (re)productive tool (Ahmed 2013), and not just in that it reproduces some knowledge at the expense of others. Citational practices (and the knowledge regimes they perpetuate) are a means of replicating a particular type of scholar. Comprehensive exams represent a pivotal node in doctoral training—through the process students not only learn the citational practices necessary to pass, we learn *how to pass*—how to pass for a ‘legitimate’ academic. The socializing forces of the hidden curriculum reinforce and reproduce a particular kind of scholar (and all of the values and practices that go with it) which in turn are reinforced and reproduced by who is cited and how. This is especially salient during key passage points, like comps which govern the transition from ‘PhD student’ to ‘PhD candidate.’ As a result, citational politics fundamentally inform graduate socialization, including how legitimacy is conferred, how courses are taught, and how programs are structured.

However, citation can also be a tool for doing citation differently—for producing a different kind of scholar. Citations can serve as inspiration and precedence (i.e. xyz has been published in a scholarly journal and therefore it is a legitimate(d) practice!). Taking comps still sucked, and I by no means enjoyed everything in my bibliographies, but some of what I was reading inspired particular liberties and provided concrete citations to justify doing things differently than what I thought was expected of me, and I’ve carried these lessons forward in my academic practices. The experience showed that even in constrained spaces like comps, there might be some wiggle room (Liboiron 2022). Citations can be read as stories that illuminate possibilities for other ways of being in the world—other ways of doing academia (McKittrick

2021). Thinking in circles isn't always spiraling out—spiraling can be centripetal. It can move you towards the point.

Joy and rupture

The joy that came with writing my third field statement was in itself a form of rupture. That joy re-wrote the narratives of what I thought academic writing is and opened up possibilities for what it could be. Opened up possibilities for what kind of academic I could be. The learning that I'm describing here can be understood as a form of *conocimiento*. However, while I explained in chapter four that the pathway to *conocimiento* starts with a rupture or break, something different is happening here—it's starting with joy.

INTERLUDE FIVE. WRITING/RIGHTING WORLDS

"That's what writing is for me, an endless cycle of making it worse, making it better, but always making meaning out of the experience, whatever it may be" (Anzaldúa 1989, 73)

Rather than just the results of a project, writing is part of the research process. It is both a form of data and a method of inquiry. Writing can be a medium for thinking. It is a creative act, and by this I don't mean creative in the sense of a "creative writing" course (though it is that too). I mean that writing is a form of making (Anzaldúa 2015). As such, the writing process is more than just sitting down and plunking words onto a page. It's also the reading and researching that goes into those words, the citing of those ideas, the brainstorming and mind maps, the collaborations and conversations, the editing and revising, the care work that makes writing possible, the data collection and analysis, the thinking, the knowing, the being, and the doing. Needless to say, there's a lot of work that goes into writing and writing does a lot of work.

At some point during my PhD program (well less a point, more a process), writing changed for me. Instead of being an outlet, a means of expression, a vehicle for sharing my ideas, it became something else. Something difficult, but in a different kind of way. I feel a pressure in the back of my skull that dulls my progress, slows it down to a halt as the same thoughts play over and over and over again on repeat. Am I doing this right? What do 'they' want from me? How do 'they' want me to do it?

Like many, somewhere in my training I picked up the sentiment that I was *supposed* to be writing in a particular kind of way, and that way of writing wasn't what came naturally to me. I began to feel like I needed to please (or at least appease) others in my writing. Every letter, every space, every paragraph, became a question. A second-guessing of what I thought I knew. I started

trying to write by anticipating, or at least attempting to anticipate, what I thought my readers ~~expected~~ required of me. Needless to say, this took a bit of the joy out of writing. It even took the monotonous tapping of keys out of writing, as the writing became silently staring at a blank page trying to figure out the *right* way to write.

I want to try writing differently. I want to *approach* writing differently. With a new perspective (or at least, new for me). I want to think about writing as just another form of making. I can make things. More importantly, possibly, I *enjoy* making things. It brings me joy. It fills me up. It gives me life. All the things that writing has started to take away. But I have a sneaky suspicion that finding joy in writing again might be helpful for my readers as well. I know I'd rather read something that brought the author joy than something that felt like slogging through sludge.

Let me back up a moment though and tell you about what inspired this little experiment. I think it might help you, the reader, understand where I'm coming from slightly more. It started with a conversation with my partner a couple of days into a week-long writing workshop. Inspired by the sessions, I decided that I wanted to try and tackle the sterility that had infiltrated my writing. I wanted to bring in some creativity into my dissertation. However, by the end of the day, I was frustrated, to say the least, and mainly with myself.

That night, I found myself grumbling to my partner about how seemingly impossible writing had become once I was actually attempting to be creative with it...

"I'm a reasonably creative human—I make things. Like all the time! I can reupholster chairs with a staple gun, some hot glue, a scrap of fabric, and a can of paint. I draw. I make bath products. I cook. We make jewelry—and I enjoy doing all of these things! Why is writing so different?¹"

¹ I'm not making any claims here about the quality of those projects, just that I'm regularly able to complete them and enjoy doing it in the process.

Then my partner made quite the astute observation—when I make things, I just go into it without a plan or direction. Much to my partner’s chagrin, even when we make things together, I don’t sketch it out or even talk through it first. I get out some materials and see what the fuck happens. I just do it.

Academic writing on the other hand, I approach completely differently, because of course I do. I follow all of the prescribed advice about planning and organizing my writing, about structuring and tracking the time I dedicate towards it. My writing was nothing but spreadsheets and neatly ordered flow charts...But what if it wasn’t?

I started to wonder—what if I approached writing the same way I approach all other forms of making? What if I developed a different affective orientation to writing that actually worked with how I work? One that made space for, or even encouraged, enjoyment (gasp!)? How would the process change? The products? What if I decided to *act* instead of react (Anzaldúa 1987)?

So, the next day of the writing workshop I took a different approach. I set up my laptop in my ‘maker space,’ surrounded by watercolor pens, jars of brushes, and stacks of sticky notes,



Figure I5.1 Writing is Making by Christina Crespo.

with headphones nestled in my ears playing all of my favorite songs. Songs that inspired me. That hyped me up. That made me want to create. I started jotting down all of the song lyrics on the sticky notes and spread them across the table and they eventually turned into the drawing above.

I enjoyed making the drawing, I did. Quite a bit. I was all jazzed and ready to go “write my dissertation!” The only problem was, I still didn’t know *how*. How do you transform writing into making, while still writing out words, in a linear order, across a page, in a way that complies with dissertation formatting requirements? Thinking that perhaps all of the rigidity I had been using to govern my writing might be the point at issue, I tried going in the opposite direction—I tried freewriting. I’ve included some excerpts to illustrate a point (I promise I have one and I’m not just subjecting you to my freewriting for the fun of it). Just go with me on this one for a moment...

June 9, 2023

Getting into the zone. The writing zone. The place where words continuously appear on the screen in front of you as your fingers move across tapping keys. A place where ideas are given space to move freely, from abstracted thoughts to words on a page that can be read by others. It’s a place I’ve struggled to find as of late and I think it’s safe to say that a lot of the hesitancy that has been keeping my keyboard silent is the product of what Max Liboiron has aptly referenced as “socialized fear” in a few lab meetings. It’s the result of years of being disciplined by disciplines—of pedagogical orientations towards writing that weigh a student’s worth through grades assigned to things written on a page (and of course, the joyous encounters with the reviewer twos of the world).

The result is a hesitation, an insecurity—self-doubt that seeps into the tiny gaps and spaces between all of the thoughts in my mind. That lurks with each pulse of the space bar, rearing its head for deletion by deletion. How we feel about writing matters.

Self-doubt is insidious. It is also often a product of Otherness in academia. Of not fitting. Of failing to fit. Of failing. Of needing to do things the ‘right’ way. And of failing to do so. Even in a space like CLEAR, with all of the resources dedicated towards my success, doubt doesn’t disappear. The years of disciplining require constant unlearning. The experiences of a student are like building watercolors on a page. Layer after layer may change the color, but you can’t erase what’s underneath. It shines through, sometimes leaving you with a muddy mess. So how do you do things differently when you already occupy a position marked by difference? Perhaps, you do it in community—with community?

I wanted to approach writing differently, however, unlearning is hard and shockingly, just throwing away outlines and writing logs didn’t get me anywhere. I had good intentions, but that

wasn't enough. As I continued my increasingly futile attempts towards writing, I kept telling myself, "Just keep writing." Write *more*. Keep pushing 'forward.' Even though I knew it wasn't working for me. Even though the only progress I was making was towards becoming an increasingly curmudgeonly human being...and perhaps slightly delirious.

At some point in this story, I stumbled back into the world of knowledge management, of *personal* knowledge management. Infrastructures, protocols, etc. were apparently needed.

August 9, 2023

I'm hitting a wall. Or maybe crashing is a better description? Crashing into a wall. There you go. That's the one. Sara Ahmed's brick wall? So, let's try a little bit of the work around resistance thing. I'm struggling with what I was trying to do, so TA DA! I'm trying something else. Freewriting. That magical thing where I just write whatever spews out of my brain and hope for the best.

Hope.

That's definitely where I am at the moment. Hope. I'm hoping that this seemingly magical system of the '**Zettelkasten**' will indeed be just that. Magical. Or maybe tangible is a better word here? I am hoping that it's the tool I need to make sense of all the mess of my notes. The mess of my brain. It also gives me hope that maybe I can do academia—apparently the fact that I can't remember all of the things that I've ever read isn't the problem. The problem is that I can't easily access all of my notes on all of the things I've ever read—all of my ideas.

It's an issue of infrastructure, not ability.

The pressure to do things faster. To just do it. Made me cut corners. Compelled me to keep pushing 'forward' against Sara Ahmed's brick wall. It wasn't really getting me anywhere other than frustrated. It didn't work for me. For my brain.

Freewriting gives me the sensation of moving forward. But am I though? Am I moving? And if I am, is it actually forward. Or am I just laying brick on brick on top of myself as I add more and more material that I don't know what to do with? Great question.

Back to hope though. Here's to hoping that what I'm doing now lays bricks for the foundation of my dissertation instead.

I'm not sure how I stumbled on it, but the Zettelkasten or slip-box method (Ahrens 2022) was a total game changer for me. It provided the infrastructure that I needed to do things differently. A Zettelkasten is a personal external knowledge management system that allows you

to store and connect your ideas over time. Rather than focus on a single project, you collect notes along the way. Creating connections between heterogenous ideas is easier when you can see things in the concrete form of your notes.

The Zettelkasten is premised on the foundation that knowledge gains value in context—in connection to other knowledge. This approach differs from an archive in that rather than creating an organizational structure in advance (such as file folders), the organization emerges through the connections you create over time. This also means that the structure will likely change. Each note is a single thought so that these can be connected and combined into new ideas. As a result, the Zettelkasten is less a storage system and more a thinking partner (Ahrens 2022).

Switching to the Zettelkasten method and the platform I use to store it (Obsidian) wasn't exactly easy, since it is such a different way to approach knowledge management than I had done in the past (i.e. lots of notebooks, post-its, word docs, and Workflowy notes). Writing though, did become easier after I started using this method. The infrastructure changed my affective orientation to writing. The infrastructure made doing things differently possible.

CHAPTER 6. CONCLUSION: ENACTING EVERYDAY PRACTICES, ENACTING CHANGE

This dissertation is about imagining and enacting *possibilities*. This sounds like such wonderful work! But in truth, sometimes those possibilities may just be about finding a different way to take out the trash. Sometimes those possibilities rub up against years of training and socialized doubt. Sometimes that rubbing leads to a rash. Rashes may not sound like what we want to be orienting ourselves towards but stay with me here for a moment. These often-unwanted by-products of action can also be sites for work that needs doing.

Friction is what happens when established ways of knowing, doing, and being rub up against each other (Tsing 2005). Let me explain. I'm a runner. When I first started running in my mid-twenties, I quickly became intimately acquainted with runner's rash. It's the result of repetitive friction between skin (i.e. chaffing). It's the result of work. Of your body working (or not working, depending on how you see it). It can be your body's way of telling you something, even though the form that message takes may not be very welcome. Even though that message is easy to misinterpret...For me, my first interpretation was, "yup—my body is definitely not made for this. Far too much jiggling to run far."

That was the wrong message. I was not the problem, nor was it the activity of running itself. My choice of apparel was the point at issue. It was the tools I was choosing to help me in the work of running. I just needed to get different pants and TA-DA! Problem solved. I bought new pants and instantly I was half-marathon ready! Yeah, nah. But it did indeed stop the chaffing, so that I could do the work of training. A simple change in the material I wore opened up possibilities. It made friction bearable.

CLEAR demonstrates how small changes to everyday doings can add up. By doing things differently, CLEAR opens up possibilities for what science is and could be. While compromise and tensions are part of the process, experiencing these different ways of doing can be a form of joyous rupture that engenders ethical forms of learning and transformative change.

Now I want to circle back to the introduction and the orientation towards justice I discussed there. What can we learn from CLEAR about social justice work? By way of a conclusion, in the sections that follow, I tackle some of the common myths around justice work to illustrate the lessons from CLEAR that you might walk away with. Bringing the previous chapters together, I focus on four myths centered on the topics of hierarchies, boundaries, intimacy, and joy.

Structure

Myth one: Horizontality or bust

One of the common myths around social movements and activism is that horizontal organization is necessary for enacting social justice. By horizontal, I mean everyone has the exact same amount of power, with no one above or below anyone else. Everyone is equally “in charge.” That is a lovely idea, however, there are two issues at play. First of all, true horizontality is in many ways a fantasy. What we’ve learned from power and positionality is that there are things at play that are beyond control, whether we like them or not. For example, a professor will always have more power than a student. Importantly, if the differences aren’t acknowledged, that also means that they can’t be addressed. The second point is the one most relevant to CLEAR, having a ‘chain of command’ isn’t necessarily a bad thing. It doesn’t have to translate into unjust relations. It’s all about how and *why* that power structure is the way it is.

Somebody needs to drive the bus

Sometimes hierarchy is confused with bad politics. But that’s also how you run a feminist, anti-colonial lab. Hierarchy also steers things in certain ways. Not inherently bad but something to be accounted for. (CLEAR meeting notes, June 19, 2020)

While horizontality can work in some organizations, it isn't the only way to do things and to do them well. As I've shown across the dissertation, CLEAR is an intentional hierarchy¹. Instead of thinking about hierarchy and potentially jumping to notions of injustice I want you to think about it like a bus. Even if everyone on that bus is on the same team, somebody needs to drive the bus or it isn't going to go anywhere. And yes, that someone might rotate, but at any one point there always needs to be *someone* driving the bus. In CLEAR, Max drives the bus. By doing so, Max is *accountable* to the lab and the relations wrapped up in it.

In CLEAR, the hierarchy isn't premised on power but rather is a way to account for power that cannot be erased (i.e. Max will always have more power as a faculty member than a student) (Liboiron, Melvin, and Morgan 2024). As Jo Freeman asserts, "structurelessness becomes a way of masking power" (1972). Moreover, in CLEAR, the structure is explicit which allows all members to know how they fit in and the expectations of them. This makes for a safer space than one premised on a false horizontality where the rules of play are hidden beneath the idea that everyone is exactly the same (Freeman 1972).

Boundaries

Myth two: Radical inclusivity for the win!

In theory, radical inclusivity sounds like an amazing idea and in some spaces it likely is. It means welcoming all people despite differences. For example, a university classroom is an excellent space to enact radical inclusivity since there aren't boundaries to entry beyond self-selection (and all those boundaries to getting into the university in the first place, and of course pre-reqs, and all of the structural barriers that come with both). However, the idea of radical

¹ As a reminder, Max is ultimately accountable for everything that happens in the lab, followed by the lab manager. Everyone else in the lab is equal in terms of responsibility and decision-making. This shallow hierarchy is central to how CLEAR operates (Liboiron, Melvin, and Morgan 2024).

inclusivity as a universal good requires some consideration. Welcoming everyone means welcoming *everyone*. Even those who would cause harm.

Boundaries are good, amazing even.

CLEAR works because of boundaries—strictly enforced boundaries in the form of hiring and collective consent. Max explains the role of these boundaries in a training video,

“So over time, we’ve built a safer space in our lab for people who wouldn’t normally find themselves in a science lab. And so that means that our very inclusive lab is also extremely exclusive. It is not radically inclusive. Not everyone can come in. Saying no is always also saying yes to something else. So saying no to people who are transphobic is a way of saying yes to trans rights, for example, in our lab.” (Liboiron, Melvin, and Morgan 2024)

Max’s quote highlights the importance of boundaries in justice work. Through the hiring process, Max and the lab managers act as the primary gatekeepers to the lab. Importantly, for CLEAR, “[w]e hire on values, not skills” (Liboiron, Melvin, and Morgan 2024). This means that during the hiring process, the committee is focused on finding individuals who will contribute to the collective and its shared values². Skills and content-specific knowledge can be taught, after all. By being selective about who comes in, CLEAR is able to better maintain the collective and keep the lab as a safer space.

For those working to collaborate with CLEAR, Max acts as the first filter, making decisions on whether the person is likely to cause harm towards the current members of CLEAR (if it seems likely, the person is never introduced to the lab). The collective consent process then acts as the second filtration, with the collective as a whole working to make decisions about the well-being of the group. Potential collaborators have the opportunity to share a proposal with the lab and answer any questions that lab members have about it. The lab weighs the ask with any potential harm that might be posed to the lab or to lab members by the proposed work. There is a great

² For more about CLEAR’s hiring process, see the CLEAR training video “Hiring, Firing, and Hierarchies, Oh My!”

amount of care and generosity built into this process. From what I've seen, the collective can be understandably cautious about who is permitted entry into the lab space. The boundaries that CLEAR maintains, however, make CLEAR possible.

I want to take a moment to reiterate that *all* labs are informed by values, though not all labs are explicit about it. Numerous "inclusive" spaces can be by their very design, exclusive. This is not at all uncommon in dominant science laboratories (Ahmed 2012; McGee and Robinson 2019). However, by maintaining boundaries in CLEAR, the lab is able to work towards their collective vision informed by their stated values. Keeping some folks out is how others are welcomed in. As a result, CLEAR is able to create a space where people who are often marginalized in spaces of science are encouraged and supported to thrive.

Intimacy (or another form of boundaries)

Myth three: Intimacy is an inherent good

Sometimes there can be an expectation within feminist spheres and ethnographic research that intimacy and full transparency are the gold standard. That you *should* bring your whole self, personal life and all, into collective spaces. That the more personal, the more intimate, the better. However, is that always true? Kimberly Kay Hoang has called attention to the expectation that feminist researchers are fully transparent about their positionality in their work. She argues that this expectation is "a testament to the unspoken differential rewards and consequences for those racialized as "outsiders" and "insiders" in relation to their sites of study" (Hoang 2015). Her work calls into question the unevenness that's embedded within expectations of transparency and intimacy.

Moreover, in the context of ethnographic methods, Rebecca Hanson and Patricia Richards have asserted that "[w]hile recognizing that intimacy can be advantageous, we need to present it as one of many ways by which to build strong relationships" (Hanson and Richards 2019, 181).

They recognize the emotional labor and inherent risks that go into intimacy and assert that there are other ways to cultivate good research relations. This is yet another instance where boundaries can actually be a good.

Intimacy isn't necessary (nor necessarily good)

One of the things about CLEAR that is central to how the lab functions is the role that intimacy does and does not play within the lab space. It's hard to put your finger on it exactly, but folks in the lab are both highly aware of the emotional labor that they ask of others and the problems with expectations of intimacy. While you are welcome to bring your whole self to the lab (as long as you "mind your trauma manners"³, you aren't expected to. This is explicit in the collective agreement found in the lab book which states "**Your Story, Your Choice:** You decide which stories to share and which to keep. No one is expected to educate anyone else by sharing their experiences, traumas, or stories" (CLEAR 2025, 63). I've already given the example of using weather ball as a check-in that doesn't *require* lab members to reveal personal details, but the expectations around intimacy also came up during the interviews.

Folks in the lab aren't necessarily close friends, but they deeply respect one another.

Melissa Morgan⁴ reflected on this point specifically...

...not everyone is friends, per se. But everyone's expected to respect each other.

And I was like, 'Oh my gosh, everyone's going to be mean? And just nobody will want to talk to me?' But even yesterday, Max came to help me with some cabinet screws in the lab. And they mentioned that they don't consider themselves friends with their juniors because of the echelons involved with position. I reflected and saw that there

³ The following is included as one of the guidelines for safer collective conversations in the lab book: "**Watch your trauma manners:** While being cavalier or flippant about genocide, slavery, racism, sexism, ableism, rape, etc. can be an individual coping mechanism, it's not an ideal fit in collectives where there are survivors. We'll be talking about these things in a way that respects the heaviness that we're laying on our peers, including asking for consent first" (CLEAR 2025, 63).

⁴ "My name is Melissa Morgan. Pronouns are she/her, and I am a full-time lab tech at CLEAR, for sample processing involved with the plastic pollution monitoring project in Nunatsiavut. I am an immigrant from Ghana in West Africa and came to St. John's on the island of Newfoundland—the ancestral homelands of the Beothuk and Mi'kmaq—in 2019 for studies. This April 2023, I finalized my Chemistry bachelor's degree!"

are unhealthy biases that could develop in these cases and even between work friendships in lateral positions. So, I'm understanding more of the nuances of being friendly (as in having deeply close relationships with people) and just being generally respectful (as opposed to being rude). **Essentially, I feel like I get along well with everyone in the lab. But I don't feel like I have to watch Netflix movies with them every day to respect their identities and perspectives.** Whereas outside of CLEAR, you may find lab environments where if you don't talk as much, or you're not very open to share aspects of yourself with others, you become a pariah. And suddenly everyone's huddling in a corner and always talking about you (laughing), and stuff like that. **But here, I don't feel judged for my personal or social predispositions.** And I think the values are set up so that nobody feels judged for that. Instead, you more so invite critique for demonizing others' social predispositions and identities, which I feel is very important. **The sort of mindset where you only criticize actions and not people is something that I find really beautiful, something that I am learning a lot more about.** (Morgan 2023)

Her reflection highlights the value in *not* expecting intimacy within a collective space and the relations within it. She also calls attention to how this differs from other lab spaces that she's been in. Riley Cotter⁵ similarly reflected on how different CLEAR feels from other spaces.

"But then after a while, it started to feel less like other science-y places and more like just **a space where you feel comfortable.** And I don't know how to explain that because it's not like a group of friends because I feel like everyone knows it's a workspace...but **it's also a different kind of collegial.** So, it just feels different. There's nothing really that I can compare it to because it's not close to a group of friends or a science lab or family or anything else. It's just different. It's a science lab if you washed away all the BS of competitive, masculinist, shitty, lying academia." (Cotter 2023)

His quote calls attention to the fact that intimacy isn't necessary for comfort and collegiality. Friendships are not what's central, how lab members treat each other is.

Joy

Myth four: It's always going to be coming up against a wall.

I've already mentioned Sara Ahmed's brick wall a few times but I want to circle back to it again, here at the very end (2012; 2017). Sara Ahmed fairly describes diversity work, feminist

⁵ "My name is Riley Cotter. My pronouns are he him I am a settler born and raised and currently work from the island of Newfoundland which is the ancestral homeland of the Beothuk and the Mi'kmaq and I'm a master's student at CLEAR."

work, work of coming up against an institution, as coming up against a brick wall. She explains how working towards change can feel like an impossibility, as coming up against institutions can be like smashing yourself up against a solid, material wall. I don't know about you, but that description of justice work doesn't seem to leave much room for joy or anything even vaguely resembling it. CLEAR director, Max Liboiron addresses this theory of change in their book, stating that...

“...if capitalism, the university, etc. are hard monoliths and all we can do is dash our bodies upon them, then the only form of activism is to become a bloody body. There is a greater diversity of activism. David and Goliath is a stupid model for change.”
(2021b, 130)

CLEAR works from a different model of justice than the brick wall approach. CLEAR's theory of change places emphasis on enacting values through everyday practices as a way to enact good. By critiquing existing practices and, importantly, enacting alternatives CLEAR prefigures what science is and could be.

Social change can start from and end with joy.

CLEAR's prefigurative approach to enacting justice doesn't feel like smashing against a brick wall time and again. By creating a collective space where science is done differently, is different, CLEAR has also created a joyful space. This is something that Erdanya Anderson⁶ brought up during a lab meeting, that being in a space like CLEAR is a joyful practice.

Rather than rewarding yourself for doing work, making the work itself rewarding can create a positive feedback loop. Ahrens compares this to the difference between exergonic and endergonic reactions: in the first you need constant energy to keep the process going; the second,

⁶ Erdanya Anderson (she/her) is mixed Kanyen'kehá:ka (Mohawk) and settler descent with family roots in Tyendinaga Mohawk Territory. Originally from Barrie, ON, Erdanya now resides in Toronto on the traditional lands of the Haudenosaunee, the Mississaugas of the Credit, the Anishnabeg, the Chippewa, and the Wendat people. She holds an MA in Philosophy from the University of Toronto where she studied research ethics, specifically examining the intersection of the Tri-Council Policy Statement 2022 (TCPS-2) and Indigenous research ethics guidelines.

once catalyzed, happens on its own, *creating* energy in the process (2022, 49). This doesn't mean that the work isn't difficult or taxing, but it can be enjoyable—it can fill you up instead of suck you dry. I feel like this bears repeating...justice work can fill you up. It can be joyous work. If you have the right structures in play.

What's next?

CLEAR provides a case study for doing science differently, though it doesn't provide a one-to-one model. CLEAR's institutional context and other environmental facilitators mean that not everything CLEAR does will be transferable, however, I hope you found reading about CLEAR's work inspiring. That it sparked ideas for what everyday doings you might do differently within your own spheres of influence.

If you compared how I describe the lab in my original research proposal to how I describe it in this dissertation, you would notice a clear shift in my writing. Being a part of CLEAR is responsible for that shift. It's not just that I want to share how awesome it is or fan girl all over the place. But rather, it's that I have a more expansive understanding of what's possible (and permissible) within academic spaces, thanks to CLEAR. Working in the lab (and with lab members) has broadened my understanding of academia in ways that have changed how I think, feel, write, and teach. This process of internal shifts is central to understanding how science might change.

Remember, there is no single "good," so you need specificity to work towards justice (sometimes goods may even be at odds with each other). You can't please everyone, so you need to make decisions about what to reproduce and what to transform. However, change can be oriented towards, rather than against. If you are only pushing against something, that doesn't actually tell you what we *should* be doing. Just what not to do. So, onwards!

REFERENCES

- Ahmed, Sara. 2012. "On Being Included: Racism and Diversity in Institutional Life." In *On Being Included*. Duke University Press. <https://doi.org/10.1515/9780822395324>.
- . 2013. "Making Feminist Points." *Feministkilljoys* (blog). September 11, 2013. <https://feministkilljoys.com/2013/09/11/making-feminist-points/>.
- . 2017. *Living a Feminist Life*. Duke University Press.
- . 2019. *What's the Use?: On the Uses of Use*. Duke University Press.
- Ahrens, Sönke. 2022. *How to Take Smart Notes: One Simple Technique to Boost Writing, Learning and Thinking*. Sönke Ahrens.
- Anzaldúa, Gloria. 1987. *Borderlands = La Frontera: The New Mestiza*. Aunt Lute Books.
- . 1990. *Making Face, Making Soul/Haciendo Caras: Creative and Critical Perspectives*. San Francisco: aunt lute foundation.
- . 2015. *Light in the Dark = Luz En Lo Oscuro: Rewriting Identity, Spirituality, Reality*. Duke University Press.
- AORTA. 2017. "Anti-Oppressive Facilitation for Democratic Process: Making Meetings Awesome for Everyone."
- . n.d.-a. "Homepage." Accessed December 13, 2024. <https://aorta.coop/>.
- . n.d.-b. "Theory of Change." Accessed December 13, 2024. <https://aorta.coop/theory-of-change>.
- Austin, Ann E. 2002. "Preparing the Next Generation of Faculty: Graduate School as Socialization to the Academic Career." *The Journal of Higher Education* 73 (1): 94–122. <https://doi.org/10.1080/00221546.2002.11777132>.
- Baker, Vicki L., and Lisa R. Lattuca. 2010. "Developmental Networks and Learning: Toward an Interdisciplinary Perspective on Identity Development during Doctoral Study." *Studies in Higher Education* 35 (7): 807–27. <https://doi.org/10.1080/03075070903501887>.
- Ballard, Dawna, and Felipe Gómez. 2006. "Time to Meet: Meetings as Sites of Organizational Memory." *Parker, Crawford and Harris (Eds.)(2006), Time and Memory*, 303–14.
- Barad, Karen. 2007. "Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning." *Duke Up*.

Benjamin, Ruha. 2016. "Racial Fictions, Biological Facts: Expanding the Sociological Imagination through Speculative Methods." *Catalyst: Feminism, Theory, Technoscience*.
<https://oar.princeton.edu/handle/88435/pr1kc67>.

Bernard, H. Russell. 2006. "Research Methods in Anthropology: Qualitative and Quantitative Approaches / H. Russell Bernard.," January.

Blakeslee, Ann M. 1997. "Activity, Context, Interaction, and Authority: Learning to Write Scientific Papers In Situ." *Journal of Business and Technical Communication* 11 (2): 125–69.
<https://doi.org/10.1177/1050651997011002001>.

Bowker, Geoffrey C., and Susan Leigh Star. 2000. *Sorting Things Out: Classification and Its Consequences*. MIT Press.

Brown, Lindsay, Alissa M Manolescu, Laura Provolt, Aspen Robinson, and Kecia Thomas. 2019. "Understanding Barriers to Diversifying STEM Though Uncovering Ideological Conflicts." In *Diversifying STEM: Multidisciplinary Perspectives on Race and Gender*, 209–29. Rutgers University Press.

Burrell, Jenna. 2009. "The Field Site as a Network: A Strategy for Locating Ethnographic Research." *Field Methods* 21 (2): 181–99. <https://doi.org/10.1177/1525822X08329699>.

Busey, Christopher L., and Carolyn Silva. 2021. "Troubling the Essentialist Discourse of Brown in Education: The Anti-Black Sociopolitical and Sociohistorical Etymology of Latinxs as a Brown Monolith." *Educational Researcher* 50 (3): 176–86. <https://doi.org/10.3102/0013189X20963582>.

Chattoo, Caty Borum, and Lauren Feldman. 2020. *A Comedian and an Activist Walk into a Bar: The Serious Role of Comedy in Social Justice*. Vol. 1. University of California Press.

CLEAR. 2021a. *CLEAR Lab Book: A Living Manual of Our Values, Guidelines, and Protocols*. V.03. St. John's, Newfoundland and Labrador: Civic Laboratory for Environmental Action Research, Memorial University. <https://doi.org/10.5281/zenodo.5450517>.

———. 2021b. "Methodological Projects." January 3, 2021.
<https://civiclaboratory.nl/methodological-projects/>.

———. 2021c. "Plastics and Wild Food Projects." January 7, 2021.
<https://civiclaboratory.nl/plastics-wild-food-projects/>.

———. 2021d. "Starting CLEAR, Maintaining CLEAR." December 30, 2021.
<https://civiclaboratory.nl/2021/12/30/starting-clear-maintaining-clear/>.

———. 2025. *CLEAR Lab Book: A Living Manual of Our Values, Guidelines, and Protocols (Living Document)*. St. John's, Newfoundland and Labrador: Civic Laboratory for Environmental Action Research, Memorial University. <https://doi.org/10.5281/zenodo.5450517>.

———. n.d.-a. "Homepage." Accessed January 25, 2025. <https://civiclaboratory.nl/>.

———. n.d.-b. "Visual Verification of Plastics (VVOP!)"

Collins, Patricia Hill. 1986. "Learning from the Outsider within: The Sociological Significance of Black Feminist Thought." *Social Problems* 33 (6): s14–32.

———. 2019. *Intersectionality as Critical Social Theory*. Duke University Press.

Cornish, Flora, Jan Haaken, Liora Moskovitz, and Sharon Jackson. 2016. "Rethinking Prefigurative Politics: Introduction to the Special Thematic Section." *Journal of Social and Political Psychology* 4 (1): 114–27. <https://doi.org/10.5964/jspp.v4i1.640>.

Cotter, Riley. 2023. Interview with author, transcript, St. John's, Newfoundland, October 13, 2023.

"Definition of Interlude." 2025. In *Merriam-Webster*. <https://www.merriam-webster.com/dictionary/interlude>.

Delamont, Sara, Odette Parry, and Paul Atkinson. 1997. "Critical Mass and Pedagogic Continuity: Studies in Academic Habitus." *British Journal of Sociology of Education* 18 (4): 533–49. <https://doi.org/10.1080/0142569970180404>.

Delgado, Richard. 1989. "Storytelling for Oppositionists and Others: A Plea for Narrative." *Michigan Law Review* 87 (8): 2411–41. <https://doi.org/10.2307/1289308>.

Dhamoon, Rita. 2015. "A Feminist Approach to Decolonizing Anti-Racism: Rethinking Transnationalism, Intersectionality, and Settler Colonialism." *Feral Feminisms* 4 (1): 20–37.

D'ignazio, Catherine, and Lauren F. Klein. 2020. *Data Feminism*. MIT press.

Downey, Gary Lee. 2021. "Critical Participation: Inflecting Dominant Knowledge Practices through STS." In *Making and Doing: Activating STS through Knowledge Expression and Travel*, edited by Gary Lee Downey and Teun Zuiderent-Jerak, 219–43. Cambridge: MIT Press.

Downey, Gary Lee, and Teun Zuiderent-Jerak. 2017. "Making and Doing: Engagement and Reflexive Learning in STS." In *Handbook of Science and Technology Studies*, edited by Ulrike Felt, Rayvon Fouché, Clark A. Miller, and Laurel Smith-Doerr, 4th ed., 223–50. MIT Press.

Duff, Patricia A. 2010. "Language Socialization into Academic Discourse Communities." *Annual Review of Applied Linguistics* 30:169–92.

Dumit, Joe. 2012. "How I Read." *Dumit Blog* (blog). September 27, 2012. <https://dumit.net/how-i-read/>.

Edward, Allen. 2023. Interview with author, transcript, St. John's Newfoundland, October 18, 2023.

Escobar, Arturo. 2007. "Worlds and Knowledges Otherwise: The Latin American Modernity/Coloniality Research Program." *Cultural Studies* 21 (2–3): 179–210. <https://doi.org/10.1080/09502380601162506>.

Fausto-Sterling, Anne. 1992. "Building Two-Way Streets: The Case of Feminism and Science." *Nwsa Journal* 4 (3): 336–49.

- Freeman, Jo. 1972. "The Tyranny of Structurelessness." *Berkeley Journal of Sociology*, 151–64.
- Gardner, Susan K. 2008. "Fitting the Mold of Graduate School: A Qualitative Study of Socialization in Doctoral Education." *Innovative Higher Education* 33:125–38.
- Gibson-Graham, J.K. 2008. "Diverse Economies: Performative Practices for 'other Worlds'." *Progress in Human Geography* 32 (5): 613–32. <https://doi.org/10.1177/0309132508090821>.
- Giordano, Sara. 2014. "Scientific Reforms, Feminist Interventions, and the Politics of Knowing: An Auto-Ethnography of a Feminist Neuroscientist." *Hypatia* 29 (4): 755–73.
- Gower, Katherine, Llewellyn Cornelius, Raye Rawls, and Brandy B. Walker. 2020. "Reflective Structured Dialogue: A Qualitative Thematic Analysis." *Conflict Resolution Quarterly* 37 (3): 207–21. <https://doi.org/10.1002/crq.21271>.
- Graeber, David. 2009. *Direct Action: An Ethnography*. AK Press.
- Gullbekk, Eystein, and Katriina Byström. 2018. "Becoming a Scholar by Publication – PhD Students Citing in Interdisciplinary Argumentation." *Journal of Documentation* 75 (2): 247–69. <https://doi.org/10.1108/JD-06-2018-0101>.
- Hanson, Rebecca, and Patricia Richards. 2019. *Harassed: Gender, Bodies, and Ethnographic Research*. Univ of California Press.
- Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14 (3): 575–99.
- . 2013. *Simians, Cyborgs, and Women: The Reinvention of Nature*. Routledge.
- Harding, Sandra. 1989. "Is There a Feminist Method." In *Feminism and Science*, 8–32. Routledge.
- . 1995. "'Strong Objectivity': A Response to the New Objectivity Question." *Synthese* 104:331–49.
- . 2016. "Latin American Decolonial Social Studies of Scientific Knowledge: Alliances and Tensions." *Science, Technology, & Human Values* 41 (6): 1063–87. <https://doi.org/10.1177/0162243916656465>.
- Harris, Janessa. 2023. "The Importance of Researching with Pencils, Not Markers | The Classic Journal." *The Classic Journal* 9 (1). <https://theclassicjournal.uga.edu/index.php/2023/05/13/the-importance-of-researching-with-pencils-not-markers/>.
- Harrison, Faye V. 1995. "Writing Against the Grain: Cultural Politics of Difference in the Work of Alice Walker." In *In Women Writing Culture*, edited by Ruth Behar and Deborah A Gordon, 401–27. University of California Press.
- Hartnett, Tim. 2011. *Consensus-Oriented Decision-Making: The CODM Model for Facilitating Groups to Widespread Agreement*. New Society Publishers.

Haug, Christoph. 2013. "Organizing Spaces: Meeting Arenas as a Social Movement Infrastructure between Organization, Network, and Institution." *Organization Studies* 34 (5–6): 705–32. <https://doi.org/10.1177/0170840613479232>.

Haug, Christoph, Dieter Rucht, and Simon Teune. 2013. "A Methodology for Studying Democracy and Power in Group Meetings." In *Meeting Democracy: Power and Deliberation in Global Justice Movements*, 23–46. Cambridge University Press Cambridge.

Hawkins, Kaitlyn. 2021. "The Researchers That Search Engines Make Invisible." *CLEAR* (blog). June 10, 2021. <https://civiclaboratory.nl/2021/06/10/the-researchers-that-search-engines-make-invisible/>.

Hayward, Ashley. 2023. Interview with author, transcript, St. John's, Newfoundland, October 10, 2023.

Heath, Kathryn, and Brenda F. Wensil. 2019. "To Build an Inclusive Culture, Start with Inclusive Meetings." *Harvard Business Review*, September 6, 2019. <https://hbr.org/2019/09/to-build-an-inclusive-culture-start-with-inclusive-meetings>.

Helmreich, Stefan. 2023. *Alien Ocean: Anthropological Voyages in Microbial Seas*. Univ of California Press.

Hoang, Kimberly Kay. 2015. *Dealing in Desire: Asian Ascendancy, Western Decline, and the Hidden Currencies of Global Sex Work*. Univ of California Press.

Hooker, Juliet. 2014. "Hybrid Subjectivities, Latin American Mestizaje, and Latino Political Thought on Race." *Politics, Groups, and Identities* 2 (2): 188–201. <https://doi.org/10.1080/21565503.2014.904798>.

hooks, bell. 2014. *Teaching to Transgress*. Routledge.

Hunter, Anne-Barrie, Sandra L. Laursen, and Elaine Seymour. 2007. "Becoming a Scientist: The Role of Undergraduate Research in Students' Cognitive, Personal, and Professional Development." *Science Education* 91 (1): 36–74. <https://doi.org/10.1002/sce.20173>.

Islam, Gazi. 2015. "Practitioners as Theorists: Para-Ethnography and the Collaborative Study of Contemporary Organizations." *Organizational Research Methods* 18 (2): 231–51. <https://doi.org/10.1177/1094428114555992>.

Jaggar, Alison M. 1989. "Love and Knowledge: Emotion in Feminist Epistemology." *Inquiry* 32 (2): 151–76.

Jasanoff, Sheila. 2004. *States of Knowledge*. Taylor & Francis Abingdon, UK.

Jeffrey, Craig, and Jane Dyson. 2021. "Geographies of the Future: Prefigurative Politics." *Progress in Human Geography* 45 (4): 641–58. <https://doi.org/10.1177/0309132520926569>.

Jones, Stephanie. 2015. "When the Body Acquires Pedagogy and It Hurts: Discursive Practices and Material Affects of Round Robin Reading." In *Literacies, Learning, and the Body*. Routledge.

Kaiser, David. 2005. "Moving Pedagogy from the Periphery to the Center." In *Pedagogy and the Practice of Science: Historical and Contemporary Perspectives*, 1–8. MIT Press.

Kawa, Nicholas C., Mark Anthony Arceño, Ryan Goeckner, Chelsea E. Hunter, Steven J. Rhue, Shane A. Scaggs, Matthew E. Biwer, Sean S. Downey, Julie S. Field, and Kristen Gremillion. 2021. "Training Wicked Scientists for a World of Wicked Problems." *Humanities and Social Sciences Communications* 8 (1). <https://www.nature.com/articles/s41599-021-00871-1>.

Keating, A. 2006. "From Borderlands and New Mestizas to Nepantlas and Nepantleras." *Human Architecture: Journal of the Sociology of Self-Knowledge* 4 (3): 5–16.

Keenan, K. Mallery, and A. Gillian Stewart-Wells. 2021. "Moving Beyond Comprehensive Exams: Implementing Authentic Assessments to Enhance Doctoral Student Learning." *Christian Higher Education* 20 (1–2): 69–86. <https://doi.org/10.1080/15363759.2020.1851815>.

King, Tiffany Lethabo. 2019. *The Black Shoals: Offshore Formations of Black and Native Studies*. Duke University Press.

Kleinman, Daniel Lee. 1998. "Untangling Context: Understanding a University Laboratory in the Commercial World." *Science, Technology, & Human Values* 23 (3): 285–314. <https://doi.org/10.1177/016224399802300302>.

Köhler, Tine, Helene Tenzer, and Catherine Durnell Cramton. 2023. "Culture-Driven Scripts for Meetings: An Integrative Theoretical Lens for Studying Workplace Meetings." *Organizational Psychology Review* 13 (4): 400–428. <https://doi.org/10.1177/20413866221128968>.

Langin, Katie. 2018. "What Does a Scientist Look like? Children Are Drawing Women More than Ever Before." *Scienceshots*, March 19, 2018. <https://www.science.org/content/article/what-does-scientist-look-children-are-drawing-women-more-ever>.

Lave, Jean, and Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. Etienne. Cambridge University Press.

Lee, Alison, and David Boud. 2009. "Producing Researchers: The Changing Role of the Doctorate." *Academic Research and Researchers*, 96–108.

Lethabo King, Tiffany. 2021. "Some Black Feminist Notes on Native Feminisms and the Flesh." *Environment and Planning D: Society and Space* 39 (1): 9–15. <https://doi.org/10.1177/0263775821991068>.

Liboiron, Max. 2017. "Compromised Agency: The Case of BabyLegs." *Engaging Science, Technology, and Society* 3 (September): 499–527. <https://doi.org/10.17351/ests2017.126>.

———. 2020a. "CLEAR Lab Meeting." Zoom, May 8.

———. 2020b. "Exchanging." In *Transmissions: Critical Tactics for Making and Communicating Research*, edited by Kat Jungnickel. MIT Press.

———. 2020c. Personal communication.

———. 2021a. “Choosing Lab Values.” *CLEAR* (blog). April 29, 2021.
<https://civiclaboratory.nl/2021/04/29/choosing-lab-values/>.

———. 2021b. *Pollution Is Colonialism*. Duke University Press.

———. 2022a. “Citational Politics in Tight Places.” *CLEAR* (blog). March 2, 2022.
<https://civiclaboratory.nl/2022/03/02/citational-politics-in-tight-places/>.

———. 2022b. “Collective Consent for Research Projects.” *CLEAR* (blog). August 26, 2022.
<https://civiclaboratory.nl/2022/08/26/collective-consent-for-research-projects/>.

———. 2023. Interview with author, transcript, St. John’s, Newfoundland, October 2023.

Liboiron, Max, Justine Ammendolia, Katharine Winsor, Alex Zahara, Hillary Bradshaw, Jessica Melvin, Charles Mather, Natalya Dawe, Emily Wells, and France Liboiron. 2017. “Equity in Author Order: A Feminist Laboratory’s Approach.” *Catalyst: Feminism, Theory, Technoscience* 3 (2).

Liboiron, Max, and CLEAR. 2020. “Citational Politics Project Proposal.”

Liboiron, Max, and Josh Lepawsky. 2022. *Discard Studies: Wasting, Systems, and Power*. MIT Press.

Liboiron, Max, Jess Melvin, and Melissa Morgan. 2024. “Hiring Firing and Hierarchies, Oh My! With CLEAR Lab.” Presented at the IndigeLab Network, July 31.
<https://www.youtube.com/watch?v=D4GdpbrJjFs>.

Lin, Cynthia S., Alisa A. Pykett, Constance Flanagan, and Karma R. Chávez. 2016. “Engendering the Prefigurative: Feminist Praxes That Bridge a Politics of Prefigurement and Survival.” *Journal of Social and Political Psychology* 4 (1): 302–17. <https://doi.org/10.5964/jspp.v4i1.537>.

Liu, Rui. 2023. “Citing toward Community, Citing against Harm.” *CLEAR* (blog). March 20, 2023.
<https://civiclaboratory.nl/2023/03/20/citing-toward-community-citing-against-harm/>.

Longino, Helen E. 1987. “Can There Be a Feminist Science?” *Hypatia* 2 (3): 51–64.

Lyiscott, Jamila. 2019. *Black Appetite. White Food.: Issues of Race, Voice, and Justice within and beyond the Classroom*. Routledge.

Marcus, George E. 2000. *Para-Sites: A Casebook Against Cynical Reason*. University of Chicago Press.

Margolis, Eric, and Mary Romero. 1998. “‘The Department Is Very Male, Very White, Very Old, and Very Conservative’: The Functioning of the Hidden Curriculum in Graduate Sociology Departments.” *Harvard Educational Review* 68 (1): 1–33.

McCarney, Paul. 2023. Interview with Author, transcript, Zoom, October 31, 2023.

McGee, Ebony O., and William H. Robinson. 2019. *Diversifying STEM: Multidisciplinary Perspectives on Race and Gender*. Rutgers University Press.

https://books.google.com/books?hl=en&lr=&id=ZuSCEAAQBAJ&oi=fnd&pg=PP1&dq=Understanding+barriers+to+diversifying+STEM+though+uncovering+ideological+conflicts+&ots=tDiL8zra3E&sig=bBqzGOXgermc0VVot6aqQO_Zjvl.

McKittrick, Katherine. 2021. *Dear Science and Other Stories*. Durham: Duke University Press.

McLaughlin, Jacqueline E., Kathryn Morbitzer, Margaux Meilhac, Natalie Poupart, Rebekah L. Layton, and Michael B. Jarstfer. 2024. "Standards Needed? An Exploration of Qualifying Exams from a Literature Review and Website Analysis of University-Wide Policies." *Studies in Graduate and Postdoctoral Education* 15 (1): 19–33.

Melvin, Jess. 2023. Interview with author, transcript, St. John's, Newfoundland, October 23, 2023.

Mignolo, Walter. 2011. *The Darker Side of Western Modernity: Global Futures, Decolonial Options*. Duke University Press.

Mody, Cyrus, and David Kaiser. 2008. "Scientific Training and the Creation of Scientific Knowledge: Historical, Sociological, and Anthropological Perspectives." In *The Handbook of Science and Technology Studies*, edited by Edward J Hackett, Olga Amsterdamska, Michael E Lynch, and Judy Wajcman, 377–402. MIT Press.

Mohanty, Chandra Talpade. 2003. "'Under Western Eyes' Revisited: Feminist Solidarity through Anticapitalist Struggles." *Signs: Journal of Women in Culture and Society* 28 (2): 499–535. <https://doi.org/10.1086/342914>.

Moraga, Cherrie, and Gloria Anzaldúa. 2015. *This Bridge Called My Back: Writings by Radical Women of Color*. Fourth. SUNY Press.

Morton, Sam. 2023. Interview with author, transcript, St. John's Newfoundland, October 19, 2023.

Moss, Pamela, Leslie Kern, Roberta Hawkins, and Karen Falconer Al-Hindi. 2018. "Grasping the Affirmative: Power and the Process of Becoming Joyful Academic Subjects." *Emotion, Space and Society* 28:53–59.

Mott, Carrie, and Daniel Cockayne. 2017. "Citation Matters: Mobilizing the Politics of Citation toward a Practice of 'Conscientious Engagement.'" *Gender, Place & Culture* 24 (7): 954–73. <https://doi.org/10.1080/0966369X.2017.1339022>.

Murphy, Michelle. 2006. *Sick Building Syndrome and the Problem of Uncertainty: Environmental Politics, Technoscience, and Women Workers*. Duke University Press.

———. 2018. "Against Population, towards Alterlife." In *Making Kin Not Population: Reconceiving Generations*, edited by Donna Haraway and Adele E Clarke, 101–24. Chicago: Prickly Paradigm Press.

Myers, Natasha. 2015. *Rendering Life Molecular: Models, Modelers, and Excitable Matter*. Duke University Press.

- Nagar, Richa. 2014. *Muddying the Waters: Coauthoring Feminisms across Scholarship and Activism*. University of Illinois Press.
- Narayan, Kirin. 2012. *Alive in the Writing: Crafting Ethnography in the Company of Chekhov*. University of Chicago Press.
<https://www.degruyter.com/document/doi/10.7208/9780226567921/html>.
- Ong, Maria, Carol Wright, Lorelle Espinosa, and Gary Orfield. 2011. "Inside the Double Bind: A Synthesis of Empirical Research on Undergraduate and Graduate Women of Color in Science, Technology, Engineering, and Mathematics." *Harvard Educational Review* 81 (2): 172–209.
- paperson, la. 2017. *A Third University Is Possible*. University of Minnesota Press.
- Posselt, Julie, Román Liera, Aireale J Rodgers, and Lauren N Irwin. 2021. "Rethinking the Race." *Insider Higher Ed*, May 3, 2021. <https://www.insidehighered.com/advice/2021/05/04/need-reconsider-qualifying-exams-phd-candidacy-opinion>.
- Puritty, Chandler, Lynette R. Strickland, Eanas Alia, Benjamin Blonder, Emily Klein, Michel T. Kohl, Earyn McGee, et al. 2017. "Without Inclusion, Diversity Initiatives May Not Be Enough." *Science* 357 (6356): 1101–2. <https://doi.org/10.1126/science.aai9054>.
- Restrepo, Eduardo, and Arturo Escobar. 2005. "'Other Anthropologies and Anthropology Otherwise': Steps to a World Anthropologies Framework." *Critique of Anthropology* 25 (2): 99–129. <https://doi.org/10.1177/0308275X05053009>.
- Rivers, Molly. 2021. "Waking up to the Politics of Citation." *CLEAR* (blog). June 10, 2021. <https://civiclaboratory.nl/2021/06/10/waking-up-to-the-politics-of-citation/>.
- Romero, Mary. 2017. "Reflections on 'the Department Is Very Male, Very White, Very Old, and Very Conservative': The Functioning of the Hidden Curriculum in Graduate Sociology Departments." *Social Problems* 64 (2): 212–18.
- Roy, Deboleena. 2008. "Asking Different Questions: Feminist Practices for the Natural Sciences." *Hypatia* 23 (4): 134–57.
- . 2018. *Molecular Feminisms: Biology, Becomings, and Life in the Lab*. University of Washington Press. <https://library.oapen.org/handle/20.500.12657/27684>.
- Sala-Bubaré, Anna, and Montserrat Castelló. 2017. "Exploring the Relationship between Doctoral Students' Experiences and Research Community Positioning." *Studies in Continuing Education* 39 (1): 16–34. <https://doi.org/10.1080/0158037X.2016.1216832>.
- Saldaña-Portillo, Josefina. 2001. "Who's the Indian in Aztlan? Re-Writing Mestizaje, Indianism, and Chicanismo from the Lacandon." *The Latin American Subaltern Studies Reader*, 402–23.
- Schiebinger, Londa. 2000. "Has Feminism Changed Science?" *Signs: Journal of Women in Culture and Society* 25 (4): 1171–75. <https://doi.org/10.1086/495540>.

- Scott, Cliff, and Joe Allen. 2023. "Toward an Organizational Theory of Meetings: Structuration of Organizational Meeting Culture." *Organizational Psychology Review* 13 (4): 506–31. <https://doi.org/10.1177/20413866221127249>.
- Shankar, Kalpana, David Hakken, and Carsten Østerlund. 2017. "Rethinking Documents." *The Handbook of Science and Technology Studies* 4:59–86.
- Sismondo, Sergio. 2011. *An Introduction to Science and Technology Studies*. John Wiley & Sons.
- Solorzano, Daniel G., and Tara J. Yosso. 2001. "Critical Race and LatCrit Theory and Method: Counter-Storytelling." *International Journal of Qualitative Studies in Education* 14 (4): 471–95. <https://doi.org/10.1080/09518390110063365>.
- Star, Susan Leigh. 1990. "Power, Technology and the Phenomenology of Conventions: On Being Allergic to Onions." *The Sociological Review* 38 (1_suppl): 26–56. <https://doi.org/10.1111/j.1467-954X.1990.tb03347.x>.
- . 1995. "Introduction." In *Ecologies of Knowledge: Work and Politics in Science and Technology*, edited by Susan Leigh Star. Sunny Press.
- Star, Susan Leigh, and James R. Griesemer. 1989. "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social Studies of Science* 19 (3): 387–420. <https://doi.org/10.1177/030631289019003001>.
- Stephens, Neil, and Jamie Lewis. 2017. "Doing Laboratory Ethnography: Reflections on Method in Scientific Workplaces." *Qualitative Research* 17 (2): 202–16. <https://doi.org/10.1177/1468794116678040>.
- Stewart-Wells, A. Gillian, and K. Mallery Keenan. 2020. "Assessing Doctoral Students: A Background on Comprehensive and Authentic Assessments." *The Journal of Continuing Higher Education* 68 (2): 84–100. <https://doi.org/10.1080/07377363.2020.1743950>.
- Strathern, Marilyn, ed. 2000. *Audit Cultures : Anthropological Studies in Accountability, Ethics, and the Academy*. Routledge.
- . 2006. "Knowledge on Its Travels: Dispersal and Divergence in the Makeup of Communities." *Interdisciplinary Science Reviews* 31 (2): 149–62. <https://doi.org/10.1179/030801806X103316>.
- Subramaniam, Banu. 2009. "Moored Metamorphoses: A Retrospective Essay on Feminist Science Studies." *Signs: Journal of Women in Culture and Society* 34 (4): 951–80. <https://doi.org/10.1086/597147>.
- . 2014. *Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity*. University of Illinois Press.
- Subramaniam, Banu, and Angela Willey. 2017. "Introduction: Feminism's Sciences." *Catalyst: Feminism, Theory, Technoscience* 3 (1): 1–23.

- Subramaniam, Banu, and Mary Wyer. 1998. "Assimilating the 'Culture of No Culture' in Science: Feminist Interventions in (De)Mentoring Graduate Women." *Feminist Teacher* 12 (1): 12–28.
- Sundberg, Juanita. 2014. "Decolonizing Posthumanist Geographies." *Cultural Geographies* 21 (1): 33–47. <https://doi.org/10.1177/1474474013486067>.
- Swain, Dan. 2019. "Not Not but Not yet: Present and Future in Prefigurative Politics." *Political Studies* 67 (1): 47–62. <https://doi.org/10.1177/0032321717741233>.
- TallBear, Kim. 2017. "Standing with and Speaking as Faith." *Sources and Methods in Indigenous Studies*, 78–85.
- Thomas, Kecia, and Leslie Ashburn-Nardo. 2020. "Black Lives Matter... Still: Moving beyond Acknowledging the Problem toward Effective Solutions in Graduate Training and Education." *Equality, Diversity and Inclusion: An International Journal* 39 (7): 741–47.
- Todd, Zoe. 2016. "An Indigenous Feminist's Take On The Ontological Turn: 'Ontology' Is Just Another Word For Colonialism." *Journal of Historical Sociology* 29 (1): 4–22. <https://doi.org/10.1111/johs.12124>.
- Törnberg, Anton. 2021. "Prefigurative Politics and Social Change: A Typology Drawing on Transition Studies." *Distinktion: Journal of Social Theory* 22 (1): 83–107. <https://doi.org/10.1080/1600910X.2020.1856161>.
- Tracy, Karen, and Aaron Dimock. 2004. "Meetings: Discursive Sites for Building and Fragmenting Community." *Annals of the International Communication Association* 28 (1): 127–65. <https://doi.org/10.1080/23808985.2004.11679034>.
- Traweek, Sharon. 1988. *Life Times and Beamtimes: The World of High Energy Physicists*. Vol. 7. Cambridge: Harvard University Press.
- Trott, Carlie D. 2016. "Constructing Alternatives: Envisioning a Critical Psychology of Prefigurative Politics." *Journal of Social and Political Psychology* 4 (1): 266–85. <https://doi.org/10.5964/jspp.v4i1.520>.
- Tsing, Anna Lowenhaupt. 2005. *Friction: An Ethnography of Global Connection*. Princeton University Press. <https://doi.org/10.2307/j.ctt7s1xk>.
- Tsing, Anna Lowenhaupt, Nils Bubandt, Elaine Gan, and Heather Anne Swanson. 2017. *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*. U of Minnesota Press.
- Tuck, Eve. 2009. "Suspending Damage: A Letter to Communities." *Harvard Educational Review* 79 (3): 409–28. <https://doi.org/10.17763/haer.79.3.n0016675661t3n15>.
- Tuck, Eve, and K. Wayne Yang. 2018. "Toward What Justice." *Describing Diverse Dreams of Justice in Education*.
- Velásquez Runk, Julie. 2014. "Enriching Indigenous Knowledge Scholarship via Collaborative Methodologies: Beyond the High Tide's Few Hours." *Ecology and Society* 19 (4).

- Wa Thiong'o, Ngũgĩ. 1998. "Decolonising the Mind." *Diogenes* 46 (184): 101–4.
- Weidman, John C., and Elizabeth L. Stein. 2003. "Socialization of Doctoral Students to Academic Norms." *Research in Higher Education* 44:641–56.
- Wenger, Etienne. 1999. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge university press.
- Wenger, Etienne, Richard A. McDermott, and William Snyder. 2002. *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Harvard Business Press.
- Wesner, Ashton. 2019. "Messing up Mating: Queer Feminist Engagements with Animal Behavior Science." *Women's Studies* 48 (3): 309–45. <https://doi.org/10.1080/00497878.2019.1603987>.
- Wilson, Shawn. 2008. *Research Is Ceremony: Indigenous Research Methods*. Halifax Winnipeg: Fernwood Publishing.
- Wolf, Marti. 2023. "Negotiating Research: A Visual Study of My Mental Metaphors | The Classic Journal." *The Classic Journal* 9 (1). <https://theclassicjournal.uga.edu/index.php/2023/05/16/negotiating-research-a-visual-study-of-my-mental-metaphors/>.
- Wylie, Caitlin Donahue. 2019. "Socialization through Stories of Disaster in Engineering Laboratories." *Social Studies of Science* 49 (6): 817–38. <https://doi.org/10.1177/0306312719880266>.
- Yates, Luke. 2015. "Rethinking Prefiguration: Alternatives, Micropolitics and Goals in Social Movements." *Social Movement Studies* 14 (1): 1–21. <https://doi.org/10.1080/14742837.2013.870883>.

APPENDIX 1. CLEAR VALUES

Table A.1 Description of CLEAR values quoted from the CLEAR Lab Book (2025)

CLEAR Value	Excerpted description of value quoted directly from the Lab Book
Humility	Humility comes from the understanding that our world is interconnected. Being humble means that we—as members of larger groups of humans and others—recognize that we are not singular nor superior in our knowledge, perspective, experience, or social position, and that we are connected to others (whether we want to be or not). It is another way to say “we are all connected” or “all our relations” or similar ideas from different cosmologies. Yet, these connections and relations are not all even, and humility also entails an intelligence (emotional, intellectual, relational) about <i>how</i> we are connected, <i>why</i>, and to whom, and how these connections vary from context to context, place to place, and person to person over time... (CLEAR 2025, 8) ...Humility requires a constantly evolving set of knowledges that come from brains, guts, hearts, and connections. We are always in a complex web of relations, and many of them overlap and are even at odds with one another. Often (always) we are unaware of all of our connections. In an academic space where individual genius, talking, and being right are prioritized, shifts towards humility can include being ready to change our minds and actions, being responsive to context, stepping back and listening to speakers on their own terms instead of our own, and being mindful of our surroundings so we might move with them rather than force them to adapt to us. It is about recognizing that one still has much to learn regardless of age, education, or lived experience and about remaining teachable, no matter how much we already know. A humble person understands that there are many ways to know things, many different forms of knowledge, and recognizes the limits of a single way to know things (e.g.: strictly via the scientific method is not superior to lived experience, but is a different kind of knowledge, or even that your own good intentions are better than the other good intentions in the lab). This all sounds super serious, but a good sense of humour helps humility... (CLEAR 2025, 8-9) ...Humility is not modesty; modesty usually means not talking about or celebrating your achievements. If you are modest, then you are not acknowledging or celebrating the larger group of people and relationships you are part of and how they are crucial to those achievements; you do an injustice to yourself and those relations by practicing modesty (erasure of connections) rather than humility (being beholden to connections). Yet traditional ideas of modesty dodoes overlap with the way we think about humility in that both eschew individualism: the idea that individuals are the best, most effective, or most important unit for action, value, or knowledge. Humility is a verb, not a noun. It is not just discursive work (saying things in support, acknowledging others verbally in Land acknowledgements), but involves concrete actions that make material and relational changes on the

	ground (where it dovetails with accountability, as per the next section below). (CLEAR 2025, 9-10)
Accountability	Accountability is short-hand for “accountability to relationships.” It names the actions that are required to stay in good relations, actions that are our responsibility to maintain because of the way we are related to our partners, collaborators, other CLEAR members, land, materials, and other beings involved in our work, both as individuals and as a collective. Put simply, accountability are the acts that make humility true. Not everyone has the same accountabilities– they depend on our positions as individuals and as part of collectives. Accountabilities are uneven, even if they are shared: “You know this— an elder daughter has different obligations than a mail carrier, and you have different obligations to your elder daughter than to the mail carrier. DuPont has different obligations to plastic pollution than someone with a disability who uses a straw to drink. Even though I’m sure you’ve heard that “everything is related” in many Indigenous cosmologies, this doesn’t mean there is a cosmic similitude of relations. You are not obliged to all things the same way. Hence there is a need for specificity when talking about relations” (Liboiron, 2021: 24). In addition to being accountable to people and groups we like and claim, we are also accountable to relations we don’t choose, don’t like, don’t desire, and that are not successful. In the words of Cree researcher Shawn Wilson, “right or wrong; validity; statistically significant; worthy or unworthy; value judgements lose their meaning. What is more important and meaningful is fulfilling a role and obligations in the research relationship — that is, being accountable to your relations.” Another way to say this is that the means (actions) matter more than then ends (results). If you think of accountability as the acting out of responsibilities to how you are always related to others (humility), then it should be clear that accountability is about ongoing maintenance of relations, not achieving a product or state. (CLEAR 2025, 13-14) Accountability means that we do not focus on the intent of actions, but in the actions and their effects, acknowledging responsibility when there is a gap between intent and effect. (CLEAR 2025, 14)
Collectivity	Collectivities are made, remade, and maintained--they are not born ready-made, and their continuity is a result of ongoing gratitude and reciprocity. We are inspired by what Kim TallBear calls “<i>standing with</i>.”¹ a methodology “towards faithful knowledges, towards co-constituting my own knowledge in concert with the acts and claims of those who I inquire among.” We think of this as <i>standing with</i> others on their own terms, being faithful to what others need and want rather than leading with our own desires or our ideas of what

	they should need or want. If you are a new lab member, you are here because we think you possess this capacity. (CLEAR 2025, 21) Full generosity and collectivity also requires boundaries. The value of collectivity should not be mistaken with a radical inclusiveness to everyone: there are no white supremacists allowed in CLEAR, nor people who are primarily accountable to themselves and their own desires who have work to do before they can be humble, accountable, and generous. This doesn't mean we do not accept people who make mistakes--making mistakes is a core aspect of the work we do (see the apology protocol for example)! But it means we do not accept people who cannot be accountable when they make mistakes, who cannot be humble enough to recognize when mistakes are made. We are cautious and deliberate in who we invite into our space, particularly seeking folks that hold similar values to our own to ensure those values are enacted in the everyday, mundane activities of CLEAR as well as in our fancy science. The collective lab community is achieved as much by bringing people in as it is through killjoy and protective activities** in response to pressures and desires outside the lab (Max and the lab/project managers do much of this work, but it is also a form of accountability for all lab members). (CLEAR 2025, 21-22) When we discussed this value in the lab, the idea of a semipermeable membrane came up several times (we are geeks, after all): “Semipermeable membrane is a type of <u>biological</u> or <u>synthetic</u>, <u>polymeric</u> membrane that will allow certain <u>molecules</u> or <u>ions</u> to pass through it by <u>osmosis</u>—or occasionally by more specialized processes of <u>facilitated diffusion</u>, <u>passive transport</u> or <u>active transport</u>. The rate of passage depends on the <u>pressure</u>, <u>concentration</u>, and <u>temperature</u> of the molecules or <u>solutes</u> on either side, as well as the permeability of the membrane to each solute. How the <u>membrane</u> is constructed to be selective in its permeability will determine the rate and the permeability. Many natural and synthetic materials which are rather thick are also semipermeable. One example of this is the thin film on the inside of the egg.” We are a living, cooperating system that stays healthy by letting some things flow through, keeping other things out, and actively seeking out others. These activities make conditions inside the living system different from the conditions outside of it. This does not mean we always agree with each other, but rather we aim to move through difference and disagreement while holding each other accountable, <i>calling in</i> to shared relations rather than <i>calling out</i> into ostracization (standing with, not kicking out) (see our protocol on calling in): “To choose the relational path is to opt for the historical project of being community... It means to endow relationality and the communal forms of
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	happiness with a grammar of value and resistance capable of counteracting the powerful developmentalist, exploitative, and productivist rhetoric of things with its alleged meritocracy.¹⁸" (CLEAR 2025, 22) ¹⁸ Segato, "La guerra contra las mujeres," 2016: 106.
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