Toxic Tech, Library Service, and Contradicting Values

by

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Abstract

The information communication technology (ICT) industry is known to be hazardous to land, through extraction, energy usage, and toxic waste, and to people, through unethical labour practices. The library commits to social responsibility and sustainability as professional values meant to guide the profession during changing times. However, the simultaneous commitment to providing equitable access to information and resources, which increasingly relies on ICT, requires constant acquisition and disposal of ICT and reliance on data servers with their own environmental and human costs. How does the librarian reconcile the contradiction created by institutional codification of the librarian identity? By thinking through assemblages, I view the library and librarian as temporary arrangements of component parts, as well as components themselves in larger systems. How can the library and librarian be rearranged to ameliorate the harms of the industry? A line connects the "slow violence" of the ICT industry, which is subtle and accretive violence, yet also structured and sanctioned for use by corporations, through the "implicated subject" that belongs to the systems of exploitation, although not directly responsible. This research extends proposals for the ethical consumption of ICT, which focus on e-waste, by turning to the librarian identity and its capability to open outward to acknowledge its contradictions and implication in harmful systems. I find the sustainable librarian to be focused inward on the profession's ideologies, with a few examples of making connections outward. I find the library and librarian become distributed and invisible through their connections with ICT. Through their positions of social power, they normalize an unquestioning relationship with ICT and the material and human resources it requires. However, by acknowledging implication and connecting outward from the librarian identity, there is always the potential to act otherwise.

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Introduction

"Indeed, this conception of what is morally binding is not one that I give myself; it does not proceed from my autonomy or my reflexivity. It comes to me from elsewhere, unbidden, unexpected, and unplanned. In fact, it tends to ruin my plans, and if my plans are ruined, that may well be the sign that something is morally binding upon me." (Butler, 2004, p. 130)

We depend daily on our digital technology – as extensions of our memory, our voice, our hands, our imagination – to the point we rarely recognize the materiality of the thing we spend the majority of our day holding on to, staring at, or listening to. We tend to be desensitized to what goes into the workings of these devices: material extraction, production, data centres, disposal, and all of the labour within these, as well as the powers and exploitations that bring these elements together. As we become more tech-oriented, our libraries do as well, shifting to meet our needs.

Libraries and librarians exist in a contradictory space of potential and constraint. They are our hyperbolic bastions of democracy and liberalism, skirting capitalism, yet at the same time are always also part of that system and become inheritors (and perpetrators) of the same inequalities and injustices (Popowich, 2019a). In a similar complicity, the librarian is committed to providing equitable access to information, entertainment, and the social world which is primarily carried out through information communication technology (ICT); to meet this need, ICT moves in and out of the space, making the library and librarian key actors in purchasing, using, and disposing of the ICT. However, since the 1960s, librarians have become more aware of their social power and responsibility in society, codified by both the American Library Association (ALA) and the International Federation of Library Associations and Institutions (IFLA). This responsibility

becomes the impulse for environmental advocacy, and the question becomes: how does the librarian reconcile contradictions that appear in the commitment to quality service, commitment to sustainability and social responsibility, and the increasing connection to and constitution by ICT – with all of its destructive qualities?

By viewing the problem through Gilles Deleuze and Félix Guattari's perspective, we see the librarian subjectivity in flux (as they see everything). While the library as an institution creates these contradictions, the librarian through processes of opening outward and experimentation is granted a freedom of movement. It is a freedom that passes through the structured codification that creates contradiction, and suggests a way to hold disparate concepts together. I spend some time in chapter one exploring the neutrality debates in the Library and Information Studies (LIS) literature; from this debate, there are clear examples of librarians engaging with a vocal period of contradiction in ALA's history. This example sets up discussion for the schizophrenic process in the second half of chapter two, and informs later discussion of the contradiction between toxic tech, commitment to service, and sustainability.

Deleuze and Guattari require a particular, fluid mindset that views things from the middle. A unitary 'thing' is always composed by 'things' and goes on to constitute other 'things.' Each of these elements are always in motion, making connections, building together, to create new momentary stabilities, or assemblages, through an immanent, self-productivity. The boundary that defines an interior element from its exterior elements is also always in flux, and the philosophers threaten to do away with any such divide altogether. Intensities are constituted in and from the milieu, which should be taken as a combination of the terms: surroundings, medium ("as in chemistry"), and middle (Massumi, 1987, xvii). This co-constitution is discussed more fully in the philosophy of technology section of the literature review, and is carried through

to chapter four, in discussions of faces meeting screens, fingers meeting keyboards: the subject, library, and its resources connecting with ICT, becoming distributed across the network, and fading from sight.

Both the library and librarian are fundamentally connected to ICT in our current formation of society. There are two proposals that look within the LIS profession for ethical practice regarding the acquisition and disposal of ICT, and are primarily focused on e-waste (Poggiali, 2016; Zazzau, 2006). I extend their work by thinking through the broader ways the librarian's connection to, and reproduction of, these harmful and commanding cultural systems implicates the librarian in the violence against land and ICT's labourers – a violence that is structured, sanctioned, slow, and protracted. This "slow violence" is an intentional tool that uses time, geography, regulations, science, and insincere corporate social responsibility to make the violence invisible to an outsider's gaze (Nixon, 2011). The concept of the "implicated subject" works through the librarian's adjacency to this violence: consumers are not entirely innocent, not entirely perpetrators, but some combination in-between (Rothberg, 2019). Acknowledging implication means opening outward from an insular perspective to identify with another's immiserated experience and one's own participation in the system that harms: it recognizes the "unbidden, unexpected, and unplanned" call from elsewhere (Butler, 2004, p. 130). Deleuze and Guattari think in a similar flow, that our identities are unbounded and informed by each other, although social forces stratify the unbounded space, and us. They propose a schizophrenic process that also opens outward and passes through the delineating boundaries.

When we view the library as an assemblage, we explore the creative potential of the institution to follow unusual initiatives or connections as potential escapes and freedoms from restrictive forces: social, economic, and political (Gerolami, 2015). I carry this potential for

escape forward into my examination of librarianship's values with how the values are discussed and practiced by the profession. Values are an intentionally vague framework from which decisions are made, while imbuing a sense of professionalization (Hicks, 2014a, p. 169). They are the "why" behind policy (Aldrich, 2018). They are "major, significant, lasting, and shared by the members of a group," while delineating between good and bad, desirable and undesirable (Gorman, 2015, p. 1). However, when we stick too closely to predetermined notions of what our values mean and how they can solve our problems, we risk becoming teleological, whether that appears in an innocence that precludes acknowledgment of participation in harms (Popowich, 2019a, p. 297), or a "vocational awe" that affirms the sanctity of work and shields the profession from critique (Chiu et al., 2021; Ettarh, 2018). In the perspective of intensities, and from the middle, this devotion inward creates a static attachment to a stratum – a malignant, proliferating growth that leads to an entity's destruction (Deleuze & Guattari, 1987, p. 165).

Social responsibility and sustainability are looked to for guidance to navigate the clashing values. A strong image of the sustainable librarian is presented in chapter three through an analysis of the critical discourse. However, the sustainable librarian tends to look inward at how the library and librarian are already arranged for sustainability initiatives, although some examples of outward looking partnerships are highlighted. The sustainability librarian needs to open outward and acknowledge its complicity in the slow violence of the ICT industry, especially as the library and librarian become more entangled with ICT.

Statement of Purpose

The library and librarian are in a co-constitutive relationship with ICT, and the barrier between the them dissipates as aspects of ICT and its industry become part of the library and librarian, and as the library and librarian provides necessary access and normalization of ICT.

Librarians have committed to social responsibility and sustainability as values, alongside a codification for providing the highest quality of service which necessarily requires ICT in today's world. Conflict and contradiction are then created because the aforementioned commitments advocate for reflection on the unsustainable and harmful industry while the profession is driven to (increasing) ICT consumption. The socially responsible and sustainable librarian must find a way to acknowledge their complicity in the systems that embolden destructive practices against land and communities.

Research Questions

This research seeks to explore:

1. In what ways are social responsibility and sustainability part of the librarian intensity?

   1a. What contradictions are created by these values?

   1b. What attempts are made to reconcile these contradictions?

2. What happens to the library and librarian when we view them from the middle and as arrangements in flux?

   2a. From this perspective, in what ways does the library and librarian produce and reproduce the harmful exploitations of land and labour that are present in the ICT industry's practice?

   2b. What contradictions appear from this perspective?

3. In what ways can the library and librarian be reconstituted to reduce and/or ameliorate these harms?

Throughout this research, and particularly as I tried to put it into words, I have moved between overwhelming feelings of frustration and sadness at the stories and images I have encountered, hopeless in systems too large and complex to meaningfully engage with, and my

own love and daily use of digital technology. To be clear about my own perspective and management of contradictions, my concerns about digital technology and capitalism are not about the concepts in and of themselves. My concerns are about the ways these two things come together with a powerful force that defines our relationships to the world before they have a chance to exist otherwise. I have a constant uneasiness with digital technology (specifically the "Internet of things" and data collection) creeping into our homes and lives, seeming to come without critical thought of implications, power structures, and the data's auxiliary or future use.[1] I am frustrated by capitalism's use of obsolescence and 'innovation' that coerces us into spending more money, and sooner, especially when these things have extensive impacts on communities and our environment in their construction and disposal. At times, I find the whole structure that drives our culture incredibly frustrating and negligent of notions for sustainability and responsibility. *At the same time*, I love technology. I use it daily: gaming, listening to music, creating art, and communicating. The Internet truly affords another world for us to live in. And while I used to resist Spotify because of my concerns about privacy and the implications of streaming – that I couldn't "collect" or own my music anymore, as well as the environmental cost – I actually love having access to an algorithm that can pick out the best bops for my taste as if by magic. But, as will be discussed more thoroughly in chapter four, the 'magic' is actually a collection of skilled labourers that have built on and work to perfect their knowledge base.

While I centre the library librarian in this study, I hope it is also clear through my reflections here and throughout the thesis, that the problems I address are not secluded to the library and librarian intensity. The implications of digital technology driven by unrestrained capitalism (and subsequently colonialism and neoliberalism) are present throughout our worlds,

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[1] Shoshana Zuboff's *The Age of Surveillance Capitalism* is a fantastic example of how digital technologies and capitalism have connected to form a new intensity of capitalism.

as (digital) scholars and as individuals. Recognizing our implication in a system that intentionally, and silently, causes significant, lasting harm to land and people, means opening out to recognize that our 'individuality' is also an intensity composed by others' intensities. When we run our hand over the polished surface of the aluminum casing of a laptop or cellphone, its smooth cosmetic shine is revealed when the metallurgic dust escapes its 'unity' and travels into the labourer's lungs (Parikka, 2015).

Overview of Chapters

Since there is not a lot written at the precise overlap of librarianship values as they relate to ICT and sustainability, I start by looking at the social and material criticism of ICT through philosophy of technology (PhilTech) and media studies, respectively. The former helps us see the cultural implications of our relationship with technology, while the latter addresses the environmental and labour implications of its construction, use, and disposal. A review of technology in the library's history adds to the discussion of library and technology as assemblages that have connected and exerted their influences, such as with ebooks. Immaterial and affective labour become relevant to the librarian in the new Information Society arrangement. Finally, a review of the social responsibility and sustainability values provides needed context for the theoretical reading of librarian intensities.

The second chapter is the bulk of my theoretical argument. I introduce Deleuze and Guattari's philosophy and the lens it provides for this research. I pull out key concepts in a broad overview, then introduce two more direct concepts: Rob Nixon's slow violence and Michael Rothberg's implicated subject, connecting each to Deleuze and Guattari's philosophy. I also introduce the methodology for the two studies that follow.

In the third chapter, I explore the discourse surrounding sustainability in the two major library associations: ALA and IFLA. Through a Critical Discourse Analysis (CDA), I study how librarians are talking about their sustainability commitment at the governing level, external messaging level, and professional discourse level. I discuss these results through my theoretical framework to explore the librarian's identity.

In the fourth chapter, I conduct observational studies at four libraries (two public, two academic) in order to discuss more pointedly how ICT and the library interact in space and resources, and with patrons. This chapter also includes a comparison between the sustainability reports of the three manufacturers present in these libraries, following a proposal for the conscientious librarian to ethically consume ICT. I discuss these results through my theoretical framework to ground the discussion in what I have observed in the spaces.

The final chapter brings these discussions together and considers how the librarian can act otherwise, leverage the identity they have crafted for themselves as sustainability champions, while maintaining their commitment to a quality of service.

Chapter 1: Addressing the Problem

"Make a map, not a tracing," Deleuze and Guattari say (1987, p. 12); be inspired by the rodent's burrow with its multiple entries and pathways. The map is opposed to the tracing, which always falls back on to the same. The philosophers encourage map-making or rhizomatic thinking. To enter the undefined, flat space and plot your course, make your lines, form your connections. I see the problem I research as a rodent's burrow with no prominent point of departure (or arrival). Do we start with the library, librarian, or technology? If technology, do we start by philosophising about its purpose and effect in society? When and how do we narrow down to ICT, which has by no means popped forth from nothing? Do we start with the tech industry's pollution or exploitation of labouring bodies? If we talk about labour, we may as well talk about how the Information Society has recalibrated labour to also mean the immaterial labour that plops us at the computer. Immaterial labour reaches out into whole territories of new capitalism, the exploitation of our behaviour and surveillance through our devices, apps, and social networks. Oh, but that is a rabbit's hole (separate, somehow, from my rodent's burrow to be sure). So then, the library's increasing technologizing, perhaps? But we should centre the librarian's values and role in society before the library institution. How have the values of social responsibility and sustainability come to be and what changes have they effectuated in the library, in librarians?

This literature review is, admittedly, sprawling as it tries to map a course for my burrow. Early in my research, I was influenced by the writings of Lewis Mumford and Langdon Winner as they thought through the problems and implications of technology's unhindered growth during the rise of computing. This seems as good a place as any. We start, then, with a brief look at philosophically and socially informed study of technology (in a broad sense), and the materiality

of technology (in the ICT sense). In the former, we can map connections between the philosophy of technology and Deleuze and Guattari's philosophies. From there, we move to look at how the library, information, and technology have always been in close relationship, each helping define the other. In later years, especially, we see how ICT imposes new challenges to which librarians must adapt. Next, changes in the librarian are reviewed through the development of social responsibility and sustainability as professional values.

Philosophy of Technology Meet Deleuze and Guattari

An attempt to fully trace the Philosophy of Technology (PhilTech) would start with the musings of ancient Greece and human's technological capacity to manipulate raw materials or nature toward a purpose (e.g., shelter) (Franssen et al., 2018). Instead, since our focus is on that which falls in and around ICT, let us come in sideways to explore the thoughts happening in the 1960s - 1990s, as computers are developing and connected with our homes. Philosophical consideration of technology, here, is based in humanities and the social sciences and concerns itself with the economic, political, and cultural forces existing within technology's development and implementation (Franssen et al., 2018). Jacques Ellul (1964) suggests there is a near-sacred emphasis on technology (technique, specifically), which is driving an ethic of efficiency via information, and turning us away from humanistic concerns. Additionally, we are letting technology take the reins, adapting to its progress rather than having it adapt to ours. In an encompassing view, Mumford (1963, 1967, 1970) sees a pattern of technologies being used to organize and control societies since the invention of the calendar, and that they are often associated with State forces: military, education, and government, and can show extreme demonstrations of violence and power (e.g., the Atomic bomb). This overarching force is the "Megamachine" and it specialises in bribery – new technologies promise (and deliver) ease and

efficiency, as Ellul brings forward, but the effects of new technologies are improperly studied. The Megamachine enslaves us; we become a cog within its machine. In our present relationship with technology, that bribe has turned to blackmail since it runs so many aspects of our lives, and to turn away would be detrimental (Loeb, 2018). Fundamentally, the Megamachine only offers that which ultimately sustains its function, and part of its sustenance is dependent on intentional obsolescence for recurring consumption. With the surge of computers, Mumford predicts they will become the "Eye of the reinstated Sun God," bringing all of humanity and its activity under surveillance: "In the end, no action, no conversation, and possibly in time no dream or thought would escape the wakeful and relentless eye of this deity: every manifestation of life would be processed into the computer and brought under its all-pervading system of control" (1970, pp. 274–275). We know this surveillance and data-extraction to be true as concerns about data privacy have come to the fore. But, to be sure, through an anatomical map of the Artificial Intelligence constituting Amazon's Echo home assistant, we see how large-scale data extraction is a necessary input for its processes and value creation (Crawford & Joler, 2018); this is one cog or strata in the larger trend of surveillance capitalism's need to create surplus value from extracted data (Zuboff, 2019). The anatomy of Artificial Intelligence depends on an unending hunger for carbon and minerals to fuel its processes, infrastructure, and materiality; the anatomy as it exists today depends on the exploitation of land and labour (Crawford & Joler, 2018), an "inordinate violence and destruction" inherent to the technology (Mumford, 1967, p. 332). In the face of such clear power, we need to adjust our sense of responsibility and caution surrounding technology, for the sake of both humanity and the planet (Jonas, 1979).[2]

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[2] See Hans Jonas. (1984). *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* for a more in-depth discussion of the need for an ethical handling of technology.

There is some negative determinism in these early PhilTech writings; an inescapability inherent to technology's progress and hold over the world. Ellul brings forward the ethos of efficiency technology imbues in us; Mumford carries that further, envisioning humanity enslaved, turned into cogs for the state machine (albeit, at the same time humanity is offered advantages). Hans Jonas (1979) defines technology's form to have self-propelling momentum toward novelty, while its content has concrete uses and impact. There is some human agency within technology's momentum, but Jonas argues our decision-making is weakened through the accumulating technology process; we manufacture our own determination through these artefacts, creating the "technological colossus" that threatens our humanity, through automation, and the planet (1979, pp. 42–43).

PhilTech eventually turns away from determinism as it combines with Science and Technology Studies (STS), which relies on an empirical and analytical focus through case studies. Langdon Winner (1980, 1986) is something of a bridging figure. He attends to the ways we manifest political and cultural biases through our technology. The manifestations can be intentional and unintentional, but some technologies encourage, or are made more compatible with particular social relations, reifying them. In turn, then, these technologies shape our political and cultural world (1980). He continues exploring the reconstitution of our world through the things we make, suggesting we are sleepwalking through these important processes (1986). The concept of co-constitution is developed further in following years, especially within STS,[3] and is also a central concept to Deleuze and Guattari's philosophy.

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[3] STS brings such theorizations as the Social Construction of Technology and Actor-Network-Theory, both of which address the ways humans and technology affect each other's development. See Donald MacKenzie and Judy Wajcman's 1985 and 1999 editions of *The Social Shaping of Technology* for an outline of the STS discipline during this formative period and excerpts for these theories. As this thesis has enough theoretical ponderings with Deleuze and Guattari, I opt to not include discussion of SCOT or ANT in the body. It is worth noting that Winner's (1980) "Do Artifacts Have Politics?" is included as an introduction to the general issues facing STS.

Deleuze and Guattari have previously been examined alongside Mumford (Genosko, 2015) and within PhilTech (Wellner, 2022). While these authors create their own maps in this regard, their influence has (re)directed my attention to Deleuze and Guattari as part of PhilTech's discourse. Deleuze and Guattari agree, to an extent, with Mumford's concepts for the Megamachine. They find the reliance on enslavement to be more applicable to the ancient regimes because it overcodes (redefines) humans as cogs "under the transcendence of a formal Unity" (1987, p. 458). We are in a new social regime, however: "the immanence of an axiomatic" (1987, p. 158); this is a ubiquitous system that seems to come from within society, rather than imposed by a ruling figure (e.g., an Emperor), and can directly organise relationships to its purpose (Toscano, 2010). Capitalism is an axiomatic system. Within this new social regime, our current relationship with digital technology ("cybernetic and information machines" (1987, p. 458)) has us being subjectified by digital technologies, entering an "internal, mutual communication" (1987, p. 158) – a co-constitution. There is a dual and simultaneous process happening: Mumford's enslavement, on one end, and the subjectification through technology, on the other. Together, they use "processes of normalization, modulation, modeling, and information that bear on language, perception, desire, movement, etc." (1987, p. 458), which is the reification Winner points to in the reconstitution of our world through the manifestation of our biases in the technology we create.

Deleuze and Guattari use the example of television; we are subjectified by it in the sense it is made 'for us,' and that we have some capacity in the creation of its content, while at the same time we are "intrinsic component pieces," inputs and outputs in its informational exchange (1987, p. 458). Their discussion of enslavement does not specify being trapped, although it is tempting to make the assumption because of the term's relation with Mumford and his strong

sense of maliciousness. Indeed, in re-reading Deleuze and Guattari as philosophers of technology, Galit Wellner (2022) assumes the connection while exploring the example of the social network and the way we are made subjects of the network while also trapped by our inability to turn away and disconnect.

While I agree Mumford's bribe has turned to blackmail (Loeb, 2018), it is more fair to Deleuze and Guattari to say we are trapped in the sense we are immediately figured as inputs and outputs, integrated into the system's machinations as a cog, numbers, personally identifiable information. We are enslaved to the social network because we are component parts. However, within Deleuze and Guattari's framework, there is always the capacity for creative, activist 'output'. We can direct the social network toward ulterior movement. For example, the capture of George Floyd's last words by people filming police violence, and the subsequent sharing of that video and words through social media, re-instigated the Black Lives Matter protests in 2020.

In another example, an online social movement coalesces around the murder of Trayvon Martin by George Zimmerman in 2012, who was allegedly acting in self defense against a black teenager in a hoodie. People posted photos of themselves in hoodies with the slogan "I'm Trayvon Martin" or "We're all Trayvon Martin" to express "solidarity-via-identification" (Rothberg, 2019). In another flow, Michael Rothberg points to a website that is also created to share the sentiment "we are not Trayvon Martin." The slogan expresses and acknowledges the position of experiencing privileges while living in a racist society – a marker of belonging to the conditions that led to Martin's murder. Rothberg reads this alternate identification as a means to "examine unwelcome forms of implication … without stepping into the shoes of either" Martin or Zimmerman (i.e., victim or perpetrator) (2019, p. 6). We will discuss Rothberg's implicated subject more fully in the next chapter. I introduce it here as an example of how the digital social

network, to which we are instantaneously made subjects by and enslaved to, also connects us and enables the witnessing and acknowledgment of another's lived experiences and our (implicated) relationship to those experiences. This type of connection is in itself an ulterior purpose, and can additionally be leveraged toward an activist output (e.g., protest).

Wellner highlights Deleuze and Guattari's inspiration from Gilbert Simondon's theory of transduction: a "recursive process running in an almost endless loop in which each 'output' becomes the 'input' for the next round" (2022, p. 40).[4] Transduction in this sense is central to Deleuze and Guattari's use of immanence and their process of becoming, which is discussed in context in the next chapter. Succinctly, Deleuze and Guattari (1987) rely on the metaphor of geological stratification: strata are momentary sedimentations of relations and 'objects.' But each relation and 'object' is, likewise, a stratum. Strata are made of strata, and strata go on to make more strata. The output becomes the next strata's input – a recursive process. In the sentences leading up to a footnote for Simondon, the philosophers write that it is impossible to "isolate this unitary central layer of the stratum, or to grasp it in itself, by regression" – from the beginning, it "has several layers". The flow and growth constantly create "intermediate states" between compounds, substances, elements – or what have you. Ultimately, the barrier between the interior element and its external milieu breaks down as these intermediary "epistrata" "shatter its continuity … and break it down into gradations" (1987, p. 50). The implication is that the internal-external divide is fluid, or does not exist at all. Referring back to our humans-machines relationship that is composed by "internal, mutual communication" (1987, p. 458), the relevance of transduction is clear. There is the mutual, internal growth between human and technology as

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[4] Deleuze and Guattari cite Simondon's (1964) original French publication, *L'individu et sa genèse physico-biologique*. Wellner cites the English translation "The Genesis of the Individual" in Jonathan Crary and Sanford Kwinter (1992) *Incorporations*, pp 297-319.

strata build upon themselves, reaching outward, changing epistrata and the milieu, breaking down each other's continuity into gradations of in-between. The growth happens internally, not through the force of an external actant; it happens rhizomatically, not linearly; it is "involution," not evolution (Deleuze & Guattari, 1987, pp. 238–239). The co-constitution through transduction is unpredictable, unfolding in their own exploratory fashion (Wellner, 2022).[5]

Wellner maps these lines between Deleuze and Guattari and PhilTech, especially co-constitution, to explore becoming-mobile through cellphone use; this line of thinking brings us close to philosophical discussions of posthumanism, or transhumanism, and a rabbit's burrow I vowed to board up long ago (for this thesis). *If we were to take a peek inside*, we would find questions and discussion about the future of humanity in this technological co-constitution; whether cybernetic implants or continued dependence on external digital technologies that fundamentally change our thoughts and behaviour: our potential future as Borg.[6] There is something relevant here for the library and digital scholarship, though. How is the human-becoming-digital (or becoming-mobile, -network, -digitised, etc.) changing our behaviour with information and media, and how is the library and scholarship being called to respond? While the human is centred in these philosophical questions, Deleuze and Guattari's philosophy applies to the non-human as well. At the same time the patron and librarian strata are connecting with technology's strata, the library is undergoing a similar transduction. Further down in this review, we address the ways the library has connected with different instances of technology. In the

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[5] Wellner cites Don Ihde's (1999) *Technology and the Lifeworld: From Garden to Earth* when discussing "designer fallacy," and Bernard Stiegler's (1998) *Technics and Time: The Fault of Epimetheus. Vol. 1* for notions of the decentred inventor, where it is not the inventor's logic at work, but a techno-logic, to further implant Deleuze and Guattari in the PhilTech discourse.

[6] Referring, here, to *Star Trek*'s (1995-2001) science-fiction alien race that assimilates the humanoids of space into its technological hivemind, joining its quest for perfection. The question: are we on track to be Seven of Nine, the Borg-becoming-Human, remembering her humanity through Captain Janeway's ceaseless ethical and moral coaching; or, are we Humans-becoming-Borg, assimilated under one prevailing Unity that recodes our humanity?

following chapter, we will revisit these connections through Deleuze and Guattari's philosophy thoroughly.

There is overlap in the attention given to the bias within technology and in critical reflections within DH and LIS. The non-neutrality of the discipline is a central point of discussion for *Disrupting the Digital Humanities* (Kim & Stommel, 2018). Indeed, we find some recognition of the librarian's own problematic involvement with the never-neutral face of technology within the edition (Bourg, 2018). Safiya Noble (2018), who sits somewhere between LIS and DH, or perhaps Media Theory, is also cognizant of the non-neutrality of technology as it appears in Google's search algorithms that, during the period of her study, showed clearly racist underpinnings; Noble draws a line between the LIS professional's role in the development of web search technology via classification and these biased productions. LIS and/or DH scholars also draw attention to the ways our love of digitization – which is central to types DH scholarship and the role and skill set of the digital librarian and archivist – has encouraged new exploitative practices in labour acquisition (Lee, 2019). Within LIS, explorations of the library as a technology dip into PhilTech and STS discourse. Patrick Carr (2014) uses the Social Construction of Technology framework to interpret Ranganathan's five laws of librarianship, paying particular attention to the fifth: the library is an organism. Carr argues this framework imbues the library with a flexibility and adaptiveness through its co-constitution that turns away from determinism. The library is not constructed to do a particular thing in a particular way, but can be built alongside user needs. Tim Gorichanaz (2019), in another flow, argues an accumulation of technological items and processes within the library is shifting its function toward efficient transfer of information rather than encouraging questions and understanding. Finally, Allison-Cassin explores how "technologies employed in libraries act back on librarian

bodies and affective states and the ways these bodies are subsumed within and become part of information systems" (2020, p. 410); librarians, particularly women, become a node within the network.

Materiality of Our Digital Technologies

With PhilTech's problematization of the subject and (technological) object divide, we require a perspective that accounts for the entire framework that includes the ways humans are technological (have always developed and used technology as instruments) and that technology are human (constituted by our bias and not "a strange entity apart from us and overwhelming us") (Van Den Eede, 2016, p. 105). To approach this framework, Yoni Van Den Eede (2012, 2016) re-reads Marshall McLuhan as a philosopher of technology and draws a line between PhilTech and Media Theory (specifically, Media Ecology: how media are part of and affect our environments). As Jonas (1979) outlines, technology has form and content: form considers the movement of technology, while content considers what technology can do. Van Den Eede picks up on this ambivalence as a central issue to PhilTech, writing that technology is always both the thing in front of us that 'does' something, and part of a wider network of activity that hides from view, drawing a line to McLuhan's tetrad analysis of media (Van Den Eede, 2012, 2016). The perspective Van Den Eede provides is useful in remembering that technology and media are often one in the same. Harold Innis (2008), for example, finds that momentary stratifications of communication mediums are a means of studying bias within the rise and fall of regimes. He ultimately finds that the bias of a society is replicated in and by their mode of communication, either quite visibly through suppression and censorship, or more invisibly through a changing means of relaying information (or opinion) (e.g., the newspaper, telegraph, or radio). Innis' study of media is a correlative study of bias in technology that we see Winner pursuing. The study of

technology and the study of media are sometimes the study of one in the same thing, albeit through different traditions, methodologies, and discourse. A branch within Media Theory focuses on the materiality of digital media: its construction by human labour and its impact on the environment.

Earlier approaches to this question of materiality have broad perspectives. Gabrys (2011) leans into the immutability of e-waste as a point of investigation – how can we, through digital media's remnants, come to understand the process of materiality as it relates to our other ecologies: political, economic, social, etc. From another perspective, Maxwell & Miller show that media have always been "intimate environmental participants" by examining the history of media, generally, and show that the production of ink and paper since the fifteenth-century has had this underbelly of toxicity to humans and the environment (2012, p. 9). In extension of the idea that the dirty industrial past is not so distant from our clean digital present, we can also trace how industrial-era infrastructure is repurposed and used as guidelines in contemporary digital infrastructure (Crawford & Joler, 2018; Ensmenger, 2018). Additionally, places that have been historically sought and controlled for their resources are being revisited for the required minerals in digital tech (Ensmenger, 2018). Indeed, Jussi Parikka's (2015) geologically informed theory of media shows how the deep time of geological and technological processes, insights, and affordances have crystallised to form our digital media; in the same perspective, these media are also returning to the planet as future fossils, extending the deep time of our activity into the distant future. Parikka also draws a macabre line through a device's polished aluminum shine into the labourer via the metallurgic dust they inhale.[7]

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[7] Parikka's theory is heavily influenced by Deleuze and Guattari's (1987) chapter: "Geology of Morals".

In another flow of media studies, Lisa Parks (2015) seeks out a method of study for the infrastructure that hides out of the media's frame. In addition to thinking more "elementally" about media, she calls for more attention to the bodies behind media's infrastructure (2015, p. 357). In doing so, Parks adds to the discussion of overlapping forces driving media forward: the production of content, its trafficking, and its policing. As mentioned above, today's infrastructure depends on past infrastructure. But alongside this reuse, the digital technology is also replicating the ways overlapping economic, political, and social systems were taken advantage of by industrial era industry (Ensmenger, 2018). Lisa Nakamura (2014) details the experiences of Navajo women working in the Fairchild processor chip manufacturing plant located on the Navajo Reserve. In this example, we see those cultural spheres overlap to create a location and a workforce ideal for exploitation: tax and minimum wage exemption, governmental funding for training, cheap land lease, a Task Force on Indian Affairs encouraging industry and self-sufficiency, a Navajo leader enthusiastic about bringing the reservation into modernity, an immobile and vulnerable labour force, and the perspective of Navajo women as naturally docile, dextrous, and tuned to remember patterns based on their labour of love for their Indigenous rug-weaving craft. This perception of the women imbues the factory work with affective labour and as a natural fit for these women. Another example of such overlap is taken up by data centres: in Quincy, Washington, an agricultural labour force experiencing downturn, nearness to hydroelectric power, and again, cheap tax benefits make it the perfect locale (Ensmenger, 2018). Ireland is facing a similar perfect set of inviting conditions for data centres (Brodie, 2020). The political, social, infrastructural, and economic overlap that creates such enticing locations for industry is a form of "climate extraction," where "climate" means both a general set of created conditions and in the environmental sense when cool air and water are used as an integral part of

the centre's operation (Brodie, 2020). With data centres is the concern about their incredible energy usage – only 6-12% of which goes to powering active processes, the rest to cooling (over 40%) and redundancy fail-safes to reduce downtime (Monserrate, 2022). Huge amounts of water are used by data centres, even in drought-struck states in America (Hogan, 2015), and increasingly large tech players are scooping up more and more control over water sources in the name of stewardship, while investing large sums into other clean, renewable resources (Hogan, 2018). Machine learning, as part of the data centre environment, is also flagged as a source of substantial energy usage, even as it helps other industries meet their environmental impact goals (Monserrate, 2022). Kate Crawford (2021) thoroughly investigates the material and immaterial extraction (and dependencies) of the machine learning technology: natural resources, fuel, human labour, and infrastructures. With a political economy analysis, we see how artificial intelligence depends on the world's political and social structures, upholding those most dominant to maintain its funding. These authors are reaching for, or directly speaking to, the complex and overlapping ways our cultural systems and ecologies are at work (hidden) behind our digital media.

LIS scholarship does not tend to engage with the materiality of technology. A notable exception might be Lisa Levesque, who examines the academic library's technology through Bruno Latour, Actor-Network-Theory, and the "black boxes that feign neutrality, and forgotten materiality" (2020, p. 2); she finds that the fetishization of technology makes invisible much of the librarian's skill and labour. But, for the most part, early concerns focus on the carbon footprint of digital information services (Chowdhury, 2012; Fairweather, 2011; Tomlinson, 2010), with suggested solutions by working toward more efficient design and usage to mitigate the footprint (Chowdhury, 2016). An alternate perspective calls attention to the degrowth

mindset, which acknowledges the contradiction and impossibility of perpetual growth with finite resources (Civallero & Plaza, 2017). At the particular intersection of librarians and technology's e-waste, Vivien-Elizabeth Zazzau (2006) and Jennifer Poggiali (2016) attempt to solve the librarian's dilemma. Zazzau first situates her concerns within her larger professional obligations, citing the Association of College and Research Libraries' information literacy standards which expects an information literate student to understand the economic, legal, and social issues that are a part of information and information technology. While the environmental impact is not explicitly stated, Zazzau argues it is a vital concern nonetheless, especially as demand grows for faster and better technology. Academic institutions are particularly important to look at because of the volume of technology on which they rely. Having situated her concerns in her professional frame, she suggests the integration of ethical criticisms of e-waste into the classroom alongside engaging with the academy to understand its acquisition and disposal practices and ICT reuse initiatives. A decade later, Poggiali tackles the same problem through a pronounced ethical lens, and likewise situates her concerns within professional obligations. She sees the profession struggling at the same crossroads I investigate here: librarians embrace new technologies in order to provide access to information and further engagement with community, but to what extent are the ethics of its manufacture and disposal considered? "Should our local concerns outweigh global considerations, such as sweatshop labor, natural resource exploitation, and the pollution and illness that can result from the manufacture and disposal of these gadgets?" (2016, p. 581). Her solution is to apply a consequentialist perspective: to weigh the good against the bad in the frame of patron needs, and to make meaningful and informed purchases.

My research is most directly informed by the social awareness of technology elucidated by PhilTech (and STS, to a lesser extent), the materiality of technology as examined by Media

Theory, and the dearth of literature within LIS discourse addressing the profession's own perception of and responsibility to the technology's progression and its problematic materiality. The rest of this literature review, then, attempts to fill in some of these gaps – to map the part of the rodent's burrow within the library's transduction with technology, and the development of professional values in social responsibility and sustainability. By looking at the values, I follow Zazzau and Poggiali in grounding my analysis within the profession's framework.

Transduction of the Library and Technology

Librarians are strongly associated with books or other information-containing artefacts, as collectors, guards, organisers of these things, and as mediators to those materials. And the librarian has always had a close connection with the development of society and heritage and culture because of this association. However, the books alone are not responsible (although key players), since the librarian plays a significant role in cultivating an atmosphere of conversation that nudges the population in certain directions. These books and other artefacts are tools to be used toward an end, but are not the end themselves nor the purpose of the librarian, even if part of the librarian's function (Lankes, 2011). The exact purpose of the librarian is often discussed and rarely agreed upon. Invariably, though, arguments point to something that happens beyond the maintenance of cultural artefacts, to something more ephemeral and emergent – the contribution to community, safeguarding education and learning, democracy, and freedom of access.

Each new stage in writing and its containment means new methods, roles, and values for librarians. An iterative process, as John Sutherland writes, "viewed in its half-millennial totality the history of the printed book in Britain—its manufacture, distribution and reception—present a pattern of precariously achieved stabilities lasting decades, sometimes centuries, punctuated by

seismic shifts and, after turmoil, new long stabilities emerging to replace the old" (2015, p. 124).

The papyrus of Alexandria enabled quick copying and distribution, and the Ptolemaic regime seized an opportunity to monopolise knowledge by embargoing incoming documents to copy or retain, hoarding the pulp used for papyrus, and by sponsoring academics (Battles, 2003). The sponsorship casted a shadow of influence over the poets especially, encouraging a particular cultural ideal in looking back to the ancients instead of experimenting with new expressions (Hall, 2015). The role of librarians in molding cultural outlooks continues through the mediaeval era's focus on religious texts and the librarian's role as jailer, rather than purveyor. Reading was for the select few, difficult to attain for others, and the words held by books were precious (Gameson, 2006; Sharpe, 2006). Religion dominated the cultural outlook and librarians were its custodians. Personal collections were signs of wealth and distinction (Pettegree, 2015), a display of morality and culture (Battles, 2003) until the manual printing press made them attainable by everyday folk and an "everyday aspect of life" (Pettegree, 2015, p. 75). The industrialised printing press produced books on an unprecedented scale, and gave the librarian a new connection to influencing society in the modern era (eighteenth- and nineteenth-century). The librarians took on a "Promethean impulse," viewing themselves as beacons of morality and good behaviour, shepherding wayward readers through the new deluge of written words and their questionable content (Battles, 2003, p. 120). Librarians became a "civilising" force (Gerolami, 2018, p. 4) in this new "profoundly ideological" era of polite and structured society (Allan, 2015, p. 117). The librarian became efficient (Gorichanaz, 2019), with their philosophy "revolutionized" (Ranganathan, 1931, p. 74). Books turned common in their abundance and their use was prioritised over storage, open to more people rather than the select few, and challenged the librarian to organise piles of material to enable easy access and retrieval by librarians and

eventually readers themselves (Ranganathan, 1931). The library was opening up to readers, becoming more transparent (Battles, 2003). With the Internet, the library's institutional walls dissolved as patrons accessed records from home; information was freed from its physical record and location (Hicks, 2014a).

The world's transition to digital with the Internet and ICT began another seismic shift on par with the printing press, causing another redefinition of information, our understanding of it, and our relationship to it. The Information Society puts information at the centre of power, economy, and social life (Dutton, 2003). Whereas librarians in the Industrial Society were a civilising force working to educate and prepare the common population to work and be good citizens, the Information Society brought new responsibilities and concerns for the librarian: the digital divide, privacy, information literacy, and social responsibility in addition to adapting policies and practices from print and physical to digital and online. The Internet threatened to supplant the librarian, and is likely a perspective many people still hold, figuring a Google search is comparable to the librarian's job. Librarians had to pivot and reconceptualize their skills and roles anew in the digital era (Sharp, 2002), which meant evolving with a flexibility that matches their patron's changing behaviour (Ershova & Hohlov, Yuri E., 2002) and making space for themselves in a network of other information professions and cultural heritage keepers (Currall & Moss, 2008; Gorman, 2015). However, within this pivot, the library is critiqued for also adopting new goals of efficiency into their strata, integrating the accelerated efficiency promised by ICT: 'information' becomes an external thing to search for, find, and deliver rather than a process of open questioning (Gorichanaz, 2019).

Concepts and treatment of privacy are re-evaluated within this digital domain as tracking and collection of patron data becomes part of "library 2.0" services (Zimmer, 2013). Recent

studies focus on the prevalence of data tracking software on library websites or services offered through the library, the visibility of the library's privacy policy and whether patrons are able to opt-out of data collection, and the reality that vendors and third-party services have fundamentally different values regarding privacy (Gardner, 2021; Marino, 2021; O'Brien et al., 2018). One ameliorating activity suggested by the studies is for the librarian to engage patrons in digital privacy knowledge and tactics. But, it is clear the librarian's responsibility to privacy is complicated as layers of (dis)interest overlap: the clashing of library and vendor interest, the patrons behaviour, and a seeming lack of know-how (or desire) to provide more private and secure access to the Internet.

From Print to Digital: The Case of Ebooks

The transition from print media to digital media is best reviewed through the acquisition of ebooks. Early on, the ebook's interruption in the library model invoked questions: should the library provide e-readers for in-building use, or lend e-readers out, as was done with VCRs? Will interlibrary loans be an option? How is pricing going to be managed (Lynch, 2001)? And more to the core of the librarian's purpose, will e-book licensing make room for fulfilling fair use, free inquiry (and the associated privacy), and preservation (Lynch, 2001)?

Libraries certainly need to respond to the shifting tides created by ebooks while not losing sight of the enduring values meant to guide policy and practice. Indeed, ebooks challenge the library's ability to provide, manage, and preserve culture and knowledge (Lynch, 2001; Simone, 2012), which is one of the library's enduring values (Gorman, 2015). With publishers favouring timed and usage capped licences, the library has less access to perpetual copies and has to regularly reassess the value and cost of re-purchasing the licence (Enis, 2018; Simone, 2012). This model pushes libraries toward being a collection of best sellers rather than an

enduring record of culture and knowledge (Enis, 2018). The population most disadvantaged by this interruption are those unable to afford e-readers and ebooks themselves when the library inevitably discontinues a licence agreement because of low demand and insufficient funds to repurchase (Simone, 2012). Librarians need to bring these values to the table when negotiating licence deals with publishers, as it is clear the two parties can have polarising views (Algenio & Thompson-Young, 2005). It is also clear that ebooks are being treated too similarly to print lending, and a more nuanced approach is required. An ebook checked out automatically advances the counter up one toward the licence cap, regardless of whether the ebook is opened, and creates a significant amount of waste in financial resources because the library is forced to renew the licence more frequently (Lieu & Zhao, 2019).

Both Brett Bonfield (2012) and Andromeda Yelton (2012) recall the outsourcing of serialisation and the long-lasting effects it has had on access and control of periodicals and journals, and warn that an unexamined acceptance and integration of ebooks (as per publisher's standards) can lead to similar interruptions in the library's ability to uphold its values while fulfilling its role in society. The only type of ebook that properly upholds the librarian's values is one that is free from Digital Rights Management (DRM) or provides some means of ownership for the library (Bonfield, 2012). Both also seek out alternatives to the ebook model, advocating for software free of DRM tools, and in Yelton's case, contributing to the start-up of unglue.it, a non-profit organisation dedicated to freeing ebooks, in price and DRM (2012).

The Information Society, the Librarian, and Immaterial Labour

Without question, our humans-machines relationship has accelerated a new arrangement of labour. As an extension of Marx's framework for the capitalist production of surplus value through the manual labour of working-class citizens, immaterial labour attempts to create the

new worker subject in a broadly defined post-Fordist society (Dyer-Witheford, 2001). One face

of immaterial labour is the homogenization of labour with and through computers, becoming

intellectual and analytical – opposite to the concrete heterogeneous skills of book making,

weaving, masonry, etc. (Hardt & Negri, 2000, p. 292). Additionally, immaterial labour creates

value for commodities through informational or cultural content; these commodities are not

consumed in the typical sense, but enter a cycle of production by creating and extending the

ideologies, cultures, and social relations of the consumer (Lazzarato, 1996). This cycle of

production inscribes the consumer into the product at the very start of its conception (Lazzarato,

1996, p. 140): in other words, the dual process of machinic enslavement. Value does not come

from the physical manipulation of raw material into a product, but the manipulation of relations

into desire for the product (i.e., branding). For example, the value attached to and produced by

Apple products is, arguably, more social and cultural than through its physical composition. In

another flow, products that use 'greenwashing' strategies are utilising and reifying the particular

relation of eco-friendly consumerism to create additional value in the product. Consumption

begins, then, with information (Lazzarato, 1996).

Affective labour is the second face to immaterial labour. It is the application of a feminist

perspective and considers the creation and maintenance of social networks (i.e., community)

(Hardt & Negri, 2000, p. 293). This is not the introduction of a new concept, but adjusting

immaterial labour to also account for how affective labour enables the production of capital by

centring biopower: "power of the creation of life; it is the production of collective subjectivities,

sociality, and society itself" (Hardt, 1999, p. 98). Within this flow, there is acknowledgement of

the gendered, and sometimes racialized, aspect of affective labour within the maintenance of

online spaces (Humphreys & Vered, 2014; Huws, 2014; Nakamura, 2015). As we will see in the

librarian-specific discussion, immaterial labour, including (if not especially) affective labour, is often seen as feminised and difficult to quantify through measurable results that stakeholders like to see.

Before moving on, a problem with immaterial labour ought to be addressed. The concept collapses disparate work forces into one of the same, "from programmers to prostitutes," and neglects the "material and immiserated" workers that our digitized world still depends on for extracting and manufacturing our material goods (Dyer-Witheford, 2001, p. 76).[8] Of course, the distinction between affective labour and material labour breaks down in some scenarios. The Navajo women prized by Fairchild's semiconductor facility have their material labour entwined with an affective recoding of their skill sets – their "innate racial and cultural traits," and knowledge in rug weaving are recalibrated to position the women as perfect labourers for the fine detailed work and memorization of patterns (Nakamura, 2014). Rather than trying to find radical action through this too-broad subject, Dyer-Witheford argues it is within the immiserated labourer we can see points of radicalised action (e.g., revolts, resistances, strikes). The hope is that immaterial labourers can converge on these actions in solidarity and recognition of shared belonging to a system prioritising profit and deregulation over the labourer's life (i.e., the "race to the bottom"). In other words, solidarity-via-identification, even if the identification is only in acknowledging our belonging to the conditions that lead to deaths and misery of others (Rothberg, 2019).

Immaterial labour has been picked up within the LIS discourse, sometimes extending to the university in a wider context. This discourse, especially affective labour, is closely aligned

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[8] Dyer-Witheford cites a presentation given by George Caffentzis that addresses the "renaissance of slavery." For a published version of this rather heated reply to Hardt & Negri, among essays of similar subjects, see George Caffentzis, 2013, *In letters of blood and fire, work, machines, and value*.

with the feminization of librarianship. The ethic of justice and care are logical modes of affective labour within librarianship, albeit occasionally at odds: an ethic of justice recognizes a consistent and universal commitment to service, while the ethic of care is aware of differing situations for patrons that may require adjustment in practices (Fox & Olson, 2012). An ethic of care might be pursued by serving people experiencing homelessness, creating diverse perspectives within collections and programming, acknowledging that grey literature may be the only sources available for marginalised topics, and perhaps tackling the larger problem of authority control in classification that re-enacts particular power relations (Fox & Olson, 2012). Shana Higgins (2017) applies an ethic of care to reconceptualize the impulse behind the American Library Association's core values of access and service, which are often positioned as neutral and universal objectives. Higgins argues that from a feminist standpoint perspective, these core values are driven by "social responsibility" and "the public good" in the way access to collections, spaces, and services should be made available – that is, by mobilizing the feminized, affective labour to recognize and respond to the different needs within a community. In a more critical flow, the feminization of the profession and emphasis on affective labour are wrapped up in customer satisfaction, part of which involves a particular pleasant demeanour and love for the job; this type of labour is hard to measure, but contributes to the company's financial value (Shirazi, 2017). Indeed, with the reference desk and other forward-facing positions filled by women, their bodies stand-in as a node and interface to the library's data flows (Allison-Cassin, 2020).

Within the academic frame, the university benefits from the library and librarian's ability to reproduce and reify within students the academic culture (Shirazi, 2017; Sloniowski, 2016), and a step further, to reproduce and reify the immaterial service industry within students (who

are the new labour force) (Popowich, 2019b). Librarians are mediating information through ICT in nearly all aspects of their jobs, which has an additional invisibilizing effect of their labour – search results appear as if by magic, negating the librarian's training and expertise (Levesque, 2020). Additionally, the librarian's immaterial labour is easily overlooked because it cannot be concisely defined, measured, and displayed (Sloniowski, 2016), or is discounted because of the efficiency of technological tools (Levesque, 2020), compounded by the integration of these tools into every aspect of librarianship (in the academic sense, especially) (Popowich, 2019b). Additionally, with information being decontextualized and dematerialized by the discovery services, the value and perception of labour likewise recedes (Levesque, 2020).

The Librarian's Changing Identity Through Core Values

David Lankes (2011) centres the librarian within the purpose of librarianship; not the building or its resources. The driving force of the library is the librarian's mission to facilitate the creation of knowledge within their community toward the improvement of society, and the librarian remains even as the library transitions into new stratifications. Emily Ford (2012) extends Lankes' spirit, in some ways, by noticing a lack of cohesion within librarianship's philosophy, identity, and sense of purpose, pointing to the concept of the library as a shapeshifter (Booth, 2010). Ford's point is that librarianship needs to cultivate a curiosity about its practice, reflecting on its purpose to assist in making decisions. This is, I think, where a discussion of values benefits – as something to look back to and base decisions on.

Michael Gorman defines "values" from a few angles, but to be succinct, I choose this one: "A value system is a set of those beliefs and ideals that has been adopted and/or has evolved within a group as a system to guide actions, behaviors, and preferences in all situations" (2015, p. 1). I appreciate the inclusion of adoption and evolution, as we are dealing with changing

arrangements of librarianship, and that values are acknowledged as influences for decision making. The core values are, however, intentionally vague and provide only a framework from which to make decisions and imbue a sense of professionalization (Hicks, 2014a, p. 169). Librarians seem to generally agree that these professionalised codes are sufficient in adapting to challenges digital technology poses to the profession (Hicks, 2014a, p. 183). In reviewing the impacts of increasing technology on the profession's identity, there is a prevailing sense of anxiety at what new technology brings (and potentially replaces (i.e., the librarian)) that leads to constrained integration, alongside an enthusiasm for future possibilities (Hicks, 2014a).

Gorman, for instance, agrees that digital technologies are useful tools but that unfettered enthusiasm has turned librarians away from values in the prioritisation of information and efficiency. To be noted, Gorman writes from a negative deterministic view of technology with grandiose claims such as "the future of a civilization based on learning" being at stake, that libraries will "decline into insignificance by following the materialistic, mechanistic, and–ultimately–trivial paths of 'information' and management" (2015, p. 21), and that libraries tend to be "gripped periodically by fads and manias, of which the obsession of some with the immanence of the all-digital future is merely the latest and most blatant" (Gorman, 2015, p. 220). As off-putting as these remarks can be, there is something to acknowledge for the way technology, digital technology especially, has a way of blinding us. It is in its nature to distort our vision and hide aspects of its workings in the distance, as philosophers of technology and media have explored.

The values of interest to this thesis are social responsibility and sustainability, and are reviewed below. I hope by exploring them here, and within the context of digital technology's

concerning practices manifested through its materiality, we can engage in that reflexive curiosity about the library and librarian's role in digital technology's industry.

Social Responsibility in Librarianship

Librarians have historically been involved in the social progression and well-being of their communities, through its nature as a public institution that provides access to literacy, training, and information – that Promethean impulse for moral shepherding in the eighteenth- and nineteenth-century librarianship, for example (Battles, 2003, p. 120). This impulse is tied to the shifting liberal ideology that favoured an individual's freedom to self-improvement, and which had a profound influence on librarianship's own ideology as a gateway to that improvement (Birdsall, 1988). On into the twentieth-century, this era of librarianship is guided by a traditional-modernist epistemology that understood the content of the media has a direct and causal effect on an individual's behaviour (i.e., good books produce good citizens) (Knox, 2014) and we see the library in a position of power and control, as understood through Gilles Deleuze's philosophy of control societies (Gerolami, 2018). However, there is a discernible shift in this ideology in the mid 1900s, building through America's period of anticommunism, toward an agnostic-postmodernist social epistemology that acknowledges we cannot know the effect any given work will have on a person's development (Knox, 2014). Here, the idea of intellectual freedom takes hold. The citizen has the ability to make their own decisions about content and ought to have access to a variety of content. Neutrality is the best guiding principle to offer that range of content and to not inhibit the citizen's freedom. At the same time, the library has an ingrained position within society as an influential force. The responsibility of this influence was questioned during a period of rising social conscientiousness in America, centred on their involvement in the Vietnam war; librarians were asking whether their social responsibility

extended beyond offering a building and quality neutral resources (Raymond, 1979). Tensions

rose between the ideals of intellectual freedom (and its close association with neutrality) and

social responsibility throughout the founding of the Social Responsibility Round Table (SRRT)

and the acceptance of social responsibility as a core value. These tensions continue into the

contemporary discourse as librarians try to come to terms with the varying ideologies of the

profession alongside critical reflections on its history and practice, and a lack of guidance in both

the ALA's documentation and IFLA.

Toni Samek (2001) provides a thorough account of the turbulent period in the ALA

between the late 1960s to mid 1970s when librarians began calling for a change in the

profession's attitude toward social responsibility. Some librarians wanted to make more clear

how social issues such as race, gender, and class impacted librarianship. Some librarians opposed

this emphasis on social responsibility because it threatened the neutrality of the institution and

potentially the intellectual freedom of patrons. Samek (2001) and Douglas Raber (2007) note that

the ALA, despite adopting the value, drew out the process by creating investigative

subcommittees that ultimately de-clawed the SRRT's initial proposal. In part, Raber (2007)

points to the lack of cohesion and clarity in the SRRT's discourse during this period as they

struggled to define their philosophy clearly, and to distinguish the philosophy from practical

application. Samek (1996, 2001), on the other hand, argues David Berninghausen's unabating

dispute and accusations of censorship had successfully scared the ALA away from meaningfully

addressing social responsibility in librarianship. Berninghausen published "Social Responsibility

vs. the Library Bill of Rights" in *Library Journal* in 1972, and later included the article in his

book, *The Flight From Reason* (1975). He saw this shift in attention to be a threat to the central

principles of the Library Bill of Rights. In his eyes, the librarian would become a deciding moral

voice, threatening the intellectual autonomy of the patrons, and eventually creating an imbalanced library aligning with those moral decisions. Berninghausen supported an idealised library that respected the patron's autonomy by making available all perspectives. In addition to the librarian becoming a moral director, he cited concerns about the librarian also needing to become subject experts, and that in matters such as climate change, that just was not realistic. Berninghausen feared a slippery slope that would lead to preferential treatment of works to advance a librarian's beliefs, eventually leading to censorship of counter-material.

In 1973, *Library Journal* published rebuttals to Berninghausen's first article. These librarians were invested in the SRRT and criticised Berninghausen for misinterpreting the movement altogether, specifically for suggesting the SRRT is anti-intellectual freedom, pro-censorship, and in his unyielding stance that intellectual freedom is the paramount guiding ethic of the profession (Samek, 1996). The librarians point to how, historically, the library has been used as a social force outside of this supposed neutrality, and that the line between non-library issues and library issues is far more difficult to distinguish in reality (Wedgeworth et al., 1993).[9] Indeed, a more socially responsible interpretation of the library's function understands how varied social issues do impact librarianship (Arthur Curley). As Clara Jones responds, librarians are "inextricably interwoven with the sociology of the city…" and within this tapestry, social issues such as "racism, poverty, war … are manifestations of the sickness which interferes with the free flow of ideas in our society…" (Patricia Schuman). Succinctly, social issues that inhibit a population's ability to participate in the consumption and production of information or knowledge is, at its roots, a librarian's issue. Responses go on to accuse Berninghausen's

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[9] These responses to Berninghausen were originally published in *Library Journal* on January 1, 1973, p. 25-41. In 1993, the journal republished a trimmed version of Berninghausen's original essay alongside these rebuttals. I attribute authors to their 1973 statements in text or parentheses, but I am referring back to this 1993 republished article.

arguments as "myopic professionalism" that supports "intellectual freedom for those who have power while denying it to those who are powerless" (Jane Robbins). In later reviews, Berninghausen is accused of his own extremism (Joyce, 2008). Even John Wenzler (2019), sympathetic to the neutrality debate, suggests Berninghausen was responding with the same extremism he faced during McCarthy era witch hunts while on the ALA's Intellectual Freedom Committee. The inflammatory nature of his book's title combined with his probable reactionary instinct at what he saw as an attack on his Committee work, shows his own unyielding perspective and inability to see the potential of a socially responsible approach to librarianship that does not preclude autonomy of the patron and open debate (Wenzler, 2019, p. 59).

The social responsibility debate returned in the 1990s and instigated a new era of reflection on the librarian's philosophy, professionalism, and practices. At its base is the recognition that striving for "ideal neutrality will unconsciously adopt a dominant value orientation, one all the more tenacious for being unexamined" (Blanke, 1989, p. 39); a "cocoon-like self-constructed reality" that hides their own hierarchy of values, which go on to affect real library services such as collection development, programming, and outreach (Wiegand, 1996, p. 2). During the AIDs pandemic, for example, an academic librarian notes a distinct lack of relevant information being provided by librarians and suspects deep-rooted societal and cultural biases about sex and sexuality to be inhibiting the librarian (Segal, 1991). With the profession "broadly concerned with literacy, intellectual freedom, equity of access to information, and the preservation and dissemination of cultural production," librarians ask how it is they cannot be involved in issues that impede the development of human culture (e.g., civil rights, socio-economic conditions) (Buschman et al., 1994, p. 576). To be sure, these issues are encompassing and complex, and invites overextension of resources (Uricchio, 1994). Overextension is a

sensible concern, but librarians show that by examining the assumed values of librarianship, they can make relevant and actual changes to the profession.

Subject headings, for example, are an area of immense meaning making because they control how information is found while framing relations in a particular worldview; "it is a means of structuring reality. It imposes a pattern on the world that is meaningful to the namer" (Olson, 2002, p. 4). Hope Olson (2002) thoroughly examines the power in subject headings and uses the experiences of Marielena Fina who finds Latina and Latino authored works categorised under "culturally handicapped" and "socially handicapped" as a starting point (1993, pp. 269–270). Indeed, Sanford Berman (1993) has been criticizing the globally used Library of Congress Subject Headings (LCSH) since at least 1971 for its ethnocentrism that is clear in headings relating to race, nations, religions, politics, class, gender, sex, and age. Criticisms from the profession particularly pop up alongside changing political and cultural milieus. The end of apartheid in South Africa, for example, was followed by criticism about equity in access being more appropriate than equality (Dick & Burger, 1995). Rising awareness and discussion about Indigenous peoples has the profession questioning the culture's treatment in subject headings (Kam, 2007), and the use of euphemisms when handling North America's history of their genocide (Dudley, 2017). The Dewey Decimal Classification is likewise criticized for being value-laden, especially when viewed through Critical Race Theory (Furner, 2007). Additionally, Emily Drabinski (2013) applies queer theory to the catalog, suggesting that it will never reach a finalized state and that there is value in teaching library patrons how to engage with the catalog through an understanding of its complexities and biases. Common to the criticism is the need to recognize that 'neutrality' is already imbued with cultural values, and there is a responsibility to

reflect on how those values are shaping classification systems, and therefore the worldviews that construct our real-world relations.

Critical librarian discourse develops from this acknowledgement that LIS theory and practices are imbued by the dominating social and political milieus. Karen Nicholson and Maura Seale (2018) offer a thorough review of critical librarianship's theoretical beginnings and its subdomains. We may also look at Wayne Wiegand's call for reflection on the profession's unexamined biases and values. He put together a panel discussion to examine the "unquestioned absolutes" that exist in the Library Bill of Rights, with the proceedings published in *Library Journal* (Wiegand, 1996). He later applied Michel Foucault's *Archaeology of Knowledge* to the ALA's history to show how the association's history has always been influenced by world politics and power; he calls into question the "tunnel vision and blind spots" that exist within neutrality (1999, p. 3). In a 2003 edition of *Library Quarterly*, LIS scholars follow through with Wiegand's call to apply interdisciplinary theory to the profession: to reframe their perspective to see the "library in the life of the user" rather than the "user in the life of the library" (Wiegand, 2003, p. v). Gary Radford (2003) further explains how Foucault's archaeology is relevant to librarianship – which is, if the librarian only ever uses the librarian discursive formations, they will only ever see history in the same light. By viewing the past through other forms of thinking and study, the librarian illuminates the blind spots – to make the profession's familiar history strange. John Budd (2003) and Douglas Raber (2003) each show how the library and librarians are contributors to cultural production. Pierre Bourdieu's social theory of symbolic power is applied to libraries to explore the ways building community, and influencing its desires and expectations through resource selection, can be an intentional and unintentional mode to producing that community's culture (Budd, 2003). Similarly, through Antoni Gramsci's theories

of hegemony and the organic intellectual, the librarian is born from the dominant social, political, and economic powers (i.e., hegemony); they become organisers of information and of culture, effectively reproducing the dominant powers (Raber, 2003). By being immersed in hegemony, organic intellectuals develop blind spots and limitations to critical questioning (ibid). Additionally, the individual librarian depends on the larger whims of cultural and social relevance and any transgressions are naturally corrected by those forces (i.e., bullied or sanctioned) (ibid). The silver lining Raber highlights from Gramsci's writing is that hegemony is never immutable and human action is indeterminate. Kevin Rioux encompasses many of these insights into librarianship's relationship with power and writes this compelling final assumption: "[t]he provision of information services is an inherently powerful activity. Access, control, and mediation of information contain inherent power relationships. The act of distributing information is itself a political act" (2010, p. 13). The sentiment here is similar to Gramsci's organic intellectual, but where that feels more passive – being flung around by the hegemony – Rioux gives the librarian a more active sense. There feels to be permission or enticement to be transgressive.

Nicholson and Seale (2018) suggest this era of scholarship in the late 1990s and early 2000s lays the foundation for critical librarianship as its own discourse, encompassing subjects such as neutrality, anti-intellectualism, social justice, and the public good. It approaches these subjects through critical race theory, postcolonial theory, Marxist theories combined with feminist critiques, and social justice-oriented activism. It seeks to pursue a "socially just, theoretically informed praxis" (Nicholson & Seale, 2018, p. 2). This foundation includes the scholars just discussed, as well as the founding of the Progressive Librarians Guild in 1990, which spoke to concerns about business-minded practices influencing the profession and

disinterest in questioning the status quo in order to maintain neutrality (Progressive Librarians Guild, 2022). Library Juice Press also appeared in 2006, a publisher specialising in the critical study of LIS (Litwin Books, n.d.). As with most scholarship, critical librarianship can be divided into practical and theoretical – although not always mutually exclusive categories. The more practical topics include critical information literacy (Gregory & Higgins, 2013, 2017; McNicol, 2016), instruction of LIS professionals (Roberts & Noble, 2016), guiding the librarian and social justice advocate (Bales, 2018), and compiling successful examples of social justice work (Mehra & Rioux, 2016). An earlier collection of essays published by the Progressive Librarians Guild examines, on the theoretical side, issues such as the reach of corporate power into libraries (McDonald, 2008), whether it is the librarian's social role to accept the dominant powers or to investigate the supposed facts (Durrani & Smallwood, 2008), a rather inflammatory reminder that Dante's hottest place in hell is for neutralists (Good, 2008), and how viewing the librarian as a professional helps solidify it into "the myth of neutrality" – professionals are, after all, beholden to certain standards (Jensen, 2008). More recent scholarship asserts bolder critiques, such as the liberal democratic ideology and its ability to mask the presence of systemic oppression (Popowich, 2019a), especially regarding white supremacy (de jesus, 2014; López-McKnight & Leung, 2021), joined with the tendency to venerate the librarian role which protects it from criticism (Chiu et al., 2021), and finally, the suggestion that not only is there the myth of neutrality, there may also be the myth of "self-directed activity of the liberal individual" (i.e., intellectual freedom) in the face of dominant power's manipulation of (mis)information and prohibitive cultural structures affecting parts of the population (Popowich, 2020, p. 51). In a contrary perspective, John Wenzler (2019) maintains that a balanced collection, that has assessed and filled its content gaps, remains the most appropriate way for librarians to respond to the

moral dilemma created by the sometimes contradictory professional values. Wenzler recognizes that the "deeper political assumption implicit in the platitudes so confidently expressed in mid-twentieth century ALA documents" may not hold true today (2019, p. 64), thinking of the United States' recent political abuse of misinformation and propaganda, but asserts that "hope and faith" in the patron's critical judgement should still guide librarianship (2019, p. 72). Em Claire Knowles, participating in an ALA panel on neutrality, would agree with Wenzler and offers a distinction between passive neutrality (often seen as indifference) with the active neutrality librarians ought to pursue (American Library Association, 2018). Active neutrality includes transparent content collection procedure, a working environment in which diverse opinions can be expressed, and the intentional inclusion of diverse perspectives when it comes to writing policies. Knowles suggests that this form of engaged neutral librarianship is actually "the first rung on the ladder to advocacy and social justice." Neutrality, then, is not completely opposed to social justice.

However, Knowles' vision is a lofty one that wants to see the library-as-an-institution become less biased in its fundamental processes. Counter-arguments in the debate point to the finite resources that limit the librarians ability to curate a balanced collection, and that accepting content that discusses (or encourages) harm to a segment of the population is easier to do when you occupy a privileged position (Emily Drabinski).[10] Additionally, librarians respond to unique community needs (David Lankes), are themselves affected by social and political issues (Kelvin Watson), and that the library-as-an-institution is already disproportionately white (Chris Bourge). Others wish to see neutrality stricken from the library's professional values because it is impossible to be neutral and to sustain a neutral collection; attempts to do so substantiates

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[10] Names in parenthesis refer to position statements from the ALA (2018) neutrality panel.

vocational awe and the undue affective labour required (Chiu et al., 2021). Ultimately, there is a

dearth in pro-neutrality discourse and it is uncertain whether the critique of neutrality has

successfully proven its point, or if librarians simply take neutrality as an obvious and steadfast

virtue to the profession (Wenzler, 2019, p. 57). There is a clear tension between the competing

ideologies (Shockey, 2016), and while critical librarian scholarship floods the space, Dani Scott

and Laura Saunders (2021) show that public librarians generally agree that neutrality is

important to the profession. However, they are less certain how that should be enacted and

struggle with the nuances: is it about objective fact or not taking a side? Is climate change more

factual than social movements? Is it less political? How does morality factor in when it comes to

harmful content?

Ultimately, both ALA (2021d) and IFLA (2012) maintain a separation of personal

convictions from professional duties, while both acknowledging that libraries have a social

responsibility to the well-being of society (quite broadly) (American Library Association, 2019;

International Federation of Library Associations and Institutions, 2012, p. 1). However, neither

offer clear guidance for how to navigate the ethical or moral dilemmas created when values are

in conflict.

From the Green Library to Sustainability as Core Value

Conversations about environmental librarianship were happening in the ALA circles

during the 1970s, centred on disseminating environmental information and how librarians can fill

a supporting role (Jankowska, 2011). From out of the SRRT, the Task Force on the Environment

(TFOE) was formed in 1989, continuing the same themes of access to information and support

through information literacy, eventually turning to discussing green initiatives within the library

throughout the 1990s (Jankowska, 2011). These themes made it into publications as well with

Wilson Library Bulletin's special edition on librarians and the environment in commemoration of the 20th anniversary of Earth Day in 1991 (Antonelli, 2008). In 1992, *The Green Library Journal: Environmental Topics in the Information World* started publishing with its first issue filled in by TFOE members (Antonelli, 2008). This journal was quickly replaced by *Electronic Green Journal* in 1994 with an international scope and purpose of distributing educational environmental resources that are both practical and scholarly (Jankowska & Griego, 1994). In Monika Antonelli's (2008) overview of the green library movement, the author notes a dearth in librarians discussing environmental issues between 1993 and 2003; however, *Electronic Green Journal* regularly published environmental resources, selected bibliographies, reviews, and tips for librarians to enact their environmental philosophies during this period, and beyond, continuing the same themes of information access, resources, and implementing green initiatives that began in the 1970s. Beyond these themes were a breadth of ideas being contributed to the environmental LIS scholarship, including bolstering resource collection through partnerships with local environmental community groups (Feldstein, 1996), critiquing the Library of Congress subject headings (de Groat, 1997, 1999), calling for an elevation of sustainable world views (Reitan & Reitan, 1998), sharing library driven environmental information projects (Johnson & Oliver, 1999), and discussion on contemporary trends' impact on the library's sustainability (including ICTs, global ecology crisis, and shifting individual and society values) (Gable, 2001), to name a few.

With small steps such as disusing chlorinated paper in 1997, librarians replicate the principles they discuss into the new millennium (Jankowska, 2011). Along with librarian-driven green initiatives, scholarship turns to the physical building. The green library, as a building, shows librarians as leaders and role models in sustainability (Antonelli & McCullough, 2012;

Barnes, 2012; Loder, 2010; Stoss, 2010; Townsend, 2014). Sustainable building design and

practice becomes part of IFLA's guidelines for library buildings (Wagner, 2007), while the ALA

also introduces a partnered award with American Institute of Architects to recognize outstanding

library buildings, which includes incorporating environmental sustainability (Canadian Architect,

2020). Librarians are also inspired by the 'reuse' of recycling and turn to repurposing old

buildings into new libraries (with the bells and whistles of sustainable design) (Hauke et al.,

2021; Hauke & Werner, 2012). But sustainable design should not be defining features of a green

library, only a green building (Sahavirta, 2018). Such a focus on sustainably designed buildings

immediately discounts older buildings or underfunded libraries that may otherwise be

successfully promoting sustainability in its community (Sahavirta, 2018). The green library

should follow a "green mission" (Aulisio, 2013), that includes environmentally minded

information literacy programming (Gupta, 2020; Jankowska & Marcum, 2010; R. Pun, 2017;

Safyan, 1990; Stark, 2011; Zazzau, 2006), resources (Beutelspacher & Meschede, 2020; Gupta,

2020; Sahavirta, 2018), and community partnerships (Beutelspacher & Meschede, 2020; Chance,

2019; Feldstein, 1996; Sahavirta, 2018; Udell, 2021). Books are filled with examples of green

library initiatives (Antonelli & McCullough, 2012; Hauke et al., 2018; Tanner et al., 2022), and

teaching environmental information literacy (Jankowska, 2012), with further examples of green

librarianship highlighted by IFLA's Green Library Award (P. Pun, 2021).

In another flow of discourse, some LIS professionals turn their minds to ICTs and how

they hinder the well-intentioned librarian. In a 1992 ALA conference, a program looks at the

environmental impacts of paper, computers, and microfilm (Jankowska, 2011). In 2001, there is

a brief consideration of the revolution of ICTs that compares the hyped discourse around their

ability to decentralise information with the same historical excitement of electricity replacing

steam power and the sense of impending freedom, only for electricity to become controlled by a few powerful corporations (Gable, 2001). Caution is warned for the librarian given the known hazards of ICT's manufacture and disposal (Gable, 2001). Concern turns to the high energy usage of ICTs (Chowdhury, 2012, 2016; Jankowska & Marcum, 2010), as well as critiques of the environmental cost of repeated consumption through endless repairing, replacing, or upgrading (Fairweather, 2011). The awareness of the associated hazards of e-waste grows with the recognition that it causes "a major disparity between the goals of the library sustainability and the reality of daily operations and services" (Jankowska & Marcum, 2010, p. 165). A consequentialist approach that seeks a balance between patrons' needs and thoughtful acquisition of tech is offered to ameliorate this conflict in values and reality of service (Poggiali, 2016). Larger institutions carry a heavier burden regarding a sustainably responsible approach to ICT because of the sheer amount of technology that is bought and disposed of (Zazzau, 2006). Indeed, the sustainability of academic libraries is questioned given the increasing costs and demands of the digital information landscape (Jankowska & Marcum, 2010). Bringing these critiques together, Diane Whitehouse and Norberto Patrignani (2014) call for slowing our technological ambitions to create good, clean, and fair technologies; that is, technology that centres human well-being (good), is manufactured with cradle-to-cradle design or extended life design (clean), and respects the human rights of ICT labourers (fair). To combat our disposal culture, repair events show patrons how to repair commonly broken appliances or ICT and contribute to a mindset that prioritizes repairability over cycles of waste (Griffis, 2022; Rowan et al., 2022). The ALA publishes tips on running these events, highlighting the importance of offering a free, welcoming, and publicly accessible space (Cottrell, 2017).

Within the ALA context, Rebekkah Aldrich becomes a prevailing voice in the sustainability discourse. Aldrich participates in the Sustainability Task Force, which eventually becomes the Sustainability Round Table, and authors a book, through ALA publishing, on sustainable thinking in libraries where the focus is on "the future success of [the] library in the context of [their] community's capacity to endure, to bounce back after disruption, and to thrive—regardless of what is thrown its way" (Aldrich, 2018, pp. 13–14). The book's ultimate goal is to teach sustainability-enthused librarians to infuse their organisation with sustainable thinking, policy, and practice – a few steps beyond implementing one-off green initiatives. The holistic view of sustainability is emphasised, moving beyond designing green buildings or spreading awareness of recycling to also include "economically feasibility and socially equitable" values and practices (American Library Association, 2019). The three-part definition of sustainability is also seen in the UN's seventeen Sustainable Development Goals (SDGs) (United Nations, n.d.), which is recognized by both ALA (n.d.-d) and IFLA (2018). Indeed, much of IFLA's ideology is based on how libraries can assist in these goals (Jain & Shonhe, 2020; Kosciejew, 2020). Primarily, IFLA views the library advancing these goals by contributing to community, culture, education, economy, and democracy (Kosciejew, 2020). Mention of the library's impact on environmental progress is generally tied to providing access to information and education (Jain & Shonhe, 2020).

Most scholars speak positively about the library's work with sustainability and fall within the precepts of incremental change, recognizing that "… the environmental impact of libraries' actions can seem equivocal, but every act reminds us that this issue is important, while it should also be remembered that small actions contribute to big results" (Sahavirta, 2018). However, Edgardo Civallero and Sara Plaza criticize the profession for the half-measured platitudes of

resolutions and adopted values, and a rhetoric of sustainability that continues the same problematic systems that got us where we are now. Similar criticism draw attention to the ways racism and pollution are closely tied and that unexamined practices that assume all sustainability initiatives are inherently good initiatives may create problems in the local marginalized community (Elzi, 2022). Civallero and Plaza envision a librarian doing much of the work already discussed in this review – managing a sustainability-focused collection or being an example – but drive the ideology forward with activist gusto: "to become a trench, a space of resistance and reflection, thought and putting that thought into practice" (2017, p. 37), to be "[a]n example that should be highlighted, explained, documented and publicised, so that it can be repeated and replicated" (2017, p. 36). In addition to enacting the policy or creating the program, the authors ask librarians to also be vocal about their work, to push for its importance in the public sphere.

Conclusion

Early thinkers within PhilTech offer useful analyses of the cultural implications of our growing affection and reliance on technology, even as they do so with a typically negative and deterministic perspective that assumes technology is either taking over humanity or a tool of its enslavement. Near the turn in PhilTech toward an analytic perspective, concepts of co-constitution arise to explore the reciprocal relationship we share: as we create technology, technology in some capacity creates us. It is clear that Deleuze and Guattari are likewise thinking about these problems, adapting Mumford's megamachine into the new social regime that sees us subjectified (as viewers, users, consumers) at the same time we are enslaved as input and output to the machine. A line can be drawn from here to the cycle of productivity that constitutes immaterial labour – intellectual labour goes into the creation of a product that immediately transfigures us as its consumer; we consume information first with our response feeding back

into the cycle. Consumer culture is an element of this, and as we will see, a facet of the ICT industry (e.g., greenwashing, brand loyalty).

Within conceptions of immaterial labour are affective labour and the simultaneous neglect of material, or immiserated, labour. A course for radicalisation is predicted, not through collapsing all workers under the same banner, but through identifying with those immiserated labourers through the acknowledging of belonging to a system that does not care about their life. Here enters the librarian, also an immaterial and affective labourer complicit in the new information society. Benefiting, as we all do, from digital technology's expansion at the same time the library and librarian plays a significant role in the (re)production of the Information Society. Librarianship's core values are supposed to offer guidance, especially during periods of change. In this thesis, the values of social responsibility and sustainability are particularly pertinent to the librarian's complicity in bodily harms happening elsewhere, and the price the earth pays for our digital technology. We are left wondering, what can the library do to ameliorate their complicity?

There is another facet of social responsibility that asks librarians to reflect on how the library's connection with ICT exposes the library to its power and influence. This investigation might consider the usage, dependence, and maintenance of ICT in the space, and the degree of control given to third parties over resources, and the consequences of that control. This avenue would consider the ways technology imbues perspectives of efficiency that enable capitalist and corporate tendencies to root; technology gifts a speed and effectiveness that prophets a solution to budgetary restrictions. We can see pieces of this in the neutrality debate and integration of ebooks, and the centralization and monopolies of service providers. Inspired by PhilTech, librarians might also consider, "people's sense of self," "the texture of human communities," the

"qualities of everyday living," and "the broader distribution of power in society" that our co-constitutive relations with technology affects (Winner, 1993, p. 368). Although a worthwhile topic, it is an avenue for future research. This thesis turns toward social responsibility in the sense of acknowledging the harms enacted by the ICT industry, as an intentional tool of its assemblage. It is a social responsibility that addresses the library's implication in a system of harm.

Chapter 2: Stitching Together the Framework

Librarianship has established values for social responsibility and sustainability; there is potential for contradiction between these values, the librarian's commitment to quality service, and librarianship's co-constitution with ICT, and its known harmful practices. The ICT assemblage has considerable power and potential to reorganize librarianship to serve ICT's goals, as seen in discussions surrounding ebooks and the potential for trade-offs in values.

This chapter examines in what ways the library produces and reproduces the harms and exploitations of land and labour that are present in the technology industry's practices. The chapter does this by introducing the disparate theories generally, and how they relate to each other. Then, I will explore how these theories are stitched together and used for analysis. Specifically, my agenda is to:

- understand the library as an assemblage, as part of and connected to other assemblages, and how its creative potential is highlighted through such an understanding;

- understand how the slow violence of the digital technology industry is an intentional part of its assemblage, relying on a colonial and capitalist relationship to land and labour;

- understand the constraint and potential of the librarian through Deleuze and Guattari's schizophrenic process.

The primary, or overarching, perspective is through Deleuze and Guattari's assemblage philosophy. It is an abstract perspective that centres the relations between entities, rather than the entity as it stands singularly; it emphasizes fluidity and creative re-imaginings through connections. There is never a point we can trace back to and say, "ah, yes, this is the thing that starts the library." Or, if there is (and some historians do provide well-thought tracings), this is only a translation of the "coexistences of becomings into a succession" (1987, p. 430). For our

philosophers, things 'become' through meetings with other entities, not through a filial reproduction that supposes linearity (i.e., evolution). To make a map, to see things rhizomatically and from the middle, acknowledges that an entity can form a connection with any other entity, and does not need to follow a predefined trajectory – even one thrown forward by a convincing tracing of its past.

Throughout their work is a critique of capitalism's dominance that fixes relationships into static bindings. However, there are concepts more closely related to the phenomena this research investigates, and these also provide valuable insights and analysis, and something a bit easier to hold on to and wield. But these concepts are always still handled with a mind attuned to the perspective afforded by assemblages.

Theoretical Framework

Primary Perspective Through Deleuze and Guattari

Deleuze and Guattari's joint work *Capitalism and Schizophrenia* is in two parts: *Anti-Oedipus* (2009) and *A Thousand Plateaus* (1987). In the first, the authors situate themselves against Sigmund Freud's Oedipal complex and enter into critiques of the formation of the subject in our world of social constraint. The authors' use of machines takes us to Marxism and industrial imagery, while the second work uses the organic rhizome as its primary image. Because the authors are thinking about the same things in divergent tones and language, similar concepts are often discussed with separate terms and emphasis. I also oscillate between the two during my analyses – sometimes because I find the treatment of a concept more thorough in one volume over another, or just because one concept's treatment tickles my brain in a different way. What follows are explanations for the concepts that appear in my analyses.

Connections and Lines of Flight. Deleuze and Guattari offer an incredibly abstract post-structuralist philosophy of everything, which does away with static notions of anything. They declare that everything exists as a process, or a production of flows, through a connecting force called the desiring-machine. Connection is always through a positive desire for production, and it is where their philosophy has its creative and generative impulse to reimagine our world. Imagine a swirling pool of chaos on one side of a barrier; each unattached element is relentlessly doing its own thing. On the other side of the barrier, the chaos becomes organized as these individual elements gain relation, through the "autonomous, self-constituting" desiring-machine (2009, p. 8), stacking end on end, and propelling onward into the horizon of your mind's eye. As discussed in the re-reading of Deleuze and Guattari as philosophers of technology, there is no end or beginning because these connections are ceaseless; we are always in the middle and can never reach a unitary 'thing'.

Connections are lines, but they are not "lineages of the arborescent type" that define "binary relations between the points," such as with hereditary definitions; they can happen between anything (1987, p. 21). We are thinking in rhizomes instead of trees. The family tree is an arborescent structure, where lineage can be traced back and family is strictly defined by blood or law. The family rhizome is "antigenealogy" and "short-term memory, or antimemory" (1987, p. 21), it connects with an 'outside,' and may include community, friends, land, animals, etc. These connections are also termed "lines of flight," as they are departures from one assemblage to another. To note, the philosophers are explicitly not proposing another dualism: a tree-like structure can form on a rhizome, and rhizome can form "in the heart of a tree" (1987, p. 15).

Fundamental to Deleuze and Guattari is immanence – connections are made, things are created, through their own "purely positive" self-production (2009, pp. 8-15). Rhizomes are

"composed not of units but of dimensions, or rather directions in motion. It has neither beginning nor end, but always a middle (*milieu*) from which it grows and which it overspills" (1987, p. 21), similar to how strata build on themselves with output becoming input, shattering the continuity between interior and exterior, becoming gradations of in-between (1987, p. 50). Through the philosophers' concepts of self-producing desiring-machines, the rhizome that can form connections with an 'outside,' and the transduction of strata that breaks down and fills the in-between space, we see 'things' as rather unbounded and fluid.

Machines and Assemblages. At the same time connections are made, they are organized and given relationships that go on to define the larger (momentary) composition. They term this organizing force the Abstract Machine, which "rotate in all directions, like beacons" to direct the relationships (1987, p. 73). In the first volume, they call these compositions "machines," and in the second volume, "assemblages."[11] They use "machines" quite literally to show how one plugs in to another, and each is composed of parts that serves a function. In their machinic enslavement, for example, we are made subjects to the machine and become components as inputs and outputs toward some function. Assemblages, on the other hand, are viewed through a geological frame where a process of double articulation collects and organizes on one hand, while it structures and gives meaning on the other (through codification): "unstable particle flows" are first selected or deselected (substances) and given order (form), then functional and stable structures are established (forms) and actualizes the composition, by creating its territory or meaning (substances) (1987, pp. 40-41). These processes happen simultaneously and repeatedly, compounding, creating layers of sedimentation or strata. They "constantly intertwine,

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[11] Ian Buchanan (2015) argues "arrangement" is a more appropriate translation of D&G's intention since it implies a more fluid and temporary composition of things – "assemblage" connotes construction, planning, fixity. I tend to agree, but will continue using the more recognized term: "assemblage."

embed themselves in one another" (1987, p. 68), or in other words, the recursive loop of transduction where substance becomes form, and form becomes substance for the next strata. Again, we can never get to a "unitary central layer of the stratum, or to grasp it in itself, by regression" (1987, p. 50).

Deleuze and Guattari also describe this process as "connective synthesis of production" (1987, p. 68-74) and "disjunctive synthesis of recording" (1987, p. 75-83), offering a different emphasis. These happen simultaneously; the connective synthesis brings elements together and the disjunctive synthesis imposes restrictions on those connections. The connective synthesis creates a line between notebook, pen, hand, arm, and mind to create a student writing a thesis, for example. The disjunctive synthesis imposes restrictions: to write from left to right and between the lines; to write scholarly by choosing the right words, forming predictable lines of reasoning, constructing an argument with the right sources and evidence; to write my ideas instead of drawing them.

Viewing the notebook from its middle, it is composed by pages, lines, a metal coil, and a cardboard backing. It is a component of my ideas, reminders, and sketches. Continuing along another flow, the notebook partially composes portable writing. The notebook was once a more prominent component to portable writing, but, as an assemblage, portable writing has shifted by way of new connections to laptops and cellphones, for example. Indeed, the process of portable writing (i.e., taking notes) now includes dictation through these devices. Assemblages, or machines, are in flux and should only be taken as momentary sedimentations of its strata.

The Subject. It is through these first two syntheses that the subject is 'born' or attributed, which they see as a third synthesis: "conjunctive synthesis of consumption-consummation" (1987, p. 84-105). As Ian Buchannan explains, "it is the reward that falls to 'us' for assenting to

an interpellation by the desiring-machines (all while forgetting that a choice was involved)" (2008, p. 64). The subject is decentred and unfixed, and it is the desiring-machine that organises from the centre. The subject is immanent, coming from within the process, and is "defined by the states through which it passes" (1987, p. 20). These "states" or zones of intensities are organized by the desiring-machine, plucked from the Body without Organs (BwO) (the body without organization: unbounded) (1987, p. 158). It is an amorphous plane of potential from which relations are made. The BwO swings between two poles, the "surfaces that stratify it and the plane that sets it free" (1987, p. 161). These are the poles of constraint and potential – what is required and expected of us to become against what multiplicities we are capable of, what variations we desire to be: "You will be a subject, nailed down as one…" (1987, p. 159). It is in this swinging we can discuss their treatment of the schizophrenic.

The Schizophrenic. The schizophrenic process is to be desired, not the end goal of being schizophrenic. The schizophrenic process refuses the codes of exclusivity imposed in the disjunctive process; for example, you are a woman because you are not a man, or, you are alive because you are not dead. Instead, the schizophrenic "detaches" the imposed disjunctive relations, "continually works them loose and carries them off in every direction in order to create a new polyvocity that is the code of desire" (1987, p. 40). The schizophrenic process moves through the codes and forms connections regardless of restraints imposed: the exclusive definitions. The schizophrenic process reveals "the true nature of desire as a synthetic process" (Buchanan, 2008, p. 40). It is about connections in all directions and turning the exclusions and restrictions of the disjunctive synthesis to affirmative uses, and about holding and recognizing the differences without collapsing them into the same – opening outward (1987, pp. 76-77). It is being able to say I feel I am becoming both man and woman, alive and dead.

Their suggestion for schizophrenic process is to "lodge yourself on a stratum," a particular, temporary, accumulation of yourself, "experiment with the opportunities it offers, find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment, have a small plot of new land at all times" (1987, p. 161). The student writing a thesis schizophrenically would experiment with position, move between perspectives, disciplines, styles of argument, etc. They may include artistic rendering of their thought process (the more abstract, the harder-to-pin-down, the better). Or, they may turn to multi-modal representation (hypertext, audio-visual). The Digital Humanities lends itself well to schizophrenic scholarship – itself uncertain in its identity, a fuzzy amalgamation of disciplines, tools, and methodology. As the introduction to *Disrupting the Digital Humanities* describes it, "what is most beautiful about the work of the digital humanities is exactly the fact that it can't be tidily anthologized — that it's messy and pushes in uncomfortable ways" (Kim & Stommel, 2018, p. 20). In this thesis, I explore the schizophrenic in librarianship through the subject-being-librarian's struggle to pin-down their identity in society. The vivid contrast of perspectives in the neutrality debate offers much to explore, but I am also thinking about the librarian's place in the new(ish) sedimentation of the library connected to ICT and the Information Age and commitments to sustainability.

Relating it to the Study. Deleuze and Guattari's perspective benefits this work primarily in the way they describe institutions, people, collectives, and regimes as fluid assemblages, able to draw relationships between other assemblages, be intersected by their lines of flight, absorbing (or co-opting) elements and shifting into something new. A critique of capitalism, and of the restrictive political and social structures in general, drives much of their work and is a fitting perspective for this study. Deleuze and Guattari help us imagine things from the middle and

through connections. It is a perspective that avoids lineages and teleological determination – our history, identities, and ideologies, do not predetermine our future – which gives librarians creative agency, a way to act otherwise when confronted by restrictive systems. Both librarianship and the technology industry are part of complex bundles of relations: to capitalism, universities, information, labour, land, 'the state,' boundaries, leisure, creativity, and on.

From the middle, we must see these arrangements of institutions and industries as momentary and in flux. We see the connections they are making, some of which are exploitative and damaging, others that are helpful, entertaining, and liberating. Within this perspective, there is always a creative agency through forming new, anti-descendent connections. Rob Nixon and Michael Rothberg contribute to this perspective through more direct analysis: slow violence lends structure and form to the often-imperceptible harm that is attached to tech's industry. The implicated subject enables a path of identification for the librarian who is neither perpetrator nor victim of the violence, yet still somehow partially responsible.

Slow violence

Rob Nixon (2011) builds on Johan Galtung's (1969) work on indirect and structural violence, which places violence within the larger social, economic, political structures that encase our lives. Galtung's structural violence exists in "the tranquil waters" when a society is static – the violence is unregistered and silent, a calm bay of the everyday (p. 173). Nixon builds from Galtung's static understanding of structural violence to include gradual change and movement over time. Slow violence, then, is about the protraction of harms that build and extend through time, generations, and boundaries. The slow violence is often unnoticed and out of sight since it lacks the spectacle of explosions, crashes, or gunfire; it is dragged out, unending, and systemic in the way power imbalances are leveraged. It is exactly these power imbalances that

distort the violence's visibility; politics, money, and research methodologies vie for the narrative

and those who have the most stakes (the victims) are denied that platform and their agency to

speak. Thom Davies (2019) asks, "out of sight to whom?" in an effort to reframe Nixon's

emphasis on the invisibility of slow violence. Of course, the answer is that those affected by

toxic landscapes are entirely capable of witnessing the degradation of their environment and their

bodies. Davies calls out a "cycle of brutality that is structural, slow, and epistemic" in the way

"politics of indifference" silence the marginalized voices predominantly affected by industrial

slow violence, enabling it to continue its hold on land and narrative (p. 13).

Nixon's critique is directed at multinational corporations (MNC) and how current world

relations create a "bewildering transnational maze" that deflects culpability and "erodes national

sovereignty" (pp 46-7). Slow violence depends on our gaze sliding off of it as our attention

wanes and refocuses elsewhere; it thrives in confusion, uncertainty, and deferral. Slow violence

is more than a by-product, it is a process and a tool; it is structured violence that deploys

"distancing strategies (temporal, legalistic, geographical, scientific, and euphemistic)," a "battery

of attritional, dissociative mechanisms" to make the world forget or give up in seeking justice

(Nixon, 2011, p. 60).

In Deleuze and Guattari's language, slow violence is a flow travelling from the MNC's

desiring-machine – it interrupts the desiring-machines of the communities in which it implants

itself. Through the State's apparatus of capture, MNCs are excepted from blame and

responsibility, their violence becomes authorized and established (if not lawful): "there is lawful

violence wherever violence contributes to the creation of that which it is used against, or as Marx

says, wherever capture contributes to the creation of that which it captures" (Deleuze & Guattari,

1987, p. 448). Lawful violence and capture refer to the bodies within communities that become

obstacles to placate, or labour forces to cultivate. Additionally, we may acknowledge the land, air, and water as the subjects of lawful violence and capture; there is an allowable threshold of pollution to dance around (legal violence), which assumes the right to use the environment for toxic emissions (capture) (Liboiron, 2021). Finally, Nixon and Deleuze and Guattari agree this violence is structural and indirect: "but *State policing or lawful violence* is something else again, because it consists in capturing while simultaneously constituting a right to capture. It is an incorporated, structural violence distinct from every kind of direct violence" (Deleuze & Guattari, 1987, p. 448, original emphasis).

Nixon calls for a rendering of these violences, from a literary and ecocriticism perspective (which is with words, imagination, evocation); Davies, from a sociologist and ethnographic perspective, emphasizes a sympathetic witnessing of those who live in toxic landscapes, who are already trying to speak but are overlooked because of a structure that ignores them. This thesis considers the librarian's perspective and what they can do within the unique role they occupy in our information society and its dependence on the foundationally exploitative tech industry. An important element of that is recognizing their implication in the violences being perpetrated elsewhere, overtime, and indirectly: "indeed, implication consists precisely of those discomfiting forms of belonging to a context of injustice that cannot be grasped immediately or directly because they seem to involve spatial, temporal, or social distances or complex causal mechanisms" (Rothberg, 2019, p. 8).

Implicated subject

Slow violence focuses on the culpability of MNCs and the (re)actions of the afflicted communities, with clear binary demarcation between perpetrator and victim. If our relations were as simple as that, this thesis would begin with its question and end with a "no, of course not. The

librarian is not clearcutting the land, nor dumping heavy metals into the water, nor forcing workers into ill-equipped mine shafts." But that does not quite sit right, as consumer guilt has risen to the calm water's surface. Simple shopping choices that, on the face, are neither good nor bad, have attachments to an array of hidden infrastructures that depend on exploitation of people and land elsewhere. Rothberg (2019) develops the "implicated subject" to more accurately describe our relationships in these structures, and it is through this concept I ask librarians to consider their unique position as somewhat guilty, and perhaps capable of doing more.

The implicated subject goes beyond a binary of perpetrator and victim and attempts to wrangle with complexities of beneficiary, inheritor, and other indirect modes of belonging to injustice. Rothberg defines the term:

> [i]mplicated subjects occupy positions aligned with power and privilege without being themselves direct agents of harm; they contribute to, inhabit, inherit, or benefit from regimes of domination but do not originate or control such regimes. An implicated subject is neither a victim nor a perpetrator, but rather a participant in histories and social formation that generate the positions of victim and perpetrator, and yet in which most people do not occupy such clear-cut roles. (2019, p. 1)

The important distinction this term brings is a not-quite perpetrator position that is still, nonetheless, enjoying benefits from a power imbalance. There is a relationship of temporality between Rothberg's and Nixon's approaches. Privileges are inherited legacies, often of violence. These inheritances look back, but are easily thrown forward as we continue to uphold and benefit from the legacy. And on the other side, victimhood becomes generational as the legacy of suffering passes down either in relationships or continued violence through exploitation.

Consumers participate in and benefit from a system that depends on a severe exploitation of people and land; an exploitation that generally happens out of sight and mind for those in the Global North (that is, the distorted visibility of slow violence). The implicated subject refocuses our attention in the relationship between consumers and the complexities of harm baked into our world's current structures. This is the position of the librarian in relation to the tech industry, and within the information society.

The implicated subject meshes well with Deleuze and Guattari's philosophy. In the two works of *Capitalism and Schizophrenia*, the authors oppose the biunivocalization of concepts, which is a dualism that reduces the two opposing terms into a single vocalization of the thing (e.g., gender being reduced to the opposition of woman and man). The implicated subject breaks open the closed relationship between victim and perpetrator to include the many overlapping ways we are imbricated in the violences of the assemblages of which we are a part – both fast and slow. While "implicated subject" insinuates a static state, Rothberg is proposing something quite similar to Deleuze and Guattari's fluctuating subjectivity – an intensity through which our desiring-machine moves 'us' – Rothberg speaks of the implicated subject as "not an identity, but rather a figure to think with and through" (2019, p. 199). Additionally, Rothberg wants to avoid "reifying or essentializing differences and dynamic social relations" which is, again, refraining from collapsing the implicated subject into a totalizing figure – we instead should *transfigure* the subject by being self-consciously aware and forming connections with others toward collective action (2019, p. 200). Stated otherwise: "the ultimate point, though, is not to *dwell* on or in implication but to *transfigure* it: to acknowledge and map implication in order to reopen political struggles beyond the defensive purity of self-contained identities" (Rothberg, 2019, p. 201, emphasis added). To dwell is to "[close] off the self from its responsibilities, complicities, and

debts," while to transfigure "opens the self to others–and to one's own otherness, prosthetic agency, and unacknowledged capacity to wound" (ibid). The schizophrenic process that defies being pinned down by the disjunctive synthesis opens outward to make new connections by holding seemingly disparate identities together (victim and perpetrator). Finally, in Rothberg's avoidance of reifying "dynamic social relations," we also see an acknowledgement that the transfigured implicated subject is going to look and behave differently within these relations. It is not an inscribed transfiguration (predefined), but immanent to unique relations.

Discussion

With the chosen theories explained and their compliments to each other outlined, let us look at how the library, librarian, and tech's extraction industry are viewed through these theories. First, I apply Deleuze's and Guattari's assemblage theory to the library as a building and institution, and to a lesser extent, the ICT industry. Through this exploration, we see how the library has changed and been changed by the ICT industry, and can map some of the implications. In particular, the second section deals with the environmental and human harms associated, primarily, with the tech's extractive industry as seen through Nixon's slow violence; in addition, I bring in a colonial perspective since this type of slow violence is ultimately also colonial violence. Finally, I think through the librarian intensity (what it is a librarian ought to be) with Deleuze and Guattari's treatment of the immanent subject. I suggest the librarian intensity experiences a schizophrenic energy as it bounces between expectations and responsibilities, one of which I suggest is the librarian's place as an implicated subject. It is through the combination and application of these theories I begin to address my research question: in what ways does the library produce and reproduce the harms and exploitations of land and labour present in the technology industry's practice?

Connecting the Library and ICT Assemblages

> We are in a social formation; first see how it is stratified for us and in us and at the place where we are; then descend from the strata to the deeper assemblage within which we are held; gently tip the assemblage, making it pass over to the side of the plane of consistency. It is only there that the BwO reveals itself for what it is: connection of desires, conjunction of flows, continuum of intensities. (Deleuze and Guattari, 1987, p. 161)

The library is an assemblage constituted by a variety of cultural artefacts (e.g., books, movies, games, newspapers, journals, etc.), workers and professionals, classification systems, community members and patrons, architecture and furniture, computers, and the Internet. These are the strata that the library-as-assemblage "holds" together, but they continue in all directions beyond the library-as-assemblage. The plane of consistency is the milieu from which relationships are territorialized and/or codified. The BwO is the library without assemblage, without order (without **organ**ization). It is the full potential of connection. Natasha Gerolami (2015) views the library as an assemblage to explore the librarian's freedom in forming new connections through partnerships and unusual arrangements of resources; these connections are full of creative potential to free the library from restrictive social, economic, and political forces.

In reviews of the library's history, we see examples of particular arrangements of its resources, driven by a particular desiring-machine (the desiring-machine is the force that seeks connection). We see in the literature review that the library has existed as many momentary assemblages, what John Sutherland calls "precariously achieved stabilities" (2015, p. 124) that exist until they are tipped over into something else. During the Medieval era, the lock and key are its defining technologies; the use of chains and locked chests were common, and visual

depictions show books behind barred windows (Gameson, 2015). Books were a treasure of wisdom and holiness, and the library's desiring-machine sought their protection. Relationships are arranged in a wholly different configuration than today's library, or even the Modern era library. As Ranganathan's (1931) first law of librarianship states: books are for use. This was a revolutionary ideology encouraged by the printing press. The library-as-assemblage, it seems, needed to "tip the assemblage over" to form whole new sets of relations between books, patrons, librarians, and, likely at the urgings of a new desiring-machine. In the Modern era, librarians see themselves as responsible for producing and reproducing what constitutes normal behaviour in society, limiting or enabling access to certain materials (Gerolami, 2018); avoiding the "pitfalls of the cheap, the tawdry" (Battles, 2003, p. 120). This relationship with the written word was encouraged by the printing press, which accelerated the volume and content of books available to people. The nineteenth-century library is described as "an engine or a factory for producing *efficient* readers–people who read usefully, ignored the frivolity and dross of literature, and used books to advance themselves and their society" (Battles, 2003, p. 200, original emphasis). This ethos of efficiency took on a physical manifestation in the British Museum's Reading Room as it employed conveyor belts to make requests and retrieve materials for the patrons, and while efficient, is described as a "soul destroying drudgery, a literary factory" (Sutherland, 2015, p. 138). In another flow, with the acceleration of material and borrowing, the libraries in Britain began using fumigators to cleanse books and interrupt the spread of contagion (Sutherland, 2015). These early examples show how the public library's purpose (desiring-machine) arranged its resources into particular relationships, but also how advances in technology influenced the library's desiring-machine. Lines of flight traverse both, recalibrating their assemblages. The flow of the fumigator joins the library and incorporates notions of public health into its desiring-

machine, and perhaps resonates with the modern library's "terror of the unwashed mob" (Sutherland, 2015, p. 132): in other words, the unlearned commoners. It is, however, not fair to say the entirety of library professionals in the modern era were snobby elitists, scrubbing their hands and books clean after each transaction. Gerolami (2019) shows the discourse surrounding this topic varied, with a few librarians encouraging fictional works, if only as a stepping stone to more robust content. Indeed, as Deleuze and Guattari say in the beginning quotation to this section, assemblages accumulate new flows, or lines of flight, until they become something new – but that accumulation always only reaches a penultimate action, never the ultimate. The ultimate action is what tips the assemblage into change. Regardless, the library existed as many plateaus since this time, and has recalibrated its desiring-machine along the way.

The desiring-machine of today's library is more along the lines of sharing free resources with the public, encouraging and engaging in open curiosity, inspiring learning, and bridging economic gaps. In Lankes' (2011) *Atlas of New Librarianship*, for instance, the author suggests that engaging with the library's holdings is engaging in conversation with yourself; conceptually, pieces of content are artefacts rather than recorded knowledge since knowledge is a tacit, and personally understood thing rather than an external perceivable phenomenon. Indeed, this perspective exemplifies the epistemological turn away from direct relationship between content and behaviour, toward the unknowability of content's influence on behaviour (Knox, 2014). Lankes wants to see the librarian at the centre of the library, since the material library comes and goes. In this sense, the library's desiring-machine wants to "improve society through facilitating knowledge creation in their communities" (2011, p. 15). While a laudable intention, the library has many forces acting on and through it.

The incorporation of ICT into the library assemblage has massively shifted its relations. Early application of ICT to library processes, such as computers, local networks, and the Internet, resulted in the walls of the library disappearing (Hicks, 2014a). The library and librarian had more avenues for interacting with the patron, through telephone, fax, and email. Physical content still required going to the building. Now, much of the library's resources are available online and can be accessed from home or coffee shops alike. And what constitutes the library's resources has expanded and been facilitated by ICT through partnerships or consortia. While the library space still maintains a purpose, that purpose imposes different relations between content and resources, furniture, noise volume, and staffing (to name a few components). The ticket system and conveyor belt of the British Museum's Reading Room is replaced by catalogue look-up computers accessible by patrons; the open shelves invite their own searching (and browsing) (Battles, 2003; Ranganathan, 1931). Furniture is mixed between functional study and casual, flexible seating options. In academic libraries, large amounts of space are dedicated to computer labs and/or stations, complete with wired infrastructure (to the Internet, the university's network, and the printers). Even at workstations without desktops, the infrastructure of ICT is present as outlets and Wi-Fi are a prized resource for students spending the day on personal devices. The shushing librarian is a relic (unless you happen to be in a silent study space on campus – then, maybe, there is a shushing, overwhelmed, student).

Kate Crawford, in examining the materiality and immateriality of Machine Learning, finds that there is "no single black box to open, no secret to expose, but a multitude of interlaced systems of power" (2021, p. 12). These systems of power are present in mining operations, human labour, harvesting and classifying data, and Machine Learning's close relationship to state power (military, education, policing, and government). While Crawford's assessments are

focused on Machine Learning, it is not a far stretch to see how the map she makes also applies to digital technology generally. The ICT industry's exploitations in mining and labour are an incontestable fact at this point; surveillance capitalism – harvesting our data for profit – is baked into our daily uses of these technologies (Zuboff, 2019); and as early philosophical critiques of technology have explored, technology is a great tool for organizing and controlling power (Mumford, 1967, 1970). These overlapping systems are ICT's assemblage. These are primarily negative elements, but there are also the obvious benefits: increased access to information and content, advanced organization techniques, world-wide and efficient communication, seemingly boundless storage, etc. But this is also the "megatechnic bribe" we are warned about (Mumford, 1970, pp. 330-334). It is clear the ICT assemblage and the library assemblage have lines of flight connecting them, and these are primarily understood through the ICT assemblage's positive components. However, we need to think about how these lines of flight are behaving; what elements are being deterritorialized (cut off from their assemblage) and how they are being recalibrated to suit their new assemblage; what new assemblage is the desiring-machine composing?

We know viewing the library institution as an assemblage imbues it with the creative potential to act otherwise (Gerolami, 2015). However, we also know the library has (and continues to) reproduce dominant ideologies – the library assemblage is fundamentally composed by its social, cultural, and political milieu. It does not exist in a vacuum. The modern era public library normalized expectations and values of good behaviour, for example (Gerolami, 2018), and today's academic library helps train students to be effective intellectual labourers (Popowich, 2019b). Classification, although integral to the organized collection and accessibility of the global record, is an inherently powerful activity and is plagued by biases. It is a clear

example of how the library assemblage is part of, and in some ways controlled by, the State.

Introducing the ICT assemblage to the mix, the problem of bias in classification is amplified

(Crawford, 2021; Noble, 2018).

We can also look at ebooks as another example of ICT and the library meeting. As

discussed in the literature review, ebooks challenged librarians to combine the new technology

with their established methods. They are an arrangement of parts whose lines continue from

physical books (publisher-author-reader relationships, structure, and genre) and from the ICT

assemblage (digitization, local and cloud storage, immediacy, tracking, and, of course, its

physical container). They are convenient and efficient, but are also trailed by consequences.

They are not just books in electronic form, they are not composed of the same lines, relations,

and desiring-machine. As the library and ebooks combine, the question is whether the librarian

effectively de- and reterritorialized the lines of flight from ICT (or ebooks specifically), or

whether the library had its aspects deterritorialized. Ebooks bring concerns such as: the problems

of maintaining privacy of the patron in the face of tracking and data aggregation; the limitations

imposed on sharing because of the publisher's reactionary reading caps to protect their sales;

access to library material being blocked due to obsolete technology, a patron's inability to afford

ereaders, or the patron requiring large print options; and finally, the librarian is challenged in

their inability to realistically preserve ebooks and perform their stewardship role (Algenio &

Thompson-Young, 2005; Simone, 2012; Yelton, 2012). Prior concerns about library collections

giving more attention to the popular press, neglecting the alternative (Samek, 1996), are

exacerbated by ebook subscription deals that prioritize new and popular releases, in addition to

losing control over curation by relying on vendors (Blackwell et al., 2019; Bonfield, 2012).

Considering the librarian faces many problematic intersections of the ebook's lines into its

assemblage, I would argue the library has not reterritorialized the ebook – it has not changed its relationships to become in line with library values and ethics. Instead, the ebook (and ICT more broadly) have maintained their own relations and threaten to recalibrate the library. More promising lines of flight extend from the Open Access philosophy that want to see ebooks brought into the creative commons for free use and sharing, legally.[12]

When lines of flight intersect assemblages, the positive aspects are highlighted. However, there is often a trade-off. Sometimes the trade-off is apparent, as with ebooks. Other times, it is a more subtle recalibration, such as concerns that the librarian inherits ICT's quick efficiency in providing answers, rather than encouraging provocation or deep understanding (Gorichanaz, 2019). There are certainly other avenues to explore how these lines of flight are changing both assemblages: privacy, open access and open-source software, net neutrality, the semantic web, digital archives, and the right to be forgotten to name a few. These topics, I think, have significant overlap with the Digital Humanities – itself a collision of assemblages.

The Slow Violence of Tech's Industry

Slow violence is the violence of the extractive industry, foundational to the production of ICT. While sometimes the violence is spectacular (such as explosions, cave-ins, or building collapse), much of its violence seeps out slowly into surrounding communities, unnoticed. The slow violence of the extractive industry pollutes land, water, and air. And as it changes the land, it exploits and maneuvers the local communities; it offers food and wealth in one hand while seizing future generations with the other (Mutendi and Macdonald, 2018); it promises a better quality of life while silencing dissent (Auyero and Swistun, 2009; Gamu and Dauvergene, 2018; Holterman, 2014); it creeps into the community so that its victims are slow to notice and settle

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[12] See: unglue.it and openlibrary.org (and the Internet Archive: archive.org).

into a routine and life next to an MNC (Auyero and Swistun, 2009); it consumes their bodies,

working them to sickness or death (Mutendi and Macdonald, 2018); it thrives in a "toxic

uncertainty" that blocks the community from collective action, revelling in the obfuscation

created by overlapping perspectives, influences, and phenomena such as the difficulty in linking

environment to health, of generational blind spots in being healthy but raising sick kids, in

lawyers promising settlements, officials promising relocation, and even taking advantage of class

politics (Auyero and Swistun, 2009).[13] It speaks in money, public relations, and politics; it

weaponizes Corporate Social Responsibility (CSR) programming to make a show of listening to

the community and solving short-term problems (e.g., providing lead poisoning tests, building

clinics, endorsing sports teams, or funding schools (Auyero and Swistun, 2009)) while ignoring

the core hazards (Gamu and Dauvergne, 2018). What is more, CSR programming is used to

recalibrate the community's social world, to "colonize the non-commodified world," and to

"further entrench the logic of profit within the social body" (Hanlon and Flemin, 2009, p. 946).

Slow violence is colonial. It is based in, or thrives from the colonial land relation that depends on

the assumed right to extract minerals from land, the assumed value of those minerals being

greater than the value of a thriving ecology, and the assumed right to dump toxins and toxicants

into land and water (Liboirone, 2021). Additionally, the insertion into the communities' ecology

slowly changes the culture as well, assimilating them to the colonial perspective either by a)

poisoning the land and removing the means for self-sufficiency – methods that are likely tied to

their culture and worldview,[14] or b) recalibrating the community's perspective to better align

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[13] Auyero and Swistun are writing before Nixon's work on "slow violence," but their ethnographic study of a small settlement, called Flammable, follows the social and health consequences from living beside manufacturing plants, an oil refinery, and industrial storage facilities. The accretive pollution plays a strong role in forming "toxic uncertainty" because targets of blame disintegrate with time and hide in overlapping actors and perspectives: a "temporal camouflage" (Nixon, 2011, p. 60).

[14] Liboirone (2021) provides an example of a group of Indigenous people continuing to eat plastic-filled fish despite health advisories against it. The culture is so dependent on eating fish (through inter-personal relationship, land

with colonial and capitalist goals through CSR programming (Hanlon & Flemin, 2009;

Liboirone, 2021).

But slow violence does not only exist in the extractive industry, and neither is it

necessarily happening in a far-off elsewhere beyond our Western view. Silicon Valley's

operations in Santa Clara have produced 23 sites of significant hazardous pollution, and IBM's

company town has exposed its employees to cancer-causing solvents; it appears that even the

clean-looking, smokestack-less production factories of the Information Society reproduce the

same hazardous pollution as the 'dirty' Industrial Society, although in this case the victims are

also well-paid and well-educated employees (Ensmenger, 2018).[15] Even the daily (and hourly,

minute-ly, second-ly) processes of the industry are linked to slow violence through data centres

and the ephemeral Cloud. The Cloud is a "carbonivore," using an unfathomable amount of

energy, some of which is still very much linked to coal (Monserrate, 2022, p. 9). Additionally,

because data centres are in a somewhat grey area as an industry, its presence in residential areas

has harmful auditory impacts: the *constant* hum of these centres is linked to mental and physical

harm (Monserrate, 2022, pp 11-14). By looking at the Cloud and its data centres, Mel Hogan

(2018) argues that Big Tech/Data is increasingly implanting itself into our ecology by becoming

stewards to natural resources in an attempt to greenwash their operations and to guarantee the

longevity of these resources for their own future use. The harm of this practice is particularly

visible in securing access to water sources in drought-stricken States (Hogan, 2015). Turning a

colonial lens to the problem, Hogan (2018) suggests that with data centres and Cloud

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relationship, language) that they would rather continue eating the plastic-filled fish. But also it is seen as rude or
with bad intentions to ignore what the land provides for them – it is not the fish's fault it is poisoned.
[15] Nathan Ensmenger brings together these examples, citing Peter C. Little (2014) *Toxic Town* for IBM, and
Benjamin Pimentel's (2004) "The valley's toxic history" in *SFGATE*. Silicon Valley's Superfund sites continue to
be written about, however, and are still a hazard nearly 20 years later: Evelyn Nieves (2018), "The Superfund Sites
of Silicon Valley" in *New York Times*, Tatiana Schlossberg (2019), "Silicon Valley is Full of Active Superfund
Sites," in *Atlantic*.

infrastructure becoming "the most important sociotechnical system of our time" their progress is lauded and acquisitions for server farms and expansions are encouraged. It follows that data centres are also "furthering settler futurity" through a "material and architectural creep of settler technological imaginaries." "Big Data Ecologies," as Hogan terms it, enacts the same colonial land relations as the more material extractive industry, only the PR is much less damning.

And what of these devices after they have run their course, been replaced, or break down without an avenue for repair? Sabine LeBel explores the "structured paradigm of the information age" which sets us up for the expectation and demand for unending access to resources, while obsolescent design and a consumptive habit for the newest thing encourages a quick disposal of these ICT artefacts (2016, p. 301). There are multiple levels of temporal manipulation in LeBel's analysis: the slow violence caused by extraction, the speed and immediacy expected of ICT, and the long duration of these artefacts in electronic waste trash heaps – looping around to slow violence once again. These trash heaps exist, again, because of a particular colonial land relation. The entire Information Society assemblage works because the capitalist and colonial regimes have expertly maneuvered its components to enact relationships that allow and encourage the use of land for its resources and as a dump; relationships that allow and encourage taking advantage of workforces – the worst offences of which happen elsewhere from where we enjoy our products.

Nixon's slow violence and Rothberg's implicated subject are connected and intentional aspects within Deleuze and Guattari's apparatus of capture, using colonialism and capitalism in tandem. With the construction of data centres, for example, the advantageous elements of a targeted area are *naturalized* through codification to prepare the climate for extraction. The social, economic, and environmental elements are discussed and positioned in such a way that

the choice goes without question (Brodie, 2020). The apparatus of capture is the tool of the State; it is "a phenomenon of *intraconsistency*. It makes points *resonate* together…" (Deleuze & Guattari, 1987, p. 433). It is in this context that the State uses sanctioned and lawful violence. Obviously, the librarian is not directly responsible for these machinations, yet there is some degree of trapped complicity in upholding and benefiting, as with us all.

The Librarian Intensity: Schizophrenic and Implicated

Elsewhere in this thesis, I confidently refer to the 'librarian' as a static and bounded subject; as if pointing into a crowd and saying, "that one, in the cardigan and glasses, with the book!" To think more in line with Deleuze and Guattari, it is more appropriate to say the librarian is an intensity through which an individual passes, momentarily taking on the role, characteristics, definitions, etc, emerging as a subject-being-librarian. We will be talking about two movements, then: the momentary stabilities of the librarian intensity, and the subject-being-librarian. The librarian intensity, like everything else in the world, is in flux and adaptive. It is accumulated and arranged from institutions, history, cultural surroundings, and technology. Specifically, the ALA and IFLA, in their own ways, codify the profession by laying out its values, ethics, and 'laws,' attempting to pin down what the librarian ought to be, separating personal convictions from professional duties (American Library Association, 2021d; International Federation of Library Associations and Institutions, 2012). Additionally, the history of the library institution, expectations from society, and expectations from within the profession structure the intensity. At the same time, the librarian intensity is also adapting to the changing technological, political, economic, and social environment: becoming more proficient with digital methods and tools, navigating increasingly divergent (and vocal) viewpoints, and responding to large social movements.

For example, a history imbued by liberal democratic discourse, built up from the Modern era where librarians were actively educating the masses under a fresh liberal ideology, attempts to define and structure the library today; but today's library is engaged in an entirely different social, political, and technological world that throws into question the neutral and democratic innocence of the library institution, and of liberal intellectual freedom in the face of intentional misinformation that is in some ways magnified through social media and the Internet (Popowich, 2019a, 2020). There are many things influencing the substance and the form of the librarian intensity, and it would all work more simply if the intensity was effectively "nailed down as one" (Deleuze and Guattari, 1987, p. 159); if we could say with certainty, "you are a librarian, not a social worker," or, "a librarian, not a bestseller's list," or, "a librarian, not the holy guardian of free speech." But arguably, it is not; the librarian intensity evades these restrictions, swinging between the differing, and sometimes contradictory, poles of expectations that are constructed by the cultural and institutional forces.

In the literature review, I explore the rise of the Social Responsibility Round Table (SRRT) and the following debates around neutrality, intellectual freedom, and social responsibility. In a few places, I point to how concurring social, political, and economic environments influence a shift in librarian practice: anticommunism and the divergence from a causal relationship between quality of consumed content and quality of behaviour (Knox, 2014), the cultural backlash to the Vietnam War and the rising social conscientiousness happening alongside SRRT's beginnings (Raymond, 1979), and a mixture of events and social awareness that brought insight to the value-laden biases in subject headings including the end of apartheid in South Africa (Dick & Burger, 1995), the AIDS pandemic (Segal, 1991), and the general shifting consciousness of queer identity (Joyce, 2008). These pronounced social changes

contribute to the milieu from which the librarian intensity is constituted (i.e., the social, political, economic environment discussed earlier), and encourages subjects-being-librarians to enact lines of flight, experimenting with the meaning and power of librarianship: interrogations of the bias in subject headings (Berman, 1993), calls to question the bias in librarianship's insular history and its innate social power (Wiegand, 1999), acknowledging the library's social responsibility (Samek, 2001), and uncovering the librarian's role in white supremacy and oppression (López-McKnight & Leung, 2021). These accumulations tip the library and librarian intensity into new arrangements – an acute appreciation of the social world in which librarians exist and have power over. The resulting debates around social responsibility and neutrality had the ALA assimilate the social responsibility value in a way that weakened the drive behind its purpose, and controlled the assemblage's tipping into something new. As discussed, part of this control is in maintaining a tax-exempt status by avoiding potential political engagement (Samek, 2001), and the other part conceding to vocal concerns about social responsibility leading to censorship and anti-intellectual freedom (Samek, 1996). The ALA, as a restrictive force, attempts to control how the social responsibility value structures the librarian intensity. However, the concept of social responsibility is inherently flexible and changing as it attempts to meet community needs that are as diverse as the communities. Additionally, drawing the boundary at where a library issue begins and ends is difficult in actuality. Indeed, the confusion is observable in practicing librarians (Scott & Saunders, 2021).

Although ALA and IFLA try to separate personal convictions from professional duties, they create a librarian intensity composed by contradictions that invite the subject-being-librarian, who is already moving through other intensities, to gravitate to one or the other that better aligns with their personal desiring-machine. The fact that subjects-being-librarians were

able to shift the library and librarian toward social responsibility and, as we will see in the next chapter, toward sustainability, shows this relative freedom. The librarian intensity presents as a whole but is composed of many types of being, with some of them defined as opposites. These constitutive types of being are likewise controlled and constructed by institutional codification and cultural acceptance. The particularly vocal contradiction between social responsibility and neutrality (and intellectual freedom) in the 1960s and '70s is a strong example. The socially responsible librarian is defined in a particular frame and in contrast to the neutral librarian, making it impossible for the librarian to be both, even as both concepts constitute the larger librarian intensity. As the debate is carried forward into today's critical librarianship discourse, neutrality is understood as an unexamined acceptance of dominant and harmful ideologies (e.g., colonialism, capitalism, and racism), which precludes a socially responsible alignment. Again, despite both being part of the librarian intensity, one cannot be socially responsible and neutral. As a final note, these criticisms of the library intensity are sometimes brought forward by an incompatibility of the subject-being-librarian's lived experience, perspective, or desiring-machine with the historical or professional forces that structure the librarian intensity. For example, Fobazi Ettarh's critique of vocational awe is written from her perspective as a black woman noticing, in part, how the extra affective labour often involved in librarianship self-selects those privileged enough to overcome burnout and job creep (2018). While the interjection of personal conviction is necessary, it is another example of where restrictive forces can create a schizophrenic situation or energy that forces the subject-being to pick one or the other, when it is entirely possible to hold both personal convictions and professional obligations together.

If neutrality is an unexamined participation in dominant systems, and social responsibility is listening to and reacting to the harm that comes from these systems, I argue there is a call

within social responsibility to acknowledge the librarian intensity's implication in the harms committed elsewhere, specifically though the ICT industry. The conflict between social responsibility and neutrality is similar to the conflict between the value of sustainability and the provision of technological resources. The ICT assemblage is full of problematic relations to land, people, labour, and its own materiality. The waste of ICT has never been properly contained or responsibly handled, and indeed the intentional acceleration of its replacement is a necessary component of its capitalist desiring-machine. The library, in meeting the changing needs of patrons, has incorporated increasing amounts of this technology in its intensity: resources, services, and internal operations. The strata of the two assemblages become more entangled. As the cultural milieu increases its awareness of the environmental and human harms associated with ICT's extraction industry, manufacture, and disposal, along with growing awareness of consumer responsibility, the librarian intensity gains an additional contradiction. The subject-being-librarian needs to acknowledge, as Popowich argues, the librarian's lack of innocence in reproduction and normalization of dominant systems (2019a, pp. 293–297).

Here, I consider the librarian intensity as a significant component of the ICT assemblage as the librarian intensity substantiates the Information Society and its connection with immaterial labour, consumer culture, and colonialism. Combatting this innocence means acknowledging responsibility, and moving beyond the "defensive purity of self-contained identities," and opening ourselves to others and our "unacknowledged capacity to wound" (Rothberg, 2019, p. 201). When we do so, we listen to the unbidden call that comes from elsewhere (referring back to the Judith Butler quotation that opens this thesis) and acknowledge the precarity in another's life and our identity that is in some ways wrapped up in the identity we create for others: "if we can begin to think about ourselves as multiplicities constructed by those around us, if we can

begin to think of ourselves as not just one wolf, but many – the wolf is the pack – then perhaps we can begin to think about the ways in which we act toward one another" (Stephenson, 2010, p. 101).[16] The implicated subject and the schizophrenic process both open outward and recognize that our identity, the intensity we move through, is always also composed by other people, other intensities through which other subjects are attributed: "I am on the edge of the crowd, at the periphery; but I belong to it, I am attached to it by one of my extremities, a hand or foot…" (Deleuze & Guattari, 1987, p. 29).

So, there is an attempt to close off the librarian intensity by institutional codification; it attempts to say "you are a librarian, not an activist," as if the two were mutually exclusive: two faces of the same coin, and we can only look at the one. The schizophrenic process is one of connection rather than restriction. To find our "proper name" we open "up to the multiplicities pervading [us]" (Deleuze & Guattari, 1987, p. 37). It is to find some way to hold disparate ideas and intentions together, to affirm "their distance as that which relates the two as different" and to "not confine [oneself] inside contradictions; on the contrary [one] opens out" (2009, p. 76-77). This opening out is to the BwO – to potential connections. The question is whether we are able to "distinguish the BwO from its doubles: empty, vitreous bodies, cancerous bodies, totalitarian and fascist" (1987, p. 165). What can the subject-being-librarian open out to? It is a question of what is being desired, and whether the subject-being-librarian can refrain from deterritorializing too intensively and veering off into destruction, and refrain from holding on too tightly to ideology and "self-contained identities" (Rothberg, 2019, p. 201): "I know that the periphery is the only place I can be, that I would die if I let myself be drawn into the center of the fray, but

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[16] Andrea M. Stephenson does a great job bringing together Deleuze's and Butler's senses of performativity and identity. Rothberg is also adapting his theory from Butler. The chapter "One or Several Wolves?" works through how the individual is a perpetually (re/de)constructed intensity of multiple of flows (Deleuze & Guattari, 1987).

just as certainly if I let go of the crowd" (Deleuze & Guattari, 1987, p. 29). To stay on the periphery is to be critical of values and history without abandoning them completely, and requires a fluidity that moves with the other intensities:

> This is not an easy position to stay in, it is even very difficult to hold, for these beings are in constant motion and their movements are unpredictable and follow no rhythm. They swirl, go north, then suddenly east; none of the individuals in the crowd remains in the same place in relation to the others. So I too am in perpetual motion; all this demands a high level of tension, but it gives me a feeling of violent, almost vertiginous, happiness. (Deleuze & Guattari, 1987, p. 29)

Methodology & Method

This thesis includes two case studies. The first gauges how librarians view their relationship with sustainability through a discourse analysis. The second grounds the discussion of libraries as assemblages intersecting with the ICT assemblage in observable phenomena.

Critical Discourse Analysis and values study

This study uses critical discourse analysis (CDA) to examine how sustainability is discussed within the ALA and IFLA as a gauge for how professional librarians view their relationship with sustainability, and how the associations assimilate the newer value into their professional ideal. CDA recognizes the active construction of our world through social exchanges, the tangible effects produced, the flexibility of our relationships, and the inextricable element of power in these exchanges (Fairclough, 2010). CDA asks what is being said while also trying to discover the importance of who is speaking and how they are relating their story (Williamson et al., 2018, p. 470). The applicability of CDA in social justice-based LIS research is clear in the emphasis on conversation in librarianship, in the power inherent in controlling

access to information, and in the way "[l]ibraries are subject to, and coproduce, powerful discourses about social institutions, people, culture, information, knowledge, belief systems, politics, economics, and the public good, and the relationships between and among them" (Oliphant, 2015, p. 239). In another vein, a social constructivist discourse analysis of librarian journal publications and listserv communication discovers librarians' own sense of identity (Hicks, 2014b). Through librarian discourse, my study similarly examines how librarians view their role in enacting sustainability and how they are influencing the sustainability discourse around librarianship. Are they sustainability activists, leaders, resources, and/or community boosters? The focus is on how sustainability is discussed and defined within the two most influential library associations that shape the profession's ideals and identity. These associations exhibit power structure both within their governance and over the profession.

The ALA can boast to being the oldest and largest library association (American Library Association, n.d.-b); it also maintains accrediting power over LIS schools in the United States, Canada, and Puerto Rico (American Library Association, n.d.-c). The ALA, then, is a considerable force within the profession: defining its goals, professional obligations, and commitments to ethical principles. These expectations are structured into LIS courses and taught to incoming librarians and information specialists.

IFLA has a different purpose and scope; it instead offers a global voice for the profession, as well as facilitating regular international conferences where librarians can engage with each other on a worldwide scale. The federation likewise has its own core values and definitions for the goal of librarianship, and provides a code of ethics for individual affiliations to adopt. The Canadian Federation of Library Associations, for instance, uses the IFLA code of ethics.[17]

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[17] The Canadian Federation of Library Association's code of ethics can be found here: http://cfla-fcab.ca/wp-content/uploads/2019/06/Code-of-ethics.pdf

As Deleuze and Guattari help explore, regimes decode and recode elements to bring them into their assemblage – to redefine the thing into a 'proper' relation with other things. For example, the ways social responsibility was assimilated into ALA's core values. While they often explore regimes through a capitalist critique, the theory can be applied in a broader understanding of institutional control and the power of codification. Both the ALA and IFLA enact codification of the profession, bringing prospective librarians and information specialists in line with a particular view of ethics, values, and responsibilities. When new aspirations accumulate and threaten to veer off from the established view, it is the institution's desire to restrain and recodify in order to bring them back in line with the rest of the professional view. Through CDA, then, this study examines the relations and power at play between professional librarians and their institutional regimes.

Discourse from three levels is collected and analyzed in order to generate a full picture: from those with the most decision-making power (governing boards), to the smaller groups of enthusiasts (e.g., task forces, round tables, and special interest groups), to the individual professional level. However, the analysis needs to also account for who is speaking and to whom. The groups are classified as such:

1. Governing Documents: minutes from annual or semi-annual meetings, including resolutions, recommendations, and task force reports from the smaller working groups. This category captures governing-level decision making and discourse. The audience is primarily those involved in and interested in the association's administration.

2. External Messaging: a variety of documents are considered, including websites, blogs, and polished annual reports published by both the larger associations and the smaller

working groups. The intended audience is a broader public of librarians and information specialists.

3. Professional Discourse: blogs and articles in publications affiliated with the larger associations and working groups. This category captures discourse within the professional level, between library and information specialists.

Alternative consideration is required for IFLA's governing documents. While ALA's annual meeting minutes include input from task forces and round tables in the form of resolutions or reports, IFLA's meeting minutes have a higher level of abstraction and generalization of speech, which makes discourse analysis incompatible. A content analysis informed by the same questions was more appropriate. Additionally, professional discourse from ALA was collected from a "sustainability in libraries" tag in *American Libraries,* a magazine published by the ALA that encourages the "voice of the profession" as it relates to the Association's "activities, purposes, and goals" (American Library Association, n.d.-a). The nearest corresponding type of professional-to-professional discourse in IFLA is conference papers from the environmental group's sessions at the annual World Library and Information Congress. Conference papers were skimmed, then focused on discussion specific to library and librarian relationship to sustainability goals; some articles were excluded for being out of scope. See appendices A for the lists of sources examined in each of these categories.

The documents were categorized into the three groups above to maintain the separation of intent between speaker and audience, as well as the power levels. The questions "how do librarians relate to sustainability? How do they enact sustainability?" were at the forefront while reading the documents. One to five of the most relevant statements were recorded, then grouped by similarity. Themes were determined with the starting questions still in mind. The themes were

then applied to the statements recorded. This study aims to answer the research question: how does the library and its librarians understand their core values of social responsibility and sustainability?

Observations and library case studies

For this second study, I spend time inside academic and public libraries to observe interactions and gain insights from being in the library's space; I primarily think qualitatively, although some measurements are done by counting interactions, activities, and technological affordances of the space. The chosen institutions are investigated through observational site visits in combination with information gathered from their websites, news, and other external sources of published information. The purpose is to ground the lofty theoretical discussion of assemblages into observable interactions and functions, which goes toward answering my research question: in what ways does the library produce and reproduce the harms and exploitations of land and labour present in the technology industry's practice?

Four libraries were selected in total, two from Edmonton's public libraries (EPL) and two from the University of Alberta's libraries (UAL). See Table 1 and Table 2 for a breakdown of my visits, reasons, and notable details below. Each library was visited twice over two weeks for a length of time between one hour and two and a half hours. The two EPL branches visited were Stanley Milner and Clareview. The first was selected because it recently finished its renovations in 2020 and clearly aims to be a state-of-the-art library with many ICT integrations. The Milner library is also a recent recipient of IFLA's Green Library Award for its green architectural design. Clareview was selected as a smaller Edmonton branch that is part of a Community Recreation Centre, which includes a gym, a swimming pool, hockey rink, basketball courts, tennis courts, children's indoor playground, childminding, YMCA daycare, and multipurpose

rooms. The library and recreation centre were completed in 2014 – older than Milner, but still a recent example of library planning. For the academic libraries, Cameron Sciences, Engineering, and Business Library and Rutherford Humanities, Social Sciences, and Education Library were selected. These are the two major libraries on the North Campus that see the most traffic from students. A happy coincidence that they are somewhat opposites in their fields of study. During these visits, field notes were recorded and partially analyzed on site. Additional analysis was done after the first round of visits, and again after the second. Additional analysis of the fieldnotes occurs alongside the investigation of published information and in searching for themes among the notes.

Table 1

Details for site visits to Edmonton Public Library branches

Name	Date and time	Date opened	Award	Reason for selection
Clareview branch	17-03-2022, Thursday, 10:37am - 11:45am. 24-03-2022, Thursday, 2:10pm - 3:45pm.	2014	Bomba Best; LEED	A small branch located within a Community Recreation Centre, which places the library within the community, both physically and conceptually.
Stanley A. Milner branch	18-03-2022, Friday, 1:32pm - 2:40pm. 24-03-2022, Thursday, 11:00am - 1:08pm.	2020 (renovated)	IFLA Green Library Award; LEED	Newly renovated: a state-of-the-art library with clear affinity for technology. IFLA award for green architectural design.

Table 2

Details for site visits to University of Alberta Library locations

Name	Date and time	Date opened	Award	Reason for selection
Cameron Sciences, Engineering and Business	18-03-2022, Friday, 11:14am - 12:45pm 22-03-2022, Tuesday, 12:30pm - 2:45pm.	N/A	BOMA BEST silver rating	A major library on the North Campus.
Rutherford Humanities, Social Sciences, and Education	15-03-2022, Tuesday, 11:00am - 1:15pm. 23-03-2022, Wednesday, 12:50pm - 2:40pm.	N/A	None	A major library on the North Campus.

A variety of peripheral sources are included in the dataset (see Appendix B for this list).

The portfolio of Teeple Architects, who designed both EPL libraries, interviews, and award

recognition pieces all discuss the builds and intentionality of design. With Milner's re-opening

coinciding with Covid-19 safety measures, a virtual tour is available online wherein librarians

showcase the spaces. Additionally, EPL provides plenty of information online about the spaces,

how they are equipped, and intentions. The Milner branch has especially seen much coverage in

the news which also often includes broader EPL goals and values. The UAL libraries receive less

fanfare, but plenty of information is gleaned from the UAL website, as well as other departments

of the institution, primarily, the Sustainability Council and Information Services and Technology

(IST). Outside of the university, I review Sustainability Tracking, Assessment & Rating System

(STARS), a framework for universities and colleges to self-report on their sustainability

accomplishments, and with which the University of Alberta has received Gold standing (second

to Platinum). Following a pre-existing procedure for librarians fulfilling an ethical consumption

of ICT (Zazzau, 2006), I also examine Apple, Dell, and Lenovo sustainability reports and

supporting documents relating to sustainability and supply chains (See Appendix C for a list).

This observation study was conducted during the reopening phase of Covid-19. As such, attendance and activity in the spaces is likely different from pre-Covid-19, or even six months later. I suspect this change in behaviour would most impact my assessment of ICT meeting patron needs in the space, which Poggiali (2016) suggests observing and assessing in order to meet an ethical consumption of ICT in library spaces.

Conclusion

This theoretical framework is, perhaps, a bit rhizomatic itself; I do not follow a single theory, methodology, or discipline. Like Frankenstein and his monster, or like an eager dog collecting fallen leaves on a walk, I bring together distinct scholars and deposit them on your step – or leave them to rampage through your village. Through "slow violence," I explore the form it gives to the elusive and seeping fallout of MNC's business practices – disproportionately impacting marginalized communities in the past, present, and far-reaching future, although violence happens within our Western vision as well. The "implicated subject" must look outward to the maltreatment of people and land, and accept their role and identity in the conflicts that often feel obscured and indirectly related to us, all while being integral to our day-to-day lives: gasoline, textiles, food, electricity, and as the thesis explores, digital technologies and their infrastructures. Yes, the two stitch together quite nicely.

When we look at things from the middle, we recognize that there is always more below and above (or on either side) that is constituting the 'thing' and is constituted by the 'thing,' and that our milieu – our surrounding environment that constitutes the intensity through which we pass – contains flows from many directions, many other intensities (or assemblages). Slow violence is such a dastardly thing – it is subtle, quiet, demanding, and hard to prove. For us. But slow violence is an intentional tool used against other communities, labourers, and the

environment; it is sanctified by our capitalist worldview and colonial land relation. Even as there is a rising social awareness about these harms, the practice remains expected and allowances are made. Or do we feel there is no other choice in our dependence?

Acknowledging that this slow violence is part of the library assemblage and librarian intensity creates contradiction between librarianship's call to quality service and the commitments to social responsibility and sustainability. I have explored how these contradictions develop within the librarian intensity through the neutrality debates; the value is codified primarily from above, but also partially constituted from below alongside a changing social milieu that recognizes the librarian's power and responsibility within communities. This event creates a socially responsible librarian intensity that clearly contradicts other intensities of librarianship (e.g., those driven by neutrality and a particular definition of intellectual freedom). The ALA puts forward a holistic ideal of the librarian intensity, which forces subjects-being-librarians to navigate the contradicting values, and with the vocal position that neutrality and intellectual freedom are opposite to social responsibility, this meant choosing 'either or' instead of finding a way to hold the concepts together with a schizophrenic 'and,' which would be to say "I am a librarian and a social activist and a guardian of intellectual freedom."

Another librarian intensity is created through sustainability discourse and subsequent institutional codification. And, as mentioned above, contradiction is created when we acknowledge the presence of slow violence in our ICT, and subsequently in our libraries and librarians. The schizophrenic solution, here, is to open outward, accept the participation in harmful systems (i.e., the implicated subject) and the librarian's role in naturalizing ICT (and its problems) and in the necessary accumulation of ICT within the library space.

Chapter 3: Sustainability and the New Librarian Intensity

The librarian must come to terms with its teleological tendency to see its professional ideals as already having the answers for the problems that lie ahead, which is visible in the tunnel vision and blind spots of an unexamined past (Wiegand, 1999), and the profession's idolization of its democratic and liberal identity (Popowich, 2019a, 2020). Vocational awe substantiates these ideologies: it is a "set of ideas, values, and assumptions" that create beliefs in the library as "inherently good and sacred, and therefore beyond critique" (Ettarh, 2018). This type of thought, for Deleuze and Guattari, is arborescent because it assumes a filial, predictable, *lineage*, rather than the unbounded potential of connections (the rhizome).

The connection of librarianship with ICT creates important questions about the purpose and role of the library and librarian, changing relationships between resources, skills, buildings, employees, local community, institutions, businesses, and the librarian's broader place in society. The librarian needs to look somewhere for guidance. But embedded ideals threaten to allow "what began as a good story [becoming] the *only* story about libraries and librarianship" (Chiu et al., 2021, p. 55). Codified professional values pose the same threat, which is why critical reflection on values and ideologies is required to maintain a flexible and truly adaptable profession.

Librarians wonder over the trade-offs being made in accommodation to ICT's presence, concerning the general purpose and intention of the library (Gorichanaz, 2019; Gorman, 2015; Lankes, 2011), as well as how to adapt values of privacy, sharing, preservation, and access (Algenio & Thompson-Young, 2005; Yelton, 2012; Zimmer, 2013). The ALA and IFLA have responded to some problematic aspects of ICT within librarianship, for example: participating in net neutrality politics and resolving to protect patron privacy in the face of encroaching facial

recognition and data tracking surveillance (American Library Association, 2021a, 2021c, 2021b), and the threat to democracy as governments restrict or watch Internet usage, which is becoming integral to the access of information (Garrido et al., 2019). These responses have grown out of pre-existing core values: access and privacy. I suggest that social responsibility and sustainability likewise need to be reflected on in exploring the relationship between librarianship and ICT.

As a starting point, I propose the librarian has elevated stakes and complicity in their relationship with ICT because the library is a significant consumer of digital technologies (both material and immaterial) and contributor to the reification of the Information Society – public and academic libraries in their own arrangements. When ALA (2021d) and IFLA (2012) codify a dedication to the highest level of standards and service, they push the librarian toward maintaining up-to-date technology, services, and skill. The line that flows through slow violence, ICT, and librarianship, gains intensity, and creates contradiction in values and expectations: service and the public good *or* sustainability.

I launch into a reflection on professional values and intentions with this conflict in mind: to enact thoughtful praxis that "carries social and ethical implications and is not reducible to technical performance of tasks" (Budd, 2003). Or, put another way:

> To cultivate praxis is to remain curious about our practice and engage with it. It is to want to know internally and externally what is changing and what is steadfast in our profession. It is to think critically about our greater purpose and current goals when we make decisions. Praxis brings philosophical underpinnings to our daily routines and professional decision-making. (Ford, 2012)

At its heart, this thesis is asking librarians to follow that curiosity, that self-reflection, to think about the intentional and unintentional outcomes of their active roles in the tech industry's

assemblage, and which assemblage is maintaining its territory, its internal relations, when the two meet.

In this chapter, that reflection is through investigating how the sustainability value guides librarianship. By exploring the discourse in both ALA and IFLA, I find a rhetoric that centres librarians as leaders and role models with a unique position to foster strength and resiliency in their communities, partly through partnerships and providing access to quality information. The desire and responsibility to encourage resilient communities shows an overlap of intention between the sustainability mindset and social responsibility. We also see that while codification comes from institutional power, the value is also built from engaged librarians, suggested an immanent accumulation. However, absent from the discourse is self-reflection on how the library or librarian shares responsibility in poor sustainable practices, and outside of a few unique initiatives, the librarian does little to look outward from its already ingrained identity. Ultimately, sustainable librarianship can take two forms: a) showcasing building design and green operational practices, or b) using theoretically informed librarian skills to meet sustainability goals such as teaching information literacy, acting as a hub of information and discussion, and encouraging exploration (e.g., butterfly gardens, seed libraries, or Indigenous spaces). These forms of action are the same types of discussions LIS professionals have been having since environmentalism appeared in the literature, although the literature from the review also includes critical reflections on the library and ICT relationship.

Method

A full discussion of this study's methodology is reviewed in the previous chapter. As a brief reminder, I apply Critical Discourse Analysis within Deleuze and Guattari's conceptualization of the regime's desire to bring things into a particular, proper, relation, which

can be understood also as an institution's control and codification. The professional values are an important aspect of this codification, and how they are discussed should show elements of the powers at play in negotiating their meaning and purpose within the institution. Sustainability is a recent addition to the ALA core values and has less scholarship addressing its meaning to the profession – whereas social responsibility, as shown in the literature review, has an exceptional history and influence in current scholarship. This study focuses on sustainability to acquire better understanding of how the value is understood at varying perspectives within the associations. While the decision to study it is based on the ALA's values, and not explicitly codified by IFLA, their dedication to the United Nations' Sustainable Development Goals (SDGs) and working group for Environmental and Sustainable Libraries (ENSULIB) shows a similar professional commitment. The study collects primary source material, from both ALA and IFLA, at the levels of governing documents, external messaging, and professional discourse (see Appendix A for a list of these sources; this chapter's footnotes refer to this Appendix). These statements are then grouped by similarity and determine thematic groupings. These themes are then re-applied to the original statements to get a sense of what work the documents are doing, what perspective is missing, and emphasis.

Table 3

Details of ALA and IFLA documents

Category	Type of source	Time frame	Number
American Library Association (ALA)			
Governing documents	Minutes from annual and semi-annual meetings that included: resolutions, recommendations, and task force reports.	2015 - 2021	10

External messaging: ALA	Core values, ethics, strategic directions, mission and priorities, key action areas, and a statement on global climate change.	2008 - 2021	7
External messaging: SustainRT	Sustainability Roundtable's website, about the blog, annual reports, strategic plan, and a response to Donald Trump's inauguration.	2013 - 2018	6
Professional discourse	Articles published in the *American Libraries* (ALA's magazine) tagged with "sustainability in libraries".	2015 - 2021	26

International Federation of Library Associations and Institutions (IFLA)

Governing documents	Minutes from governing board documents and general assemblies.	2017 - 2021	17
External messaging: IFLA	President's address, Development and Access to Information reports, Sustainable Development Goals Stories Map, strategy plans, and annual reports.	2017 - 2021	9
External messaging: ENSULIB	Annual reports, strategy plans, curated resource guides, and ENSULIB's website pages.	2019 - 2021	8
Professional discourse	ENSULIB's sessions at the World Library and Information Congress.	2016 - 2019[a]	14

Note. The time frames for external messaging may not be accurate reflections, due to the living nature of websites.

[a]2020's conference was cancelled due to the Covid-19 pandemic, and access to 2021 required membership at the time.

Results

Governing Documents

ALA and Task Force on Sustainability. In 2015, the ALA resolves to recognize the importance of sustainability in librarianship, noting the "important and unique role libraries play in wider community conversations about resiliency, climate change, and a sustainable future" alongside "enthusiastically" encouraging activities that are "proactive in their application of

sustainable thinking in the areas of their facilities, operations, policy, technology, programming, partnerships and library school curricula."[18] Indeed, the arguments leading up to the resolution also affirm that "libraries are uniquely positioned and essential to build the capacity of the communities they serve to become sustainable, resilient and regenerative." There is an emphasis on leadership, unique positioning, and service to community resilience in this resolution. These themes are later picked up by the Task Force that the ALA sets up to explore "how libraries may provide leadership and serve as a model for sustainability in the communities they serve," in addition to how the ALA can be leaders to the profession.[19] In the 2018 report, the Task Force explicitly outlines the three themes already addressed: "leadership and innovation," "conveners and connectors," and "contributors to community resilience."[20] In this and subsequent documents, the Task Force ties sustainability into the core of the association: "to create a cohesive rallying point" for members to gravitate and "connect with ALA's Core Values,"[21] to "clearly convey why we do what we do,"[22] "sustainability is a lens through which all decisions should be analyzed as it provides the guidance we need to be true to our core values,"[23] and to "infuse sustainability into the DNA of our association."[24] The Task Force calls for sustainability to be "explicitly" added to the professions Core Values and built into the organization's framework,[25] and made "authentic and abundantly visible."[26]

[18] American Library Association. (2015). "Resolution on the importance of sustainable libraries".
[19] See Appendix 2 in Aldrich, R. S. & Tanner, R. (2018 June 15). "Sustainability task force report".
[20] Aldrich, R. S. & Tanner, R. (2018 June 15). "Sustainability task force report" (pp. 5-6).
[21] Aldrich, R. S. & Tanner, R. (2018 June 15) "Sustainability task force report" (p. 2).
[22] ibid
[23] Aldrich, R. S. & Tanner, R. (2018 June 15). "Sustainability task force report" (p. 3).
[24] Aldrich, R. S. & Tanner, R. (2020 June 12). "ALA special task force on sustainability" (p. 2).
[25] Aldrich, R. S. & Tanner, R. (2019 January 16). "ALA special task force on sustainability report" (p. 1).
[26] Aldrich, R. S. & Tanner, R. (2020 June 12). "ALA special task force on sustainability" (p. 4).

While the Association's originating charge for the Task Force is rather short and to the point, it asks for ways to increase an "adoption and implementation of sustainable practices."[27] In some contrast, subsequent reports from the Task Force emphasize sustainability as a mindset, a compass, and an infusion – not just actions that can be picked up and used. Within this flow, the Task Force notes that the association's members do not see the ALA as a model for sustainable practices, and in gentle phrasing, challenges the Association to follow its own values and lead by example, to "inspire our profession and our communities."[28] The Task Force shares recommendations for the Association, turning the discourse toward stewardship and accountability, asking them to champion "at the highest level" the commitment to infusing the association with sustainable thinking, which includes forming partnerships and elevating the visibility of sustainability within the association.[29] Final thoughts from the Task Force are sentimental and hopeful of ALA's commitment to sustainability: "We have found this work inspiring, and we hope that you feel the same. It gives us hope that we are on the right path and that with your commitment we can truly live our values out loud through our association."[30]

From the first steps in exploring the library's responsibility to sustainability, the documents discuss sustainability holistically as an environmental, economic, and social concern, the key to which is the development of sustainable communities through exemplar practices, providing resources, programming, and forming partnerships with other key players in the community. The three-part sustainability definition is explicitly included in the task force's first report (2017), and is later referred to as the Triple Bottom Line (TBL) in both reports and the professional discourse.

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[27] Aldrich, R. S. & Tanner, R. (2018 June 15). "Sustainability task force report" (p. 3).
[28] Aldrich, R. S. & Tanner, R. (2019 January 16). "ALA special task force on sustainability report" (p. 3).
[29] Aldrich, R. S. & Tanner, R. (2020 January 15). "Sustainability implementation team interim report" (p. 6).
[30] Aldrich, R. S. & Tanner, R. (2020 June 12). "ALA special task force on sustainability" (p. 2).

IFLA. As mentioned earlier, the analysis of IFLA's governing documents focuses on the contents of fourteen Governing Board minutes and three general assemblies. There is a clear commitment to the UN's 2030 Agenda and the seventeen SDGs it outlines, which are at the heart of the "blueprint for peace and prosperity for people and the planet, now and into the future" (United Nations, n.d.). They tackle a range of the world's issues, including poverty, clean drinking water, affordable energy, labour, responsible consumption and production, and climate action, to name a few. There is the same understanding of sustainability as a holistic problem: economic, environmental, and social. The commitment is repeatedly summarized in the president and president-elect's programmes, present in a handful of board member's activities, and is the motivation for the Library World Map project which gathers data and stories about how the world's libraries are advancing the SDGs.[31] Additionally, in the preliminary work for IFLA's Trend Report, sustainability and the SDGs are targeted as trends affecting libraries.[32] From these minutes, one paragraph stands out: in a conference on the SDGs, a message was conveyed from the Director of the United Nations Library stating that "libraries are more important now than they have ever been."[33] Although there is little context for this statement, there is the similar pride for library work and sustainability goals in IFLA as in the ALA, and is a clear goal of IFLA, based on members' activities and attention given to SDG-related projects.

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[31] International Federation of Library Associations and Institutions. (2017). "Fifty-fifth meeting" (p. 11).

[32] International Federation of Library Associations and Institutions. (2019). "Sixty-fourth meeting" (p. 5). The Trend Report's timeline was interrupted by Covid-19.

[33] International Federation of Library Associations and Institutions. (2017). "Fifty-seventh meeting" (p. 7). This quotation is a summary within the minutes and is passed on through an IFLA representative who had a conversation with the Chair of the United Nations Committee that developed the SDGs, who passed along the Director's sentiments. This quotation is also an example of why governing board minutes make poor source material for discourse analysis.

External Messaging

ALA. Sustainability is included as an ALA Core Value in 2019. The value repeats many of the statements expressed by the Task Force: "Libraries play an *important and unique role* in promoting community awareness about resilience, climate change and a sustainable future. They are also *leading by example* by taking steps to reduce their environmental footprint" (American Library Association, 2019, emphasis added). The three-part definition is also used. Additionally, the ALA president (Loida Garcia-Febo) also refers to libraries as "catalysts" that "inspire future generations" in the press release.[34] The press release references the work of the Task Force and their recommendations for the ALA to be a better leader to the profession. It then "recognizes the findings" of the UN's 2018 Intergovernmental Panel on Climate Change report, and ends by pointing to the ALA's 140 years as "the trusted voice" for the profession. The press release makes an effort to explain the ALA's reasoning and ends with a reminder of the Association's historical power and purpose. Finally, despite the Task Force reports emphasis on sustainability as a mindset, the core value and press release both focus on "practices."

SustainRT. The ALA Sustainability Round Table (SustainRT) is formed out of the SRRT's Task Force on the Environment, and its official name includes the byline: "Libraries Fostering Resilient Communities"[35] No mention is made of the ALA's Task Force on Sustainability examined in the previous section.

SustainRT's external messaging is consistent throughout; it is intended to foster a collaborative place for library professionals to share ideas, to provide resources for program development, advocacy, exhibits, collections, and building and space design. SustainRT

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[34] American Library Association. (2019 May 14). "ALA adding sustainability as a core value of librarianship".
[35] Sustainability Round Table. (n.d.). "About SustainRT".

"employs a broad, holistic definition of sustainability,"[36] although their main page does not mention an environmental commitment: "… to move toward a more equitable, healthy and economically viable society."[37] Instead, images of vegetation and solar panels on the homepage seem to fill in that gap.

The environment is more apparent in their strategic plan, where "environmental responsibility" is explicitly one of their core values, alongside "social equity" and "economic feasibility."[38] Environmental responsibility means "employing natural resources in a way that recognizes their true value, reduces unnecessary waste and consumption, and utilizes techniques that allow for renewal of resources." In a more powerful flow, "social equity" includes "*facilitate[ing] greater* access and *empowerment* for those experiencing systemic injustice," while "economic feasibility" includes "directing purchases to business and organizations that share our values."[39] There is a clear social justice ethic and awareness of the consumer's responsibility. Additionally, the vision statement includes a *personal* responsibility as well as a professional one, and "in doing so, they grow the *capacity* of the various communities in which they engage…" to operate sustainably. Their mission statement refers to making connections and providing leadership, as well as "the development, promotion, and improvement of sustainable *thinking* and practices…" This continues the emphasis in building connections and providing leadership that was discussed earlier, as well as the sustainable mindset that sees it as a continuing method rather than a checklist of actions.

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[36] Sustainability Round Table. (n.d.). "About SustainRT".
[37] Sustainability Round Table. (n.d.). "Sustainability Round Table".
[38] Sustainability Round Table. (n.d.). "SustainRT strategic plan 2021-2024" (p.1).
[39] Sustainability Round Table. (n.d.). "SustainRT strategic plan 2021-2024" (p.1.). Emphasis added.

One document stands apart from the rest: a message to the library community after former President Donald Trump's inauguration.[40] In this, SustainRT's language is strong, determined, and just short of combative. The SustainRT "stands firmly in [their] profession's core values," and promises to "double down on [their] commitment" to guide the profession. Not only does the library provide "vital places" but also "brave spaces," which implies a sense of assertiveness. The message references the 2015 Resolution on the Importance of Sustainable Libraries and welcomes a climate change specialist as the keynote speaker for ALA's 2017 conference. It ends by calling librarians to write in to representatives "to *protest the nomination* of cabinet members who threaten to harm our nation's public lands, people and the environment." By referencing the ALA's resolution and inclusion of a climate change specialist, SustainRT substantiates their frustrations and anxiety about the new United States' administration as within professional purview. However, this letter, as well as SustainRT's vision statement that calls on personal responsibility, crosses ALA's non-partisan stance and differentiations between professional and personal convictions (American Library Association, 2021d).

IFLA. In the most recent president's acceptance speech, Glòria Pérez-Salmerón sees the main task of IFLA and librarians is to be "the gears of the motors for real and visible change and the development of our society" – something that is "much more" than the daily tasks or discussing standards and guidelines.[41] Pérez-Salmerón centres the UN 2030 Agenda "as an opportunity to help people achieve the [SDGs] through our library activity." Further, "let us work together with our governments and institutions in the development of national plans,

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[40] Sustainable Round Table. (2017 January). "Post-inauguration message to the library community". Emphasis added.
[41] Pérez-Salmerón, G. (2017). "Acceptance speech: Glòria Pérez-Salmerón".

putting forward initiatives that can facilitate the transformation of our world." Pérez-Salmerón's

IFLA is a politically engaged association, actively involved and seizing "an opportunity"

provided by the SDGs. She emphasises the library as a "motor of change" throughout her speech,

calling librarians "powerful and passionate." She calls on IFLA's Sections and Special Interest

Groups to participate in "synchronized" activity, to "share a common vision and structure [their]

responsibilities in order to get effective global results." The address uses evocative language,

including a quotation from a Spanish poem (translated: "Traveller, there is no path. The path is

made by walking"), and emphasizes her "trust" in the members, ending: "I count on each one of

you!" The focus of IFLA in this address are the SDGs and how libraries can be "motors of

change" through them.

For IFLA, change is best instigated through access to information, as seen in the

Development and Access to Information report – which is "both a calling card, and a sign of

IFLA's contribution to global thinking about how to achieve the SDGs."[42] The project is in

partnership with Technology and Social Change Group at the University of Washington.

Between the 2017 and 2019 reports, they have studied nine of the 17 SDGs. Discussing the role

of libraries in providing access to information: "they are *guardians* of much of the world's

documentary heritage, as well as the *source* of the raw materials for *innovation*."[43] "They also

have an important social mission," referencing the Modern era's cause to educate the masses.

Despite a changing world, "the core mission of libraries remains relevant, and *arguably more so*

than ever." Access to information is linked to employment, entrepreneurship, research,

innovation, and civic and social life – without it, people are cut off from their culture and ability

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[42] International Federation of Library Associations and Institutions. (2019). "Sixty-first meeting" (p. 9).
[43] Wyber, S. (2019). *Making it meaningful, making it equitable: the role of libraries in delivering development*. (p. 17). Emphasis added.

to "make the right decisions for themselves and their communities." A feedback situation develops to "reinforce social and economic disadvantage." The library "can provide an effective way out." In this introductory section, libraries are situated as having always been part of social well-being (a "social mission") and integrated many aspects of social, economic, and political life. Continuing, librarians "have two unique strengths" including "expertise and experience" in accessing and using information and being "open to all, at all stages of their lives."[44] Considering the rapidly changing information environment, "this role is particularly crucial" in levelling the racial, gendered, and classed playing field, and a "crucial response" to misinformation. Libraries "help make rights become a reality" through their emphasis on free expression and free access to information. With the two values in particular, "libraries *empower* [people] to create" and realise their rights.[45] Finally, libraries "support efforts to build more peaceful and stable societies" by having inclusive services and collections and in acting as "memory institutions that can enable healing and reconciliation." In concluding remarks, libraries are "development accelerators" and are "well-placed to support the delivery of all the [SDGs]."[46] There is clear pride in the library's role, here, as the librarian's hand is felt in all aspects of life and lifts the disadvantaged up to a more even playing field. The professional skill and expertise of the librarian are highlighted as particularly necessary and valuable in sustainable development of local communities. It is also a broad perspective with no mention of environmental sustainability. For this thesis, it is also worth considering the general emphasis on ICT as an accelerator of information access,[47] and how the library's relevance hinges on its use.

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[44] Wyber, S. (2019). *Making it meaningful*. (pp. 18-19).
[45] Wyber, S. (2019). *Making it meaningful*. (p. 20). Emphasis added.
[46] Wyber, S. (2019). *Making it meaningful*. (p. 21).
[47] Garrido, M., Fellows, M., & Norlander, B. (2019). *Progress toward meaningful A2I, and emerging threats*. (p. 3).

Looking at IFLA's annual reports and strategy plans, sustainability is frequently referenced in relation to the SDGs – "advocating for the *critical* role of libraries" to achieve them is part of the 2017 presidential agenda.[48] There is, as well, repetition of the link between access to information, sustainable development, and libraries: "There is no sustainable development without access to information. And there is no meaningful access to information without libraries."[49] Both statements are carried forward by the next president, repeating the "motors for change" motto discussed earlier. The most pronounced discussion of the environment and climate change is in chapter 6 of the Information reports, although the library's contribution is again through access to information: the library "must play a major role" in addressing misinformation and it is "a fantastic tool for sharing human knowledge."[50]

ENSULIB. Front and centre, ENSULIB's main page says they are here to "encourage librarians to *inspire* their communities into more environmentally sustainable ways of action," which involves providing materials, a space to discuss green librarianship and projects, and "leading by example" themselves.[51] Moreso, "Green and Sustainable libraries are particularly *predestined* to take on the role as exemplars, educators, and enablers." The same statement, but with a less fated tone, is used for a conference program.[52] ENSULIB seems to have a focus on environmental sustainability, tacking on "other threats including social inequalities." This sense is partially explained by the opening remarks of ENSULIB's newsletter by Chairperson, Harri Sahavirta: "Environmental sustainability in libraries is currently at a very interesting stage,"

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[48] International Federation of Library Associations and Institutions. (2017). "IFLA annual report 2017" (p. 3). Emphasis added.
[49] International Federation of Library Associations and Institutions. (2017). "IFLA annual report 2017" (p. 13).
[50] Falkenberg, K. (2019). *A2I and climate change.* (pp. 46-47).
[51] International Federation of Library Associations and Institutions. (n.d.). "Environment, Sustainability and Libraries special interest group". Emphasis added.
[52] Environment, Sustainability and Libraries Section. (2021). "WLIC 2021 virtual conference open programme by the ENSULIB Section".

broadening to include the "carbon handprint and the sharing economy, and principles like the [SDGs]."[53] Sahavirta's specification of "environmental" sustainability indicates a distinction from the three-part definition. The distinction is potentially a strategy to segue into the expanding definition, as the newsletter goes on to discuss how the Green Library Award evaluation criteria needs to be rethought to include green library buildings and green library initiatives to include the broad definition.

Professional Documents

Twenty-six articles with "sustainability in libraries" tags are analyzed from *American Libraries*. The majority of these articles are published during sustainability events in 2017 (nine) and 2020 (eleven). Outside of these organized articles, the first tagged article appears in 2015, two in 2018, and four in 2021. The topic seems to be receiving more attention, although still quite sparse outside of concerted efforts by the sustainability enthusiasts. Fourteen (nearly half as many) ENSULIB conference papers from between 2016 and 2019 are analyzed. Together, five major themes appeared: describing librarianship's role, examples of action, broadened definition of sustainability, partnerships, and community. A quick breakdown of the themes and examples of the statements they capture are found in Table 4 and Table 5. Emphasis in the following quotations is added.

Table 4

Examples for the remaining four themes

Theme	Examples of statement captured
Describing the librarian's role	See Table 5 for subthemes and their examples.

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[53] Environment, Sustainability and Libraries Section. (2021). "ENSULIB Newsletter" (p. 3).

Examples of action	Reducing greenhouse gas emissions, reducing fuel usage, recycling, conscientious consumerism, facilitating debate, access to information, workshops, outreach, personal responsibility.
Broadened understanding of sustainability	Holistic, expanding realm, wider perspective, centre sustainability in operational practices.
Partnerships	Collaborate to create new opportunities and challenges, join other professionals and stakeholders, develop knowledge base through partnerships.
Community	Empowering people, community, and public, strengthening the public's voice, align with community-identified needs, to be community partners, preparing communities, coordinating community resilience.

Table 5

Examples for the subthemes of the theme: describing the librarian's role

Subtheme	Examples of statement captured
Through positioning	Positioned perfectly, uniquely, at the heart of sustainability, centre of society.
Through charged language	Catalysts, co-custodian, exemplar, morphing into emergent forms, an ambassador and flagship, integral part, a pioneer in sharing.
Leader	Taking the lead, leading communities, being grassroot initiators
Supportive	Promote sustainability campaigns, showcasing and performing sustainability, helping communities adapt.
Practical	Literacy educator, information resource.

Describing librarianship's role

The professional discourses from both *American Libraries* and ENSULIB's conferences give considerable time to describing the librarian's role with sustainability. This theme is divided into five subthemes. The first captures instances of direct comments on the position of the library in relation to sustainability. For example: "libraries are at the center of the society and they can

play a *vital role in transforming* our world towards a sustainable future;"[54] "libraries are *uniquely positioned* to play a *crucial role* in community conversations,"[55] and "an important role;"[56] they are "a unique entity,"[57] "an *integral part* … to *foster* sustainable development."[58] They provide "a *critical role* in encouraging sustainable practices and solution,"[59] "play a critical role" supporting campus projects,[60] are "*perfectly positioned*" to provide necessary information,[61] and "*perfectly positioned* to become leaders in sustainability."[62] Positionality and leadership continue to go hand-in-hand: libraries are "*well-positioned* to lead"[63] and have "a *notable opportunity* to take the lead."[64] Libraries are also "a natural fit" to pursue partnerships because they are centres of community.[65] In some of these examples, positionality often blends into other themes (e.g., leadership, community, supportive).

In a step further, the next subtheme captures several instances of charged language describing librarians as: "exemplar, catalyst, and convener,"[66] "innovators, and originators,"[67] "ambassadors for promoting sustainability,"[68] "flagships,"[69] "grassroot level initiators,"[70] and are "pioneers of sharing."[71] Since this subtheme focuses on the librarian as an actor, and not the library's position or role, it is separated from the previous subtheme.

[54] Aytac, S. (2019). "Library environment sustainability process index (LESPI)" (p.1).
[55] Smith, B. & Williams, B. (2017). "Sustainability's community of practice".
[56] Xu, H. (2016). "Using library and information technologies and resources to support sustainability projects" (p.1).
[57] Lawton, M. (2020). "Ready for action".
[58] Purnik, A. & Vasileva, E. (2018). "Library as a 'point of grow' in sustainable development society" (p.2).
[59] Goodsett, M. (2020). "Hosting a sustainability speaker series".
[60] Pun, R. et al. (2018). "Campus sustainability and information literacy for first year students" (p. 2).
[61] Landgraf, G. (2015). "Not your garden-variety library".
[62] Kropp, L. (2020). "Enduring, disrupting, and thriving".
[63] Hopkins, A. & Maack, S. (2017). "Sustainability in public libraries".
[64] Sparks, K. (2017). "Strengthening the voice for sustainability".
[65] Lawton, M. (2020). "Ready for action".
[66] Aldrich, R. S. (2017). "Libraries and sustainable thinking".
[67] Lawton, M. (2020). "Ready for action".
[68] Xu, H. (2016). "Using library and information technologies and resources to support sustainability projects" (p. 8)
[69] Fresnido, A. M. B. & Esposo-Betan, S. M. S. (2018). "Going green" (p. 2).
[70] Purnik, A. & Vasileva, E. (2018). "Library as a 'point of grow' in sustainable development society" (p. 2).
[71] Sahavirta, H. (2019). "Set the wheels in motion" (p. 5).

The next subtheme captures instances of librarians discussed as leaders either in their community generally, as examples of sustainable practices more broadly, or to lead a change in attitude. Libraries are "leading the green revolution,"[72] "have a tremendous opportunity to lead the way,"[73] and are an "initiator and leader of environmental education activities."[74]

The fourth subtheme includes discussion of the librarian's role as a supportive one and can be closely related with the previous theme. The language is more distant and describes librarians as mentors, guides, facilitators, and providers. They can "empower" people,[75] "support their growth as part" of a community,[76] while also "creating coworking spaces for collaborative learning and *facilitating* the necessary debate on challenges ahead."[77] They must "lean into [their] roles as *providers* of ongoing education."[78] "Libraries should *inspire*—from the minute you drive up to when you leave."[79]

The final subtheme captures the discussion of the librarian's practical role, such as teaching information literacy,[80] being an information specialist,[81] and performing sustainability.[82] These examples tended to be in ENSULIB's discourse, potentially influenced by IFLA's strong position on the importance of access to information and the SDGs. As ENSULIB's chair writes: "Information work is in the core of librarianship" and "this core function should be emphasized"

[72] Granger, L. (2017). "Leading the green revolution".
[73] Kuni, K. (2020). "What does green mean?"
[74] Purnik, A. & Vasileva, E. (2018). "Library as a 'point of grow' in sustainable development society" (p. 2).
[75] Landgraf, G. (2015). "Not your garden-variety library"; Sparks, K. (2017). "Strengthening the voice of sustainability".
[76] Romero, S. (2020). "Sustainability and academic libraries".
[77] Civallero. (2017). "Degrowth is coming".
[78] Wong, P. (2021). "Solidarity on sustainability".
[79] Granger, L. (2017). "Leading the green revolution".
[80] Pun, R. (2017). "Campus sustainability through information literacy"; Jadefrid, M. et al. (2016). "Searching for sustainability".
[81] Sparks, K. (2017). "Strengthening the voice of sustainability".
[82] Xu, H. (2016). "Using library and information technologies and resources to support sustainability projects"; Qutab, S. et al. (2016). "Environmentally sustainable library buildings".

through "green collections" and "easy access to reliable and up-dated environmental

information."[83]

Examples of action

Authors from both associations discuss examples of how libraries and librarians can act

sustainably. There is a distinction between discussing the green building and operational

practices (e.g., reducing energy usage, recycling, green cleaning products, or LEED certified

buildings),[84] and how librarians can act within their skillset and position. These skills include

developing accessible resources like bibliographies, workshops, or LibGuides, hosting forums,

information literacy,[85] and creating a collaborative space or hub: "the very notion of libraries,

where space and resources are equally accessible to all, puts them clearly and unequivocally at

the heart of sustainability."[86] The ALA authors are significantly more focused on this theme.

However, it is worth noting that IFLA/ENSULIB's annual Green Library Award would add at

least five examples, per year, of libraries and librarians providing sustainable action within the

profession. Additionally, ENSULIB's chairperson speaks to the changes in the award's recent

division in recognition between green library building projects and green librarian initiatives.

While not abundantly present in the conference paper discourse, we can nonetheless expect that

mobilizing knowledge and examples of action are important for IFLA.

Broadened understanding of sustainability

This theme captures my curiosity about the perception of sustainability as predominantly

environmental or to what extent the three-part definition is accepted. In both sets of discourse,

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[83] Sahavirta, H. (2019). "Set the wheels in motion" (p. 7).
[84] Qutab, S. et al. (2016). "Environmentally sustainable library buildings".
[85] Pun, R. (2017). "Campus sustainability through information literacy"; Rockrohr, P. (2019). "Climate change and sustainability"; Brunvand, A. (2017). "Sustainability on the other side of the stacks".
[86] Smith, B. & Williams, B. (2017). "Sustainability's community of practice".

the discussion of a holistic sustainability is present across the times analyzed, with IFLA

discussing it more frequently in the later two years. However, it is worth noting that Rebekkah

Aldrich, who is part of the Task Force and SustainRT, writes the first article for the initiated

sustainability series. ALA's discourse is already influenced by the conversation happening

between ALA and the Task Force. ENSULIB's change in frequency coincides with adjustments

to its Green Library Award to account for broader examples of green librarianship. Aldrich also

makes an appearance later in ENSULIB's discourse.

Partnerships

Authors writing in both *American Libraries* and ENSULIB's conferences discuss

partnership or collaboration with other groups, such as local environmental communities (e.g.,

butterfly, beekeeping, and gardening enthusiasts),[87] stakeholders,[88] or campus offices.[89] Investing

in partnerships is seen as building knowledge bases or enhancing community bonds, and

generally viewed as a useful method.[90] In comparison, ALA tends toward these unique

partnership initiatives (butterfly gardens, beehives, seed gardens) whereas IFLA speaks more

generally about stakeholders and administration.

Community

Half of ALA's authors discuss engaging the community, with some authors making

multiple references. These discussions include the library's interest in helping communities to

thrive, to co-create resiliency, in preparing them for the future with a "focus on developing

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[87] Landgraf, G. (2015). "Not your garden-variety library"; Chance, R. (2019). "File under bee); Udell, E. (2021). "Where monarchs reign".

[88] Romero, S. (2020). "Sustainability and academic libraries"; Sparks, K. (2017). "Strengthening the voice for sustainability"; Fresnido, A. M. B. & Esposo-Betan, S. M. S. (2018). "Going green"; Qutab, S. et al. (2016). "Environmentally sustainable library buildings".

[89] Brungard, A. & Bartek, J. (2020). "Sustaining sustainability"; Avila, S. et al. (2020). "You belong here".

[90] Goodsett, M. (2020). "Hosting a sustainability speaker series"; Kuni, K. (2020). "What does green mean?"; Landgraf, G. (2015). "Not your garden-variety library"; O'Neill, T., Perentesis, S., & Tans, E. (2020). "Paint it green"; Romero, S. (2020). "Sustainability and academic libraries".

resilient communities,"[91] to be community partners, and that "sustainable thinking aligns a library's core values and resources with … the community's right to endure, bounce back from disruption, and thrive."[92] Libraries "strengthen the voice of a community," which takes "determination and courage."[93] The language here is closely aligned with the charged language used to describe the librarian's crucial role. Conversely, IFLA authors rarely discuss community – the most notable instance comes from Aldrich.

Discussion & Analysis

Throughout the discourse analysis, I ask, "how do librarians relate to sustainability? How do they enact sustainability?" The goal is to understand how librarians view their professional obligations with the value of sustainability in both the North American context (ALA) and an international context (IFLA).

Generally, librarians see their profession and institution existing in an advantaged position to assist communities learn about sustainability and see it in action. The librarian's already close relationship with its community and expertise in information literacy are key points. This advantaged position is discussed through elevated and evocative language, even in the governing documents and external messaging. There is a stream of discourse coming from ALA's Task Force that is particularly emphatic about the librarian's role in sustainability, about building a community that can thrive in the face of uncertainty. Generally, the discourse does not justify a "why" for the librarian's involvement, although there are some short statements addressing a "core and urgent concern of society, and consequently of libraries,"[94] a growing

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[91] Aldrich, R. S. (2017). "Libraries and sustainable thinking".
[92] Kropp, L. (2020). "Enduring, disrupting, and thriving" & Aldrich, R. S. (2017). "Libraries and sustainable thinking." I originally grabbed this quotation from Kropp, but that way I have shortened it also fits as a quotation from Aldrich.
[93] Sparks, K. (2017). "Strengthening the voice of sustainability".
[94] Smith, B. & Williams, B. (2017). "Sustainability's community of practice".

"awareness of the importance and urgency to protect the environment,"[95] or that librarians "cannot afford to be passive or neutral."[96] The most straightforward statement addresses a shared fate and implied self-preservation: "libraries are not impervious to these threats and will end up suffering from their effects as much as the rest of the world."[97] Some ENSULIB authors provide context specific to their case: such as increasingly extreme cyclone activity in the Philippines and "the issue of sustainability must be take[n] seriously and with urgency,"[98] and Sweden's already clear directive to promote sustainability education and mindset.[99]

By looking at and comparing the associations' governing documents, external messaging, and professional discourse, we uncover: a) the broad definition of sustainability has an inherent overlap with social responsibility; b) an elevated language that glorifies the librarian's role in leading the community toward resilient sustainability; c) there is a lack of critique on how the librarian is part of unsustainable practices. These aspects are then reflected on through the theoretical framework.

Broad Definition and Social Responsibility Overlap

Both associations have a broad understanding of sustainability: environmental, social, and economical. IFLA's overall perspective is tightly woven with the SDGs as seen in IFLA's governing board minutes and external messaging specifically with frequent references to the SDGs, the Development and Access to Information report, and the Library Map of the World. ENSULIB references the SDGs with less frequency and weight, but recognizes the holistic sustainability nonetheless, especially in later documents. Similarly, ALA's core value of

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[95] Hoerning, B. (2019). "Going to a library conference for talking about ecological sustainability – but what's about our own carbon footprint?".

[96] Aldrich, R. S., (2017). "Libraries and sustainable thinking".

[97] Civallero, E. (2017). "Degrowth is coming".

[98] Fresnido, A. M. B. & Esposo-Betan, S. M. S. (2018). "Going green" (p. 7)

[99] Jadefrid, M. et al. (2016). "Searching for sustainability – A blended course in how to search interdisciplinary".

sustainability includes the three-part definition as provided by the Task Force, and is committed to by their recent president as one of her key focus areas.

There is a strong connection between sustainability and social responsibility. By sustainability's "triple bottom line" definition, it is included in "socially equitable" practices. Additionally, the Social Responsibility Round Table started the Task Force on the Environment's, eventually becoming SustainRT. Indeed, the 2015 "Resolution on the Importance of Sustainable Libraries" begins its arguments by recognizing "our communities are faced with economic, environmental, and societal changes that are of great concern to our quality of life," firmly beginning from a point of social responsibility. In one of its first reports, the Task Force situates the ALA as something through which others are "pulling in the same direction using library service as a platform *to do good in the world.*"[100] By helping a community with its "right to endure," and building resilience, the sustainable librarian is also enacting a social responsibility, cultivating a healthy social environment (Aldrich, 2018). Correspondingly, social responsibility as a Core Value means contributing to "ameliorating or solving the critical problems of society" (ALA, 2019a). In the case of IFLA, this overlap is more apparent because the association so closely aligns itself with the SDGs, which are arguably more in line with a social responsibility ethos than an environmental one. Additionally, one ENSULIB conference paper compares social responsibility with environmental advocacy: "libraries, being flagships for socially responsible practices, are called to actively take part in environmental issues." They reference IFLA's 2002 "Statement on Libraries and Sustainable Development,"[101] in which IFLA "declares that all human beings have the fundamental right to an environment adequate for

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[100] Aldrich, R. S. & Tanner, R. (2018 June 15). "Sustainability task force report" (p. 2). Emphasis added.
[101] Fresnido, A. M. B. & Esposo-Betan, S. M. S. (2018). "Going green" (p. 2).

their health and well-being" and acknowledges the role of the librarian in providing access to information toward this fundamental right.[102]

There is clearly the same non-neutrality perspective: "in today's world, libraries cannot afford to be passive or neutral."[103] SustainRT exemplifies this in their post-inauguration call to action for librarians to contact their political representatives about climate change related policy. Additionally, fostering resilient communities strikes a familiar chord with ethics of justice and care, prioritizing equitable service, through affective librarian labour (Fox & Olson, 2012; Higgins, 2017).

Glorification Through Elevated Language

As pointed to throughout this chapter, Aldrich is an influential voice that appears repeatedly in the ALA context, as well as in ENSULIB's conferences, and in the three categories of discourse. She is the co-founder of the New York Library Association's Sustainable Libraries Initiative, which instills library management with sustainable thinking. The program is closely related with Aldrich's book, *Sustainable Thinking: Ensuring Your Library's Future in an Uncertain World*, published by ALA (2018).[104] Aldrich is also a member of the Task Force and SustainRT, and frequently publishes sustainability themed columns in *Library Journal*. Her style of discourse is inspirational, evocative, and mobilizing, which is the type of elevated language that creates "vocational awe": a developed mindset that imbues librarianship with a sacredness and superiority that goes beyond typical professionalism (Chiu et al., 2021; Ettarh, 2018). The way her voice flows through the discourses, unifies our sense of sustainability and the librarian's

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[102] See: Statement on Libraries and Sustainable Development (August 2002).
https://www.ifla.org/publications/statement-on-libraries-and-sustainable-development-august-2002/
[103] Aldrich, R. S. (2017). "Libraries and sustainable thinking".
[104] This book is referenced in the Task Force's final report to the ALA as a guide to a sustainable conceptual framework. See Aldrich, Rebekkah S. & Tanner, R. (2019 January 16). "ALA special task force on sustainability report" (p. 1).

corresponding role, and is indicative of developing "organizational fictions." These organizational fictions are produced through vocational awe and through a tenacious repetition that turns myth to truth (Chiu et al., 2021).

Both associations show reverence toward the profession's role in promoting sustainability and fostering healthy communities. The tone is particularly present in describing the librarian's positionality and role, but also bleeds over into other themes. Repetitive use of this language creates an image of the librarian: a uniquely positioned and crucial catalyst at the centre of a community, pulling in partners and stakeholders, to empower and foster change – sometimes with global ambition.

When authors point to their 'unique position' to 'empower the public,' to 'take the lead,' or to be in some way responsible for the community's 'right to endure,' they become a savior-like figure through vocational awe. They sacrifice their backs to hold the weight of their communities' future and survival. As mentioned, vocational awe helps create organizational fictions that imbue the profession with axiomatic dogma (Chiu et al., 2021). Certainly, the ALA president's statements about the sustainable librarian are worth considering in this light, especially when we consider who she is speaking to when writing in the *American Libraries* magazine – "the voice of the profession."[105] She says, "Librarians' core values include a commitment to social responsibility, sustainability, and equity. It's *not just essential* we step up at this crucial juncture – *it's our job*." Continuing, "libraries have *important roles* to play in preparing our communities for the impact of climate change…" and "they are "*perfectly positioned* to help cocreate community resilience, both by modeling good choices and convening events."[106] Patricia Wong reinforces the elevated language describing the librarian's position and

[105] American Library Association. (n.d.). "About".
[106] Wong, P. (2021). "Solidarity on sustainability." Emphasis added.

role, while anchoring this *essential* work as part of *the job* and the profession's core values. While the profession, on one level, is in charge of providing access to a building with quality resources – which is rather functional, trained, and material – this other level mobilizes a great deal of affective labour through responsibilities to *cocreate community resilience to face climate devastation*.

Aldrich's voice shows that these organizational fictions do not need to start from the top, as with the president's message. While it is not proven that all uses of elevated language are linked to Aldrich's influence, despite suspicions, it is true that the professional level discourse is well on its way to solidifying some organizational fictions about the librarian's unique and essential duty to combat the effects of climate change and inspire resilient communities.

A Lack of Critique

Vocational awe has the effect of shielding an institution from critique (Chiu et al., 2021; Ettarh, 2018). The discourse from both associations lacks criticism of the library's practices or position, instead focusing on the librarian's unique and vital role to do something. As has been discussed at length in the literature review and here, examples range from reducing the carbon footprint through greener operation, to leveraging informational resources and community partnerships for educational campaigns or projects. Edgardo Civallero (2017) is the lone critical voice in the *American Libraries* sample, calling for a degrowth mindset, although the proposed solutions mimic the same greener operational practices frequently suggested – just in a less reverent tone. However, in a separate publication, Civallero and Sara Plaza call out sustainability librarians for their optimistic rhetoric, further criticizing "sustainability" as maintaining the "capitalist, consumerist, mercantilist, extractive, aggressive, exploitative panorama" when a new

paradigm is needed (2017, p. 35). The authors' divergent tone is remarkable, as if *American Libraries* is not a space that enables criticism.

This thesis is particularly interested in the profession's relationship with the tech industry which, by chance, Aldrich uses as an example of unsustainable business models. Tech's profit comes "at the expense of the environment by harvesting raw materials until there is a scarcity of those materials and by polluting waterways in the vicinity," which calls into question "our ability as a society to 'afford' its product" (2018, p. 66). But what of the librarian's willingness to afford? There is no self-reflection or opening outward to consider the significant entanglement the librarian faces with the ICT industry, and its unsustainable and problematic practices, even if the entanglement is necessary to meet the needs of a changing society.

The librarian is at odds. Both ALA and IFLA include in their codes of ethics a dedication to the "highest level of service to all library users" (American Library Association, 2021d), or the "highest standards of service quality" (International Federation of Library Associations and Institutions, 2012, p. 5), which can foster vocational awe and strain librarians to meet ever expanding capitalist demands (Chiu et al., 2021); it is also an ethos that pushes librarians to maintain up-to-date technology and a revolving door (out with the old, in with the new), despite recognition of the intentional obsolescence tactics and exploitation of land and labour silently attached to the sleek machines.

Through the Framework

The theoretical framework combines assemblages, slow violence, and the implicated subject to map the connections between extraction and manufacture, on one side, to the library's purchasing and disposing of electronics on the other. Through this study, we see the librarians-as-sustainability-catalyst situating themselves as information specialist, educator, convener, and

role model. Although I find some librarians discussing the environmental and social problems of ICT in the literature review of the previous chapter, these concerns did not re-appear in any level of the governing, external, or professional discourse. The neglect could be due to the clean image of ICT and our love of and dependence on the technologies; we may also read it as the librarian's tendency to fall back on an innocence, where attention withdraws from structural shortcomings (Popowich, 2019a, p. 297). The implicated subject must open outward and beyond its "defensive purity of self-contained identities" and "unacknowledged capacity to wound" (Rothberg, 2019, p. 201). Being a little schizophrenic, saying, "I am the great equalizer of information access inequality, *and* a fundamental role model in sustainability, *and* the force uniting community, their cultivator of resilience *and* part of a deeply unsustainable and problematic industry." While the sustainability value shows some opening outward by recognizing responsibility, the librarian is still speaking from a rather closed position with little discussion of the ways the library and librarian is coproducing the problems they face.

Immanence. As mentioned in the framework, the concept of building from within is important to Deleuze and Guattari's philosophy. The desiring-machine creates its own body through a "purely positive" self-production (2009, pp. 8–15), building from a middle and spilling outward, output becoming input. Within the ALA, we see the immanent production at work in the acceptance of social responsibility and sustainability. Both are championed by a smaller group of librarians that personally believe in the values and push to have them added as values of librarianship. Eventually, we see the ALA president adopt the same tone and intention. We see that action through an individual (or collection of individuals united by intention) can change the milieu from which the ALA is constituted. This development, as mentioned earlier, is comparable to the ways the SRRT developed the conversation around social responsibility and

the subsequent shift in ALA perspective and codification. However, there is no pushback that suggests this environmental responsibility is outside of the library's core responsibilities. Instead, the discourse is congratulatory of the librarian's pivotal position directing climate change activity within the community and leading the way to its resiliency. The triumphant tone threatens to assume the librarian need only fall back on the inherent aspects of librarianship, but perhaps with more gusto, in order to meet the sustainability goal.

Librarian Subjectivity. Without pushback, and with rather eager acceptance, the profession reaches a new crystallized moment with the sustainability value, forming a different librarian intensity through which the subject-being-librarian moves. Both the ALA and IFLA acknowledge and absorb its relevance to librarianship, codifying it from the top. At the same time, a dominant sustainable librarian discourse flows through *American Libraries*, the profession's voice, further unifying what a sustainable librarian does and looks like without significant criticism. While institutions codify the librarian intensity as a whole, they likewise participate in the codification of the constitutive librarian intensities: the socially responsible librarian, the sustainable librarian, or the neutral librarian. I see two potential courses: the subject-being-librarian follows the teleology that the structure of the profession is already enough to enact sustainability, turning inward to the profession's cozy identity; or, the subject-being-librarian turns outward. In one step, embracing the schizophrenic process to handle, in whatever manner, the conflicting intensities, and in another step, making connections with the community, pushing the library and librarian into a new arrangement particular to the community, connections, and problems they propose to solve.

Acting otherwise. Viewing the library as an assemblage from its middle opens it to creative power and agency since it can make connections in multiple and indeterminate ways: it

is not fixed onto a linear path. The idea of reflective praxis discussed in this chapter's introduction is supposed to dislodge the librarian from teleological thinking, and although my examination shows some pre-emptive admiration of the sustainable library and librarian, there are examples of acting otherwise through collaboration with outside groups: lines of flights, departures from an assemblage, flirting with "the plane that sets it free" (Deleuze & Guattari, 1987, p. 161). Seed libraries are a strong example of such opening outward. The library and gardening enthusiast partnerships develop a collection of seeds, rather than books, that can be 'checked out' by patrons. By encouraging, but not requiring, replenishing the collection by harvesting seeds, we depart from the usual borrowing system. Informative material may accompany the project, but librarians are encouraging a different type of knowledge. Another departure takes us from a teleological exaltation of the book, where "…what began as a good story became the only story about libraries and librarianship" (Chiu et al., 2021, p. 55). Additionally, the librarian's stewardship is refigured caring for heirloom varieties of seeds, rather than the (written) human record. Indeed, a slightly more radical take might suggest these seed libraries are also encouraging food sovereignty, another departure from the status quo.

Seed libraries are an alternate mode of librarianship with its own intention askew from both ALA's and IFLA's prioritization of access to information. It is clear in the discourse that librarians are not solely interested in being gatekeepers or distributors of information, but also leaders, partners, and role models for their communities. To foster a resilient community necessitates the use of ICT because, in fundamental ways, ICT leads to and equalizes information access while digital literacy affects many aspects of life. If the profession's values are supposed to offer guidance in changing times, where does the sustainability value take us from here, regarding ICT and our growing awareness of its problematic and unsustainable

industry? How can the librarian open outward and act otherwise in their relationship with ICTs, as they do with seed libraries or butterfly gardens?

Conclusion

Sustainability is a relatively new Core Value for the ALA, with a longer history in both associations and strong ties to social responsibility. This study examines the discussion of sustainability, in both associations and at varying levels of discourse, to reflect on how the value can guide decisions in ameliorative action regarding ICT in the library. The sustainability discourse explicitly embraces non-neutrality which invites into the librarian intensity the same contradiction seen in social responsibility versus neutrality. However, sustainability receives less push-back. Perhaps this is because the philosophy of librarianship is inherently sustainable in the way it pools and shares resources, while attempting to create equitable access in its community. But in addition to this philosophy, we see the sustainability discourse glorifying the profession for their central position and critical role in the community which implies a conclusiveness to the matter. However, this sustainable-librarian-subject is not wholly excused from criticism.

While, at the end of the literature review, I suggest a study of the librarian's social responsibility can be turned to critically reflect on the social impacts of ICT on the community, my main curiosity is about how social responsibility relates to the ICT industry was through the labour practices within the industry and people's lived experience next to the extractive arm of the industry. This curiosity informs my questions about the librarian's implication in these social and environmental harms, guided by the concept of the implicated subject being neither perpetrator nor victim, but nonetheless involved in the violence. This perspective is just one facet of social responsibility; it asks us to recognize the precarious life of others, and to hear the "unbidden, unexpected, and unplanned" voice, from elsewhere, that imposes on our morals

(Butler, 2004, p. 130). This facet asks how we can lessen our impact, and our guilt, through the sustainable librarian intensity and its potential connections. An important part of this will require reflecting on the "constant capitalist pressure to expand and increase" their services in order to achieve the high service aspirations imbued into the professional ethos by both ALA and IFLA (Chiu et al., 2021, p. 58).

This chapter explores the sustainable librarian subjectivity, found to be inward turned when it comes to unsustainable ICT; the next chapter focuses on how the library and librarian boundaries fade along the interjection of ICT. Case studies of academic and public libraries delve more deeply into the ways the library and ICT meet, which includes the importance of digital scholarship, meeting the needs of student and patron, and engagement with the library space. In the public library especially, an emphasis on technological innovation and digital media has the library opening to increasing flows of ICT. Finally, the chapter compares the three manufacturers found in the libraries, and how the manufacturer's discuss sustainability within their organization's operations.

Chapter 4: Connection and Dissipation

The structure of the sustainability librarian intensity is codified from above, by both ALA and IFLA, at the same time it is structured from below through a prominent discourse within the profession. The intensity absorbs the holistic sustainability definition: environmentally sound, economically feasible, and socially equitable, and understands itself in a unique position to encourage and catalyze sustainable community development. The intensity offers two broad ways of acting: a) reducing the carbon footprint of the building, its construction, and the library's daily operations, and b) through librarian-specific initiatives and partnerships that raise awareness about sustainability, provide access to quality information, and inspire the community. However, the sustainability librarian intensity is closed off from acknowledging the librarian's implication in harmful systems – especially regarding the environmental and labour problems of ICT.

The blind spot is not surprising considering the way digital technology tends to become invisible, producing networks of activity we struggle to grasp in one gaze. The computer, as a physical thing, is easy enough to point out. But it is at its best when it is connected – to other computers, servers, databases, and to us. As philosophers of technology and media theorists have both recognized, the form is often eclipsed by the content. In other words, as I am typing this thesis, I am engaging with the ethereal digital media rather than overtly acknowledging the materiality of the machine. The machine fades from sight. The more accustomed I become to the machine, the less I notice it. When I use my hand to move the mouse to control the cursor to move lines on this page, I barely recognise my physical connection to the computer.

With my face to the screen and my hands on the keyboard, the interior/exterior barrier degrades. Within my mind's strata is a flow that directs my hand's movement across the

keyboard – an understanding of how to type; within the computer's strata is the organization of the QWERTY keyboard, but that organization means nothing to the computer – it is for me; the same can be said for the graphical user interface, which organizes its processes and bytes into something that meaningfully connects with my strata (mind and body). The interface, whether keyboard, screen, or mouse, translates for both myself and the computer; it is a thin barrier that is also co-created by both side's strata. And it is fluid, changing to meet new connections (e.g., virtual and augmented reality, or wearable tech).

In this chapter I am picking back up the threads laid down in the "connecting the library and ICT assemblages" and "the slow violence of tech's industry" sections of my theoretical framework, which is to draw a line through the librarian intensity and the slow violence of the ICT industry, while looking for the librarian intensity to open outward through its implication. In the first part of the chapter, I ground the discussion in observable and unobservable activity that happens between patrons, staff, and ICT in public and academic libraries. I look for ways the ICT assemblage weaves through the space and organizes the library and librarian's relations to resources, people, space, and infrastructure. I revisit the breakdown of the entity's interior/exterior divide from its milieu, where we begin to see the library and librarian disappear. Addressing immaterial labour and the invisible quality of tech, and its infrastructure, add to this disappearance. Little evidence is found at the overlap of sustainability and ICT, and while I do address both library's acceptance of the broad definition of sustainability, the observations and my analysis focus on assemblages.

In the second part of the chapter, I study the sustainability reports and third-party ratings of Apple, Dell, and Lenovo as suggested for the ethical librarian's consumption of ICT (Poggiali, 2016; Zazzau, 2006). These reports and ratings are informative of the ICT industry's practices,

while, through my theoretical framework, I read them critically as tools for silencing the slow violence against land and people.

Method

Through a mix of qualitative methods, I investigate two libraries from the Edmonton Public Library (EPL) and two from the University of Alberta's Libraries (UAL) with observational site visits (see Table 1 and 2 in Chapter 2 for a breakdown of these site visits). Additional information is gathered from the libraries' websites, news, and miscellaneous external sources (see Appendix B for a list; footnotes relating to the libraries refer to this appendix).

Each library is visited twice over two weeks for a length of time between one hour and two and a half hours. The two EPL branches visited are Stanley Milner and Clareview. The first is selected because it recently finished its renovations in 2020 and clearly aims to be a state-of-the-art library with many ICT integrations. The Milner library is also a recent recipient of IFLA's Green Library Award for its green architectural design. Clareview is selected as a smaller Edmonton branch that is part of a Community Recreation Centre, which includes a gym, a swimming pool, hockey rink, basketball courts, tennis courts, children's indoor playground, childminding, YMCA daycare, and multipurpose rooms. The library and recreation centre were completed in 2014 – older than Milner, but still a recent example of library planning. For the academic libraries, Cameron Sciences, Engineering, and Business Library and Rutherford Humanities, Social Sciences, and Education Library are selected. These are the two major libraries on the North Campus that see the most traffic from students.

A variety of peripheral sources are included in the dataset. The portfolio of Teeple Architects, who designed both EPL libraries, interviews, and award recognition pieces all discuss the builds and intentionality of design. With Milner's re-opening coinciding with Covid-19

safety measures, there are tour-like videos online discussing these new spaces. EPL also provides plenty of textual information online about the spaces, how they are equipped, and intentions for the space. The Milner branch is covered in the news and often includes the broader EPL goals and values. The UAL libraries receive less fanfare, but plenty of information is gleaned from the UAL website, as well as other departments of the institution such as the Sustainability Council and Information Services and Technology (IST). Outside of the university, I review Sustainability Tracking, Assessment & Rating System (STARS), a framework for universities and colleges to self-report on their sustainability accomplishments, and with which the University of Alberta has received Gold standing (second to Platinum). Following Vivien-Elizabeth Zazzau's (2006) proposal for librarians to enact an ethical consumption of ICT, I also examine Apple, Dell, and Lenovo sustainability reports and supporting documents relating to sustainability and supply chains (see Appendix C for a list of these documents; footnotes related to the manufacturer's refer to this appendix).

Field notes were recorded and partially reflected on during my observations. I reflected on and analyzed my field notes after each round of visits and after investigating the outside sources. My questions during these reflections are: a) In what ways is ICT part of the library assemblage? b) What does this look like through a sustainability lens? c) How does it relate to roles and experiences?

Results

The results are broken down into these four categories:

1. the broad definition of sustainability in both the public and academic libraries,

2. the connection of ICT with the public library,

3. the connection of ICT with the academic library,

4. and the effect of ICT regarding the librarian and the library's walls.

The final section of the results addresses ICT acquisition and disposal policies and the comparison between manufacturer's sustainability reports.

Broad Sustainability in the Libraries

Edmonton Public Library. These observations are primarily from peripheral sources. EPL has committed to a partnership with the City of Edmonton to construct LEED certified buildings.[107] EPL lists seven certified standalone buildings, although there are two more libraries within LEED certified recreation centres. Of the two studied here, Milner falls into the former and Clareview into the latter. New to EPL's 2022-2023 business plan is getting their facilities onto renewable energy sources and participating in Edmonton's Corporate Climate Leaders Program, which aims to get local businesses moving toward a greener economy via greenhouse gas reduction plans.[108] In a similar partnership with the city, EPL has also naturalized one of its branch's landscapes, reducing maintenance with pesticides, reducing noise, increasing carbon sinkage, and generally creating a more resilient landscape.[109] The second category is harder to track since the library's programs come and go and may not have been reported on by a third party during the time. However, EPL has a curated guide for environmental awareness as part of a city improvement event, which includes: home energy usage testing kit, green home guides, gardening and compost resources, and environmental projects to do with children.[110] Another guide brings together a variety of books on theory, ethics, urban development, and memoirs as

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[107] Edmonton Public Library. (2022). Building projects.
[108] Edmonton Public Library. (2022). Business plan 2022-2023.
[109] Edmonton Public Library. (n.d.). Naturalization at Mill Woods.
[110] Edmonton Public Library. (n.d.). EPL great stuff #3SkillsYEG: Go green!

they relate to sustainability and environmentalism.[111] Recently, EPL has also started a Seed Library, joining many others in the trend.[112]

In the flow of social equitability, EPL removed fines on late returns in 2020 in a step that recognizes the precarious financial situation of some community members and follows through with the commitment to keeping the library accessible to all.[113] Indeed, CEO Pilar Martinez comments on the "unfair burden" libraries have carried regarding the transient population and those with mental health disorders, particularly in consideration of the Covid-19 pandemic.[114] Martinez comments on EPL's plans to reopen library services to those in need of access to the Internet: those experiencing homelessness, vulnerable populations, refugees, and newcomers to Edmonton.[115] With the Milner branch being located in the downtown's core, it especially faces this challenge and was designed to have additional space for outreach partnerships.[116] These offices are on the second floor; a space ingrained within Milner so well that I overlooked it during my visits. This need is evident in site visit notes as I tallied eight people appearing to live with homelessness during my second visit; they were using the space for a variety of purposes, including simply existing in a warm and comfortable place. There is a delicate balance, as well; I noted three instances of people being removed from property by security. Indeed, the presence of security alone is telling of Milner's particular needs, as well as their rounds of wellness checks into bathrooms.

Clareview Branch. A holistic philosophy is clearly at play within these spaces. The Clareview branch is within a recreation centre that hosts all types of sports; it sits next to an LRT

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[111] Edmonton Public Library. (n.d.). Sustainability and environmentalism.
[112] Edmonton Public Library. (n.d.). Seeds library pilot program.
[113] Edmonton Public Library. (2022, June 11). Edmonton Public Library eliminates late fees.
[114] Faulder, L. (2020 June 16). Pilar Martinez on the future of the Edmonton Public Library after COVID-19.
[115] Ibid.
[116] Edmonton Public Library. (n.d). Outreach services; Faulder, L. (2020 June 16).

station, beside massive greenspace with an outdoor kid's jungle gym, and a skatepark out front with outdoor basketball nets. When you enter the library, you can immediately see down into the swimming pool through large windows. Moving further back into the library, you can look up into the gym. Two (or maybe three) story windows wrap around the far area, granting ample natural light, as well as giving a view out to the fields and kid's play space. I noted that it felt like I was being invited or encouraged to join these recreational activities. Indeed, the "collision" of all these spaces is the intention behind the design,[117] and considered "paramount to the users' experience of community" achieved in part by the visual and sonal connections granted by open space and liberal use of windows.[118]

Milner Branch. The Milner building is likewise designed with grand open spaces; from the top third floor you can view down into the basement. Teeple Architects describe the building as "an innovative and welcoming civic hub," with the windows and protruding angles intended to stretch and open to nearby city features, inviting in the community.[119] In addition to the outreach offices on the second floor, there is also a large and fully equipped teaching kitchen – during my visit they were advertising a sustainable kitchen. Next to it are rows of comfortable window seating that overlook the downtown streets. Massive pieces of artwork hang on the walls, and on the main floor there is a gallery for local artists to display their work, paying homage to the branch's existence in the centre of the city's art district,[120] along with a free-to-use piano. Additionally, the main floor includes the Thunderbird House, a space designed in consultation with and dedicated to local Indigenous philosophy, including accommodations for

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[117] Mirabelli, J. (2019 September 29). "Teeple Architects celebrates 30 years".
[118] Teeple Architects. (2014). "Clareview Community Recreation Centre & branch library.
[119] Teeple Architects. (2020). "Stanley A. Milner Library renewal".
[120] Edmonton Public Library. (n.d). Capital city art.

ceremony with smudging ventilation.[121] In these ways, the building itself brings together many facets of social life.

Digital Technology at Edmonton Public Library. To think more particularly about how ICT and sustainability meet in the library space, we return to the library and librarian's role in fulfilling digital needs. At Milner, a librarian helps an older patron find appropriate rental properties through online listings, explaining filters. Another librarian teaches someone how to use email in fundamental ways. People who appear to be unhoused check their Facebook, email, or search the Internet – keeping in touch with their social circles. A young, well-dressed patron carries a manilla envelope and gets help printing documents, perhaps on their way to handing out resumes. In another flow, patrons watch videos, play casual games, or even gamble online. At Clareview, two older patrons crowd a computer to work together through an impressive stack of papers. Young teens also gather around a computer to enjoy a brief interlude between school and home. Another browses through insurance coverage while making phone calls. In these varied examples, ICT, libraries and librarians, and the many spheres of a patron's life collide (in Teeple Architects terms), or flow together (in Assemblage terms). In my observations, the desktops are popular resources; usage is limited to hour-long intervals automatically, although patrons can choose to extend that or librarians can from their stations. In addition to privacy and security, automated signing out reduces energy usage with the computer and monitor going to sleep between uses.

University of Alberta Libraries. The Cameron Library has a BOMA BEST silver rating,[122] but because the university libraries exist as part of the larger research institution, their autonomy in achieving this standard and in pursuing some sustainability initiatives is constrained

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[121] Riddle, E. (2021 July 16). Welcome to PÎYÊSÎW WÂSKÂHIKAN.
[122] University of Alberta. (2021 February). Ualberta green building dashboard.

by broader institutional policies (e.g., building design, sourcing and disposing ICT, energy usage, waste management). The University of Alberta (UofA) has a gold rating with Sustainability Tracking, Assessment & Rating System, a framework for universities and colleges to self-report on their environmental sustainability accomplishments. But to what degree does UAL share those accolades when no mention is made of UAL in the reports? Indeed, moving into the second category, Times Higher Education ranks the UofA as eleventh in a global survey on higher education institution's commitment to the United Nations' Sustainable Development Goals (SDGs), understood through the holistic interpretation of sustainability.[123] There is a clear commitment to sustainability initiatives and operation on campus; the institution's Sustainability Council attests to this just in its existence. The Council acts as a hub for students and faculty who hold sustainability as core to their teaching, learning, and research. They bring in speakers, hold events and training, and showcase the UofA's measurable commitments to the SDGs. Again, no clear link is made between the library and the Sustainability Council website; their sole appearance in the dashboard is for Goal 4: Quality Education, which seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." Here, the library's availability to the public is highlighted, for both digital content (via campus computers or the guest WiFi) and the physical collection (via a free library card). Recognizing my bias toward libraries, I expected to see a stronger presence of UAL in these goals. Perhaps through such initiatives as: the "food for fines" program that helps stock the campus' food bank (Goal 2: Zero Hunger); the recurring Unwind your Mind events that take place in libraries, availability of light therapy lamps for checkout, and the "dogs in the library" program which all address mental-health care (Goal 3: Good Health and Well-Being); the multi-year laptop lending program

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[123] Epp, K. H. (2022 April 27). "U of A ranked 11th in global list of top universities making an impact on sustainability".

removed barriers for students unable to afford a laptop, as does general access to desktops. Additionally, the library assists professor's follow-through with the Zero Textbook Cost program (Goal 10: Reduced Inequalities); and finally, through the library's participation in cultural celebrations such as recurring blog posts to highlight holidays and traditions from the broad range of cultures of students on campus and participating in the campus' Pride week (Goal 11: Sustainable Cities and Communities). UAL's mission and value priorities include supporting the diverse community: "as a strategic priority we build spaces, collections, and services that value and support our diverse community".[124] Perhaps these are small, subtle contributions to the SDGs, but through these initiatives, we see that the university library is doing more to foster education than providing resources and an Internet connection (although also important contributions toward equitability); the library contributes to a sustainable campus community through promoting diversity, mental and physical health, and as we will discuss in more detail, maintaining a space for students to gather and study.

ICT and The Public

The Innovative Library. In EPL's business plan for 2022-2023, four goals define the library's aspirations: "the best place to" learn, create, be, and work.[125] It is likely not surprising that in these goals, vision, and mission, there is no mention of books. Their vision is for EPL to be a "gathering place for people and ideas, enabling a lifetime of learning, engagement and possibility for every Edmontonian."[126] Their mission is to share "expertise, information, technology, and space with Edmontonians for learning, connecting, creating, discovering, enjoying and enriching communities."[127] Mentions of early literacy goals in the library plan are

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[124] University of Alberta Library. (n.d.). Vision.
[125] Edmonton Public Library. (2022). Business plan 2022-2023.
[126] Edmonton Public Library. (2022). Business plan 2022-2023 (p. 6).
[127] Ibid.

followed by digital literacy. We see in these focus areas that the librarian is a mediary between the expansive realm of ICT and the patron.

EPL's value for innovation likewise positions them in a game of chase: "We are progressive and original. We experiment and we create. We push the boundaries of the modern library. We try new things out and create new services to spur imagination and inspire learning."[128] This innovative spirit recently granted EPL the prestige of being the first library to own a novel published as a Non-Fungible Token (NFT).[129] An NFT is a unique, or limited, digital asset that corresponds with a real-world item (typically various types of artworks). It uses blockchain technology to track ownership, and authenticity. NFTs are manufactured scarcity in the digital world and align with collectables. EPL's executive director of customer experience (Tina Thomas) calls it an "incredible opportunity … to once again be a library leader in embracing new technology" and speaks to the excitement of being "part of this extraordinary story," "to be on the edge of new technology."[130]

Digital Technology in the Library. Perhaps EPL's largest point of pride at the moment is The Wall in the Milner branch – a massive digital display with touch screens along the bottom for interactive elements. The Wall is double sided with 260 LED screens and 18 touch screens animating the prominent side, with seven touch screens on the back. The Wall requires 12 computers between both sides.[131] It is an impressive display that encourages adults and children alike to spend a moment. Curved seats face inward and step stools are ready to boost users to engage with the screens. In one visit I counted nine families and children enjoying the wall, and

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[128] Edmonton Public Library. (n.d.). Vision, mission & values.
[129] Edmonton Public Library. (2022 March 22). World's first book published as a Non-Fungible Token (NFT) available to borrow exclusively at the Edmonton Public Library.
[130] Ibid.
[131] Edmonton Public Library. (n.d.). Digital exhibits.

four unaccompanied adults pausing in the space. During one family's interaction, the child was startled by a graphic on the screen – a shark charging forward and smashing the 'glass,' leaving a crack. The parent began recording with a cellphone to capture that moment, but each successive interaction with the charging shark was only an echo of the first that we witnessed in real time together – the child's mixed terror and joy sounding less sincere in each repetition. The parent commiserated with another about wishing they had recorded the first reaction with their phone. A few moments later, another adult began recording the space with their cell phone, starting at The Wall. They had a wide smile on their face that I associated with wonder. EPL aims to "spur imagination and inspire learning" through their innovation, and The Wall seems to be a successful manifestation of this intent. The question is for how long will The Wall be cutting edge and effectively evoke wonder. How long before interactions follow the same pattern as the child and the shark: fading echoes of excitement? And what new technology will replace it to reignite inspiration?

Also on the first floor is the children's makerspace. It has the words "imagination room" decaled inside and contains two consoles, four iPads, an iMac, and a 3D printing machine among its technology. Outside of these technologies, the room contains Lego kits. The sole activity I noted in the space was two children playing Mario Kart.

The Gamerspace is tucked away on the second floor of Milner and has ten Dell Alienware gaming PCs with curved monitors, three of the latest consoles, and three retro-style arcade boxes. Counting both visits, I saw 14 patrons using the space, and was tipped off by a librarian that I should book a time if I was interested in playing anything because spots fill up fast. While observing the area, an adult and child walked out of the room, and moments after, an

older teenager or young adult stepped out and called down after them, offering to give up their time for the child if they wanted to play a bit more.

ICT and Digital Scholarship

Scholarship increasingly relies on digital tools and infrastructure to do the work: datasets (and their preservation), qualitative coding software, reference managers, and the cloud to name a few. The same digital affordance appears in dissemination as well: ebooks and online journals for one thing, but also academic or personal blogs, producing specialized websites, or small digital archives. Additionally, personal and professional networks are formed on Twitter, keeping a finger to the discipline's pulse, but which may also double for one's own research dissemination. All this, to say, ICT is integral to today's scholarship – whether 'traditional' or digital – and to the academic library so it may assist researchers and students, and more pessimistically, stay relevant in today's neoliberal post-secondary education (Levesque, 2020, p. 9). For example, Canada's three research funding agencies require data archiving for research supported by their grants,[132] and the library is recommended as one avenue for assistance in preparing a data preservation plan.[133] Included in UAL's thirteen projects is a data management planner; eleven of the other projects are also closely tied to the digital.[134]

ICT and the library come together in these digital projects to contribute to a culture of sustainability in two broad ways: The first is the long-term preservation of works which is often achieved by partnerships with other universities or the Internet Archive. For example, UAL is maintaining a collection of web captures regarding Alberta's curriculum development. The second is by hosting repositories for researcher's data (e.g., ERA, Aviary, and Dataverse). Both

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[132] Government of Canada. (2021). Tri-Agency research data management policy.
[133] Government of Canada & Social Sciences and Humanities Research Council. (2016). Research data archiving policy.
[134] University of Alberta Library. (n.d.). Projects.

of these types of projects foster sustainability by improving access to physical works that are sometimes special and/or rare and fall under the University of Alberta's purview. Dataverse, the repository for researcher's data, encourages research to be shared and pooled together for additional use – perhaps in ways unintended by the primary researcher.[135] In another flow, UAL is investigating digital archaeology to save content from dying media and its soon-to-be (or already) inaccessible containers (e.g., the floppy disk).[136]

ICT and the library come together in Digital Initiatives and the Digital Scholarship Centre (DSC), both located on the second floor of Cameron Library. Both exist within the library's administration, although Digital Initiatives is a closed-door library project space and the DSC is open for all researchers and students. The DSC is not a traditional academic library with specialization in subjects like humanities or engineering, with subject librarians and specialized resources to match; the DSC specializes in niche software and hardware, creating space for collaboration, presentation, and creative exploration.[137] The DSC's resources are such technologies as Virtual Reality hardware and software, 3D printing, laser cutter, recording hardware and software (in a soundproof booth), high performance PCs with software for graphics and design, media production, and data analysis – which are also accessible remotely.[138] The DSC pairs access with knowledge, providing workshops to begin learning some of these tools and methodologies, as well as having knowledgeable staff on site.

Portable devices and the ethereal infrastructure of ICT and libraries. During my observations, students were nearly always on laptops or tablets when not using desktops. I counted three not using technology (of those that were awake), although two of these counts also

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[135] Scholars Portal. (n.d.). Scholars Portal Dataverse.
[136] University of Alberta Library. (n.d.). Projects.
[137] Digital Scholarship Centre. (n.d.). Services overview.
[138] Digital Scholarship Centre. (n.d.). Technology.

had their cell phones out while working (two were sketching). In Rutherford, I noted seven instances of physical books being handled as I was sitting by the service desk and self-check out machines. A common activity was students working individually at their devices, sometimes using two devices at once (thirty-nine instances). I noted a variety of activities on the screens, from videos (movies or seminars), to working documents, to articles. I cannot say exactly how (or if) students were using their devices to access library resources from observation alone, but they would have access to ejournals, ebooks, and databases through the library's subscriptions and collaborations with other institutions. The UAL prefers electronic formats when developing their collection, which is evident in their record for one-time payments for ebooks which nearly doubles print books in 2021 ($1,069,896.33 against $547,110.74).[139] Subject guides created by librarians funnel students to their area of study and most relevant databases or outside resources. Students may come to these library resources through their online class manager. The eClass integration enables professors and librarians to collaborate on optimizing the online class manager to include relevant subject guides, databases, tutorials, and introduce the subject librarian.[140] Direct links in the manager to library resources (e.g., an article, or ebook) shortcuts the student's work so that they never 'leave' the classroom frame. Indeed, a student does not have to be in the library, nor even on campus, for this shortcut to work. EZproxy, designed by a librarian and bought by Online Computer Library Center, maintains that shortcut even for students off campus.[141]

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[139] University of Alberta Library. (n.d.). Collection policy.
[140] University of Alberta Library. (n.d.). eClass integration.
[141] Online Computer Library Center. (2008 January 11). OCLC acquires EZproxy authentication and access software

The Librarian and the Library Space

At UAL, I saw 14 total student interactions with the staff at the service desk, with only one of these being a longer conversation about using the library – the rest were directional or to check out books. This observation does not account for the interactions I could not see, such as answering chat questions – and from personal experience working at the UAL reference desk, inquiries *are* made as to whether the 'voice' on the other end is human or a bot.

Defining Space: Ethereal and Physical. The spaces in Rutherford and Cameron are partially defined by the presence or lack of presence of ICTs. For example, both Cameron and Rutherford's main floor, and Rutherford's second floor, have similar demarcated spaces: a desktop work area with computers lined up together and near a set of printers; workstations separated by barriers and some outlets (particularly in Rutherford) for individual study; and open space with large tables for collaborative or social study. Desktops tend to appear in collaborative areas and rarely appear singularly; the physical installation of desktops – ethernet cables, power supplies, proximity to printers – necessitates grouping and is a natural definition of space. The upper floors, usually reserved for quieter study space, have significantly fewer desktops installed; Cameron's upper floor is an exception with 27 desktops, although they are separated by barriers which define the space as quite insular. Rutherford's third and fourth floors have two desktops installed on standing desks beside the elevators, suggesting quick usage rather than long-term study. These upper study floors include many individual work desks – some are traditional unpowered carousels, while others include power outlets and/or individual light sources.

The second floor of Cameron is quite open for collaborative and social study, with individual powered workstations in the open and some sequestered to the back. Prior to Covid-19

precautions, the DSC had its doors open and joined the space. The Centre's installation of ICT defines a different style of space and collaboration. Three display screens with inward facing seats invite groups to share their device's screen for collaboration. While there are desktops in a separate room (six Dell PCs and two iMacs), they are specialized for particular tasks (e.g., high-performance computing and media editing) and it would be a disservice to the space to check your email, for instance. Instead, the open space and plentiful outlets encourage students and researchers to bring their own devices unless they require specialized software or a higher performing PC. The Centre also separates itself from typical library space with its multi-purpose rooms set up to share research and/or teach. These rooms include large touch screens with cameras to record sessions. The purpose of ICT in this space focuses on the communicative and collaborative aspect of the technologies.

Students in the university libraries are primarily using the space to study and charge their devices. For example, I noted four times when students scouted the area for outlets or relocated once realizing they could not plug in their devices. The sight of cords wrapping their way down study carousels, across tables, or along floors to find outlets was common. Less expected was noticing library desktops with their power cord dangling unplugged. I noted 11 instances of desktops having been unplugged, supposedly for a student to charge their own device. Additionally, I noted 41 students using their own devices while sitting at a desktop, and 10 instances of the desktop area being rearranged to supposedly fit personal devices (e.g., keyboards propped up behind monitors or pushed far forward).

This activity is particularly present in Cameron Library's basement which has 24-hour access with a student's ONEcard. The space is filled with two computer lab areas and limited open desk space, which may account for the unplugging and rearranging if students were

creating space for themselves while the rest of the library's study spaces were closed. However, this behaviour was in action during my visits, as well as on other floors and in Rutherford. An ethical model of ICT consumption in libraries attempts to find a balance between goals of the space, user needs, and the environmental impact of devices (Poggiali, 2016). The environmental impact of devices will be addressed in the next section. Whether there is balance between ICT and user needs is worth asking when students use their own devices in front of a library desktop in both Cameron's basement (18), and in the rest of the libraries (23). These numbers are in addition to evidence of desktops being unplugged or rearranged for use. For instance, on the second floor of Rutherford, three out of five people sitting at a bank of 14 desktops were using their own devices: only two of the 14 computers were actually in use. On the other hand, the first floor at Cameron had 34 out of 57 desktops in use during a visit, just over half, with no one using the space for personal devices. Further study would need to examine the differences between how students interact with installed desktops and their personal devices in different spaces. At both EPL branches, in contrast, about half of the desktops were being used during both visits (10 and 11 out of 22 at Clareview: 27 and 28 out of 43 at Milner). Laptops were less frequently seen at Milner than at Clareview (two and 11, respectively), and were used at appropriate workstations. The needs of the users appear to be being met.

Comparing the manufacturers

Academic institutions have a greater responsibility for the ethical handling of ICT because they purchase and dispose of the equipment on a grand scale (Zazzau, 2006, p. 101). One step toward a more ethical relationship with ICT includes reaching out to IT departments for their policies (Zazzau, 2006, p. 104); at the UofA, this is handled by the Information Services

and Technology department, which includes hardware disposal services.[142] Disposal is managed

through Supply Management Services and uses a Government of Alberta certified electronics

recycler (University of Alberta & Sustainability Tracking, Assessment, and Rating System,

2020). I do not find a publicly available acquisition or disposal policy from EPL. Additional

steps to pursue an ethical consumption of ICT is to examine the manufacturer's responsibilities

and claims for end-of-life management (Zazzau, 2006, p. 105). Both UAL and EPL use Dell,

Lenovo, and Apple. Looking at these three manufacturers, I find the broad scope of sustainability

contained within their sustainability year-end reports – that is, environmental, social, and some

economic perspectives. It is clear that significant effort goes into crafting these reports for a

positive public image. Table 6 compiles the comparison between these three manufacturers,

divided by areas of improvement.

Table 6

Comparison between the sustainability reports of Apple, Dell, and Lenovo.

Area of improvement	Manufacturer		
	Apple	**Dell**	**Lenovo**
Recycling materials			
Trade in program	Yes	Yes	Yes
Recovery & reuse	Yes	Yes	Yes
Plastic	Yes	Yes	Yes
Packaging	Yes	Yes	Yes
Carbon fibre	No discussion	Yes	No discussion
Aluminum	Yes	Yes	No discussion
Cobalt	Yes	No discussion	No discussion
Copper	Yes	No discussion	No discussion

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[142] Information Services and Technology. (n.d.). Desktop support and evergreening.

Lithium	In progress	No discussion	No discussion
Rare earth elements	Yes	In progress	No discussion
Tantalum	In progress	No discussion	No discussion
Tin	Yes	No discussion	No discussion
Tungsten	Yes	No discussion	No discussion
Zinc	Yes	No discussion	No discussion

Supply chain audit

Conflict mineral oversight	Yes	Yes	Yes
General oversight	Yes	Yes	Yes
Human rights oversight	Yes	Yes	Yes
Zero waste verified	Yes/In progress	No	No

Product design

Circularity	In progress	In progress	In progress
Energy efficiency	Yes	Yes	Yes
Longevity	Yes	No discussion	Partial
Low carbon footprint	Yes	Yes	Partial
Repairability	Yes	Yes	No discussion

Third party assessment

80 Plus	No	Yes	Yes
China Energy Label	No discussion	Yes	Yes
CDP A List Leaderboard	Yes	Yes	Yes
EcoVadis[a]	No discussion	No discussion	Yes
Energy Star	Yes	Yes	Yes
EPEAT	Yes	Yes	Yes
Ethisphere	Yes	Yes	No
Know the Chain	Yes	Yes	No

Mind the Store	Yes	No	No
TCO	No	Yes	Yes

Auxiliary projects

Advocating	Yes	Yes	Yes
Carbon removal	Yes	No discussion	No discussion
Carbon neutral operations	Yes	In progress	No
Carbon neutral supply chain	In progress	In progress	No
Carbon neutral product use	Yes	Yes/In progress	Yes
Chemical & material transparency	Yes	No discussion	Yes
Cleaner smelting process	Yes	No discussion	No
Electronics recycling	Yes	Yes	No discussion
Lobbying	Yes	Yes	No discussion
Recycling rare earth magnets	No discussion	Yes/In progress	No discussion
Renewable energy	Yes	No discussion	Yes
Supplier optimization	Yes	Yes	No
Supply chain oversight	Yes	Yes	Yes
Transportation innovation	No discussion	No discussion	Yes
Water stewardship	Yes	Yes	Partial
Zero waste	Yes	Yes	No discussion

Responsible initiative membership

Responsible Business Alliance	Yes	Yes	Yes
Science Based Targets Initiative	Yes	Yes	Yes

Note. Some categories do not have straightforward answers and some deductive thinking is used. I select "no discussion" when there is not enough information in the reports to get a sense of the company's intention. I select "no" when the company refers to similar categories, but makes no mention of the one in question. For example, Lenovo spends significant space talking about their supplier chain and their responsibilities within it, so when I find no mention of supply chain optimization or carbon neutrality efforts, I feel confident it is not part of their practice. I select "partial" when there is some mention, but not a convincing amount of commitment.

[a] EcoVadis does not publicly list the companies it validates. It is up to the company to disclose their rating.

Speaking directly to the manufacturer's adopted responsibilities and end-of-life management, all three advertise some type of value back trade-in program with reuse, material recovery, and responsible disposal components. The robustness of these programs varies between companies. Apple is perfecting its disassembly robots and is currently incorporating recycled metals and minerals into their products, while Dell has some recycled metals and minerals incorporated into new products and aims to use 50% recycled components by 2030. Lenovo does not report any recycled use of metals or minerals and only makes passing mention to future goals for circular design. All three outsource their electronics recycling to certified facilities. Lenovo also offers services catered to larger institutions or business contracts, including an Asset Recovery Service that returns value to the customer while finding alternative

streams for the old technology (e.g., reuse, refurbishment, or recycling). This program is particularly relevant to libraries.

Some attention is warranted to future ambitions for more responsible design – especially as we have already considered criticisms of obsolescence. Apple offers the most discussion for their future plans, including reduced carbon emissions in production, more energy efficiency, longevity, repairability, and circular design as a goal. Dell also speaks to less emissions in production, higher energy efficiency, and repairability with circular design a goal. Lenovo similarly discusses increasing energy efficiency, with partial discussion about carbon emissions and longevity. Circularity is only discussed alongside Asset Recovery Services for institutional-level customers; repairability does not appear in the documents.

Each manufacturer recognizes the environmental, labour, and human rights pitfalls of their supply chains and seem to accept some responsibility in overseeing its performance. They are all part of the Responsible Business Alliance – a coalition of companies addressing the environmental and social impacts felt by communities along the supply chain. They provide manufacturers with training and assessment tools, and resources for auditing their first-tier suppliers;[143] as well, three off-shoot initiatives focus specifically on conflict minerals, labour, and factory environments.[144] Outside of this, the manufacturers reference third party audits and certifications that expect transparent sustainability plans and public reporting from their suppliers (and the suppliers' suppliers, continuing up the stream of suppliers supplying suppliers: *It's turtles all the way up*). They depict themselves as starting a "cascade"[145] or instigating "effects [that] can be felt beyond [their] business."[146] Apple focuses on their requirement for net-zero

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[143] Responsible Business Alliance. (n.d.). About the RBA.
[144] Ibid.
[145] Dell Technologies. (2021). Progress made real (p. 47).
[146] Apple. (2022). Environmental progress report (p. 36).

compliance in any production associated with their components; the logic follows that since Samsung (or whomever) needs to change their practices in at least one of their production lines, there is a general positive gain within the supply chain.[147] Most of these statements are well-crafted on paper and assure the reader that vigilant oversight is baked into the supply chain. Some go further; Dell, for example, initiated a third party, nongovernmental helpline for supply chain workers to report through, upon which Dell assures immediate attention.

Independent examination of supply chain disclosures in ICT are undertaken by Know the Chain (KTC), a collaborative partnership focused on addressing unfair labour conditions across the globe.[148] They compare companies' supply chain disclosures and actions across themes of commitment and governance, traceability and risk assessment, purchasing practices, recruitment, worker voice, monitoring, and remedy.[149] Part of their criticism of supply chains is that as you go further up the supply chain, working conditions become less fair.[150] For instance, KTC rates Apple's management at 68 out of 100, but the lowest ranking supplier within their chain scores a three out of 100. Similarly, Dell scores 63, with their lowest supplier achieving five.[151] Indeed, looking more closely at KTC's data, of the 30 suppliers KTC has recorded for Apple's purchases, only three score above 50. Five have unavailable scores (and KTC does not account for why that is). That leaves 22 suppliers scoring below half of KTC's benchmark, and 12 of those scores are below a quarter of the benchmark. This is to say, despite Apple's high mark (which places them fourth among its peers), their supply chain is predominantly filled by low-ranking suppliers. Using the same comparison, Dell – sixth among peers – has 15 suppliers

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[147] Apple. (2022 April 14). "Apple helps suppliers rapidly accelerate renewable energy use around the world".
[148] Know the Chain. (2015). FAQS.
[149] Know the Chain. (2021). ICT companies need to address forced labor risks in lower tier of their supply chains.
[150] Ibid.
[151] Know the Chain. 2020). Benchmark. The summary above is from both this website and through the downloaded dataset available at the bottom of the page.

captured by KTC, six are below the 50 mark and three have unavailable information, leaving only three above the halfway benchmark. KTC does recognize that manufacturers have the most influence in their first level of suppliers,[152] which is inline with the Responsible Business Alliance's focus on first tier suppliers implementing the Alliance's code of conduct.[153]

There are additional claims to creating cascading improvements in the supply chain which flow from supplementary projects. An innovative recycled aluminum smelting process reduces greenhouse gas emissions to one fortieth of the traditional process.[154] An open-source philosophy for rare earth magnet recycling would "scale up magnet recovery as a whole."[155] A transparent, detailed, and standardized database on hazardous chemical usage and storage,[156] as well as a similar database for materials of environmental interest,[157] would benefit the entire industry; additionally, standardized chemical training and substitution for the more hazardous chemicals would cascade through the supply chain.[158] A doorstep recycling service decreases e-waste in the landfill at the same time it fills the industry's recycled material reserve.[159]

Other external projects take place in the social realm, and sometimes blend into the political and economic as well. Manufacturers support minority owned businesses,[160] notably green technology-based businesses,[161] or respond to the rising racial tensions in the United States with funding to social justice movements and to Historically Black Colleges and Universities.[162]

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[152] Know the Chain. (2015). FAQS.

[153] Responsible Business Alliance. (n.d.). About RBA.

[154] Apple. (2022). Environmental progress report (p. 30).

[155] The original Dell source for this quotation has disappeared, as it goes. However, the quotation also appears in this article: Staub, C. (2019 June 12). "Rare earth magnet recovery feeds new hard drives." *E-scrape news*.

[156] Apple. (2022). Environmental progress report (pp. 65-66).

[157] Lenovo. (2021). Environmental, social, and governance report (p. 27).

[158] Apple. (2022). Environmental progress report (pp. 72 & 74).

[159] Hefferman, M. (2022 March 3). "Apple and other OEMs fund doorstep e-scrap pilot."

[160] Lenovo. (2021). Environmental, social, and governance report (p. 48).

[161] Apple. (2022). Environmental progress report (p. 81).

[162] Lenovo. (2021). Environmental, social, and governance report (p. 48).

Dell reports lobbying for free and fair elections, supporting the United States Equity Act, and

signing onto the Take on Race Coalition,[163] while Apple lobbies for clean energy legislation

where their suppliers are operating,[164] and joins a host of coalitions at a global United Nations

conference.[165] Following Apple's interest in clean energy, they also provide renewable energy

technology and infrastructure for under-resourced communities, which supports the economy

and carries social impact.[166] Finally, in Apple's pursuit of net-zero carbon emissions, they have

provided a grant to the Applied Environmental Research Foundation to work with the

communities near mangrove forests along the Arabian Sea, south of Mumbai, with the intention

of transitioning to a sustainable industry that respects the mangrove ecosystem through

conservation agreements and support.[167]

Third party rating or auditing systems are another means to evaluate the ethical operation

and construction of ICT (Poggiali, 2016). However, it is important to consider the differing

methods and goals. TCO Certified, for example, is a non-profit organization that independently

investigates facilities and creates a plan for improvement; without improvement the facility is

removed from their certification.[168] Ethisphere, on the other hand, is a for-profit organization that

relies on self-reporting to assess a company's ethical operation, which includes a survey given to

the company and by reading its policies; companies are charged a fee for the service and the

Ethisphere label.[169] It is not fair to assume an unethical relationship, of course, but the method

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[163] Dell Technologies. (2021). Progress made real (pp. 16-17).
[164] Apple. (2022). Environmental progress report (p. 26).
[165] Apple. (2022). Environmental progress report (p. 31).
[166] Apple. (2022). Environmental progress report (p. 27).
[167] Apple. (2022 April 21). "Conserving mangroves to protect local livelihoods and the planet".
[168] TCO Certified. (n.d.). Navigating the sustainable IT revolution: The critical role of independent vertificatoin.
[169] Evans, W. (2010, March 19). It's all good: Beware of corporate consulting firms offering awards for corporate ethics

has been criticized.[170] Apple (once) and Dell (ten times) have received Ethisphere's approval, with Dell also partnering in an anti-corruption campaign. However, both manufacturers are linked to the Foxconn production facilities in mainland China,[171] when in 2010 Foxconn made the news for employees ending their life.[172] The facility continues to receive attention from labour watches.[173] KTC marks Apple as a larger client of Foxconn than Dell, and indeed, Apple is usually highlighted in the news reports on Foxconn. Dell also receives TCO's certification which includes recognition of socially responsible manufacturing, whereas Apple does not. A more thorough investigation of these third-party rating systems is required, but comparing these two in the frame of Foxconn's visible labour exploitation, we get the sense that Apple is somehow more complicit.

Discussion & Analysis

The observational study has two parts with separate focus in analysis. The first is related to my observational visits and examines the enactment of the sustainability value, the connection of the ICT and library assemblages and its impacts on roles and experiences within the library. The second part of this study follows the proposals for ethical use of ICT in the library by examining the sustainability reports and third-party ratings. While the reports and ratings are informative of the current state of the ICT industry in regards to sustainability, reflections on these reports through the theoretical framework show how they can be read otherwise – as linked

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[170] Evans, W. (2010 March 19). It's all good: Beware of corporate consulting firms offering awards for corporate ethics; Lazarus, D. (2014 October 27). The ethics of firms paying to be honored for ethics.

[171] Know the Chain. (2021). ICT companies need to address forced labor risks in lower tier of their supply chains.

[172] Barboza, D. (2010, June 7). After suicides, scrutiny of China's grim factories. *The New York Times*.

[173] Business & Human Rights Resource Centre. (2019, September 9). China: Apple accused of violating labour laws as employees at iPhone factory found working 100 hours of overtime & being 'punished' for not meeting targets. *Business & Human Rights Resource Centre*; Reuters. (2022, November 29). Reactions to Apple supplier Foxconn's labour unrest. *Reuters*.

to slow violence, colonial relations, and aggressive greenwashing. These aspects partially compose a tool of silence for the industry.

Sustainability at the Libraries

The sustainably-oriented public library should foster community engagement, activity, connections, and involvement (Aldrich, 2018). Both EPL branches achieve this through location and design. Both are easily accessible by public transit, while Milner also serves the downtown core. Clareview is secluded at the end of the LRT line, but is built into a community recreation centre where the architects intentionally design the spaces to collide, reducing barriers. We are invited into these adjacent spaces through windows, odd angles, and overhangs. Milner is constructed with similar philosophy: large open spaces, connected by odd angles, and overhangs. The Milner space goes further by including art works and a gallery, as well as the Thunderbird House that brings Indigenous philosophy and culture into the space.

Looking at sustainability broadly, EPL and UAL show broad commitments to the three-part sense through their values and projects, although neither vocalizes a sustainability commitment explicitly. Sustainability activity needed to be gleaned from sources outside of my observations; I read the silence as a result of underrepresented affective labour in librarianship (i.e., the tendency not to talk about immaterial effort) and/or a passive attitude toward sustainability where libraries are understood as inherently sustainable through green building design and through information provision, or are part of a larger institution that takes care of sustainability efforts. For example, UAL's dependence on a university department for ICT waste management. I am not trying to say UAL and EPL librarians do not care about sustainability, only that they may not be tapped in to the sustainable librarian intensity of the previous chapter.

Connecting Assemblages

The ICT assemblage has considerable reorganising power. It fundamentally changes how we interact with the world and changes what our minds and bodies are capable of doing. We can focus on these interjections and see the digital technology's influence on our flow, but other times its interjection fades into the everyday humdrum of life and flawless infrastructure. The co-constitution picks up speed as it builds on previous stabilities, and it is hard to know what this transduction could achieve through its own unrestricted self-production. However, the ICT assemblage's desiring-machine is driven by a capitalist and colonial desire, which encourages accelerated consumption through upgrades, disposal, and innovative hype, and the correlative assumed right to use and pollute land as needed. Through my observations above, I focus on these aspects of the ICT assemblage below: our habituation, accelerated use, and ICT's tendency to make labour and boundaries invisible.

Habituation. Through innovative service, EPL seeks new ways to provoke wonder and encourage learning. At Milner in particular, this innovation is seen in the abundant use of digital technology, alongside EPL's commitment to digital literacy. The Wall at Milner is fun to watch; it draws you in. Children were especially eager to play with the sharks and fish, and to collect wayward floating trash.[174] Touchscreens prove to be incredibly intuitive as children and toddlers confidently walked up to begin playing. I appreciate that, sitting by the wayside, is the age-old criticism that TV and games will rot our brains. The question of too much screen time for children is well beyond the scope of this thesis, but I do want to draw attention to the ways the ICT assemblage is coming into contact with us at young ages, habituating us to its presence, processes, applications, and potentials. Indeed, the advertised spring-break activities for children

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[174] One of the activities involves catching garbage snagged in the coral reef along the bottom of the screen. It seems a little ironic in the context of this thesis.

were robot sessions that teach the fundamentals of programming. At the risk of unfairly using slippery slope rhetoric, early and widespread habituation to ICT leads to an accelerated transduction of the humans-machines connection which exposes us to further normalization of the problematic relationships the industry exploits in its current formation.

Innovation. The Wall is innovative and "unlike any other in North America;"[175] it engages children and adults, evokes wonder and imagination. But innovation can also be seen as a sign post for technological fetishism which normalizes continuous change and improvement at the neglect of maintenance for what already exists, installing a revolving door for the new and exciting (Levesque, 2020). Additionally, it imbues the digital technology with a mysticism that encourages us to forget its materiality and inherent power relations (Levesque, 2020). Of course, innovation is not in itself a bad thing – Deleuze and Guattari celebrate creative connections. The concern is in an automatic acceptance and turn toward digital technology as a tool or solution. Are NFTs really the way forward and solution to ebooks, or are they an example of the librarians "gripped … by fads and manias" (Gorman, 2015, p. 220)? Moving headlong into new technology throws into question the librarian intensity's responsibility to sustainability, specifically the economical and environmental cost attached to maintaining an innovative space through replacements, or running the equipment, and the specifically environmental cost associated with its disposal and production. When considering the materiality of The Wall (278 screens and 12 computers), is it a meaningful component of the library and patron's relationship, or is it a testament to the library's innovative spirit?

Games. Video games are, like any other type of media, a part of the cultural record. EPL and ALA also recognize them for their qualities in education, socialization, career benefits,

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[175] Edmonton Public Library. (n.d.). Digital exhibits.

literacy, peer learning, and digital citizenship.[176] The interaction I witnessed outside the Gamerspace, although only a single incident, demonstrates the social aspect and the potential crossing of worlds: the adult and child appeared to be white and middle class, while the teenager that offered to give up their time appeared to be a racial minority and perhaps lower class.[177] The gesture certainly stood out. Following this observation, offering this space and resource for gaming supports sustainability by providing recreation for those who cannot afford these systems, and bringing people together where conversations can happen and relationships can build.

My interest with this space is in a) the amount of technology it brings in, b) the frequency with which that technology needs to be replaced, since consoles regularly put out next generations, c) the associated necessity of an up-to-date game collection, and d) the pitfalls of popularity over breadth. Points a) and b) are straightforward; the Gamerspace creates another revolving door for technology to move through the library space (and budget), which may strain efforts in economic and waste sustainability. For instance, in roughly a year since Milner has opened, they have already switched from a PlayStation 4 and Xbox One to the next generations.[178] Points c) and d) can be compared to the pitfalls of ebook collection development – specifically how subscription deals and publishers prioritize best sellers from a small selection of authors, turning the library into a best-of-the-best and homogenizes the collection (Enis, 2018). I expect a similar pitfall to exist for the Gamerspace. The same digital stewardship

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[176] Digital citizenship includes normalizing responsible behaviour when interacting with technology: internet safety, privacy, relationship boundaries, communication, digital footprints, reputations, self-image, identity, information literacy, and creative credit or copyright. See Susan M. Bearden, 2016, *Digital citizenship: A community-based approach* (pp 1-11). For EPL and ALA's views, see Alfano, D. (2020, November 4). Achievement unlocked: Gamerspace opens at Milner Library and Games & Gaming Round Table. (n.d.). Games in libraries

[177] Please excuse the hedging language.

[178] Alfano, D. (2020 November 4). Achievement unlocked: Gamerspace opens at Milner Library; Edmonton Public Library. (n.d.) Gamerspace.

questions can be asked here, as well, when storage is digital and tied to platform networks rather than files in the library's possession (Bonfield, 2012; Yelton, 2012). The Gamerspace continues the trend of wondering how librarians can effectively be stewards of the cultural record with the ephemeral nature of the digital. Another contradiction within the library intensity appears: purveyor of digital resources or cultural steward.

Digital Resources. In the academic context, the turn to accessing digital resources through licensing agreements may lead to "library resources" becoming an outdated term, as well as signifying the academic librarian's turn to creating their own content "through digitization, publishing, the curation of educational and research material, research data management, institutional (as opposed to disciplinary) repositories, etc." (Popowich, 2019b, p. 165). I note that the student at UAL might come into contact with two of these services: the LibGuides and the eClass manager. I muse briefly over the shortcuts provided by the eClass manager and EZproxy, specifically, that potentially obscure the library and its resources from the student, even as they are physically using the library space. Because if the student is 'in' eClass and access an article through a convenient EZproxy link, do they ever need to 'enter' the library? In our transduction with ICT, we travel through its infrastructure to reach digital environments, conceptually. "Going to work" and "coming home" during the peak of the pandemic meant, for some of us, scuffling through our homes to sit at our computers; our face meets the screen, our hands meet the keyboard, and we travel. Indeed, while observing students, it seemed their primary use of the library space was through the desk, seating, and electricity so that their face could meet the screen, and fingers meet the keyboard.

Concerned about this turn toward service and content creation, Popowich notes that the librarian is participating in the reification of the inevitable transition to immateriality (2019b, p.

166). In doing this, the responsibility of the librarian fades away as digital technology, the network, seems to act on its own. He goes on to critique librarianship for indoctrinating itself with a neoliberal ethos through this reification, which is another important capitalist force acting on and through ICT. However, I am more interested in how the library and librarian seem to disappear through this naturalization of the immaterial, dissolving into the network through "the seamless nature of discovery, which transcends and obscures materiality…" (Levesque, 2020, p. 11).

   The Invisible Library and Librarian. As discussed in the literature review, LIS scholarship is interested in immaterial labour and the feminist perspective of affective labour. This labour is difficult to measure and translate into company value, going underappreciated (Shirazi, 2017; Sloniowski, 2016). The labour becomes invisible, especially if the librarian does not speak out about their work. Even as I muse over the library's boundaries and the students' use of the library for its physical space, I am neglecting the labour that goes into the creation and maintenance of a common study space (Sloniowski, 2016, p. 659), and that space can also be a resource. The fact that spaces on the upper and lower floors seemed to be self-managing without librarian presence, is indicative of a well-managed space. This specialised labour maintains a public space that is accessible, welcoming, and safe to the varied community members and is part of Higgins' (2017) ethic of care that drives a feminist standpoint perspective of the library's core values (that is, motivated by "social responsibility" and "the public good"). Indeed, it is this type of labour that is supposed to co-create resilient communities, and part of my own argument for UAL's contributions to a sustainable campus. The hands-off management of the UAL space is contrasted by EPL's, where librarians are visibly interacting with patrons, managing the space and desktop usage.

Even as students and patrons find value in the library space, that space disappears. At EPL, the desktop wallpaper reads: "we're bigger than our buildings." This slogan could be referring to the social reach of the library, but I read it here as the continued dissipation of library's physical boundaries that Deborah Hicks sees happening with early integration of ICT into the librarian's outreach tactics (2014a, p. 28). In our current arrangement, the patron faces the screen, and the screen faces an expanse of information – either engaging within the library and its digital resources or outward into games, gambling, social networks, movies, music, etc. The boundless arrangement from library meeting ICT is also captured in EPL's value: "One Library/One Team."[179] The singular branch's physical space is only one stratum, one flow, of EPL's assemblage; the centralized resources and borrowing is enabled through the library's connection with ICT. Similarly, it is a singular University of Alberta Library, not Libraries. Indeed, posters in both Rutherford and Cameron advertise the new self-checkout mobile application; where once a fastidious librarian recorded loans, returns, and balances, the computerized inter-library system took over (still mediated by a librarian), then self-checkout machines by-pass the physically present librarian, and now we by-pass the machines, scanners, and doorway sensors that are part of the library's boundaries. The application transplants the student and their everyday device as a new component part for the library, and invites them to pass through the librarian intensity which creates the subject-being-student-being-librarian. Moving in this direction, the sensors that ordinarily flank library entrances will disappear (checking out with your cellphone does nothing to desensitize the tattle-tape, after all), further dissolving a mark of the library boundary.

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[179] Edmonton Public Library. (n.d.). Vision, mission & values.

Concerns about affective and/or immaterial labour in librarianship are also concerns about the librarian's disappearance, as seen in neoliberalism's decentralization though ICT and the librarian's turn from a custodial function to service (Popowich, 2019b), in the librarian becoming simply a node in the information network (Allison-Cassin, 2020), and in technology's mysticism that obscures librarian labour and expertise (Levesque, 2020). When the student or patron has their face meeting the screen, fingers meeting keyboard, the librarian does the same. The shattering of the interior/exterior boundary is a natural effect of assemblages meeting, connecting (Deleuze & Guattari, 1987, pp. 49–50). However, there is also a reorganization of the intensity, such as the librarian becoming immaterial.

As the librarian becomes more technological, it reproduces a normalization of its relationship with ICT, which is currently a rather unexamined complicity. The librarian has social power that reproduces the hegemonic relations of society, which is evident in both its symbolic power that constructs "the desires and expectations of communities" (Budd, 2003, p. 22) and its position as an organic intellectual, which arises simultaneously with and from dominant powers (Raber, 2003, p. 44). In both readings, the librarian has potential to break free of this role, but it must be from acknowledging their role within society as reproducing the dominant relations, and as understanding the implications of their cultural value and power.

Through the Sustainability Reports: Slow Violence and the Implicated Librarian

By stitching together this framework, I am asking us to recognize how slow violence and the implicated subject are intentional processes within the ICT assemblage. In "the slow violence of tech's industry" section of my theoretical framework, I have shown how the ICT industry uses colonial and capitalist land and labour relations to exploit communities – in both extraction and waste disposal. CSR programming makes a show of fixing some problems, doing little about

those created by the corporation, while also recalibrating the community's social and economic perspective. Slow violence, in its covert protraction, hides responsibility of the harms while silencing the community.

One of the main problems of the ICT industry is a supply chain that has developed in a way that negates or blocks attempts to oversee it and ensure responsible practices. Manufacturers, and oversight groups such as RBA and KTC agree that the further upstream you go, the less oversight manufacturers can manage. But it is not as if these pitfalls of the supply chain happen naturally and are out of control. Likely, they exist at the urgings of the larger forces that organize our cultural world, that seek to increase value at any cost. A slight corrective course is present in how some manufacturers are stepping toward circular design and increased repairability, which may reduce some reliance on these supply chains and divert electronic waste.

But even as these manufacturers adjust their sustainability model, they are still driven by colonial and capitalist desire. When we look at the ways that Big Data is implanting itself into our ecology through stewardship initiatives, they are furthering the "material and architectural creep of settler technological imaginaries" (Hogan, 2018). We see this in Apple's sustainability reports, especially, where their drive toward net-zero carbon emissions has them providing clean energy projects globally in "mutually beneficial" agreements, and in large-scale environmental restoration (to develop carbon sinks and to manage water).[180] The corporation implants itself into these communities through these social and economic programs, and their electrical infrastructure. By also implanting itself into our ecology, the ICT assemblage reorganizes and reterritorializes our ecology for its own survival and success. This reterritorialization happens

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[180] Apple. (2022). Environmental progress report (p. 27).

outside of sustainability efforts as well, as an essential process of the ICT assemblage. It (data centres especially) reorganizes material and immaterial conditions into a climate for extraction: redefining relations, "whether natural, cultural, social, or political" that creates a "friendly environment for certain types of life and enterprise to thrive" (Brodie, 2020, p. 1097). Old infrastructure is repurposed, vulnerable labour forces are adopted, tax benefits are leveraged, etc.

The sustainability reports are "thin narratives that deploy textual and visual rhetorical strategies intended to obfuscate and overwrite resource exploitation" (Hogan, 2018). However, they are also a well-crafted and convincing bombardment of happy workers, majestic mangrove forests, and extreme examples of responsibility – such as Apple helping the Suzhou Industrial Park achieve gold-level certification by the Alliance for Water Stewardship.[181] This obfuscation is the tool of silence and misdirection used by slow violence, as those most disastrously affected by MNCs are left without the platform to talk. Scientists and researchers replace their words; PR casts a different, glorifying light. The deaths at Foxconn, the pollution from e-waste and from industry operations are elided from these reports; our attention is redirected to third-party complaint lines for workers, reforestation, waterway rehabilitation, use of renewable energy sources, the uplifting of the disadvantaged and diversity hiring policies. Conflict mineral policies assure us that every reasonable effort in oversight is met.

Yet, the community living at Kisanfu in the Democratic Republic of Congo (DRC) are facing new owners seeking the region's Cobalt (Searcey et al., 2021).[182] They already know how it will go: their homes will crack from the mining equipment, their water will be polluted, and they will eventually be relocated. But the resources are too valuable in a world amping up its

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[181] Apple. (2022). Environmental progress report (p. 56).
[182] Searchy, D. et al. (2021 November 20). "A power struggle over cobalt rattles the clean energy revolution." *The New York Times*. https://www.nytimes.com/2021/11/20/world/china-congo-cobalt.html

Cobalt usage, and too valuable to an exhausted country that needs to improve its roads, schools, and hospitals. A local person caught scavenging is shot by their own government, and a second is shot during the preceding riot. The workers, too, face silencing as the new owners are less cautious about health and safety, but complaints are met with intimidation, bribery, or claims of ignorance – eventually replaced by outsourced labour. These are not directly the actions of Apple, Dell, or Lenovo, but these are the tactics used by the supply chain.

Conclusion

By critically reading these reports and investigating manufacturers through third-party rating systems, the subject-being-librarian acknowledges the hazards of the industry and can meaningfully reflect on the profession's values, obligation of service, and its own flow within the ICT assemblage. Poggiali's proposal for a consequentialist approach to ethical consumption of ICT – where need is evaluated against (environmental) cost – is one method through which the subject-being-librarian can reconcile service requirements *and* sustainability *and* the acknowledgement of the profession's complicity in the repercussions of these technologies.

Making this acknowledgment requires an opening outward to the unbidden call from elsewhere, and to accept that plans might be ruined (Butler, 2004, p. 130); that the innocence of the librarian is a veil that limits understanding the systems of which they are a part. We cannot speak from the perspective of purity because it closes us off from the implication in the complex and harmful global systems.[183] We have seen that the sustainability librarian tends to be inward looking, finding the answers to the climate crisis lies already within the library as a sustainable institution, and the librarian as a community leader and role model. The more interesting

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[183] See Alexis Shotwell's *Against Purity: Living Ethically in Compromised Times* for an excellent discussion about the complexity of our world's toxicity and injustice, and our co-constitution with it that fundamentally marks us as impure. We are complicit, implicated, and a part of these systems. I wish I had come across the work sooner in my research so that I could have integrated it properly.

versions of the sustainable librarian involve reaching out to form unique partnerships with other intensities (e.g., butterfly enthusiasts and gardeners).

The other part of this chapter has focused on the invisible quality of ICT and how the transduction between librarianship and ICT has passed those qualities on into the library space and the librarian's role. Libraries do good work through ICT: the public library enables access to information (especially for fundamental life needs such as resources for housing and employment) or by providing access to social circles and entertainment; the academic library opens up to whole worlds of scholarly discussion and research, and librarians do their best to curate resources to navigate the student through an ocean of information; and the DSC enables the use of niche and powerful software and hardware that can contribute to new modes of research, and is a space for like-minded researchers and creators to collaborate, socialize, and learn. Being able to access all of these library resources from home is a blessing for people who do not have the time, energy, or ability to make it to the library – especially during a pandemic. Forming a connection with ICT is not, in itself, a bad thing. While I describe the connections as having a quality of invisibility, that is not entirely accurate. The ICT fades from sight, but it is because it becomes distributed through its connections to servers, the Internet, and databases, gains more power, purpose, and ability. The librarian and the librarian-adjacent enjoy similar gains through its distribution – the most perceptible being increased access and convenience.

However, we must also recognize that the ICT assemblage has substantial power to reorganize and shift other assemblages, and that it is in many cases driven by an overbearing capitalist regime (that is also colonial and neoliberal). We can see some of these concerns in LIS discourse, such as with ebooks and the potential trade-offs to which librarians will have to commit (e.g., licensing agreement and restrictive software that inhibits stewardship) (Yelton,

2012). In my study here, it is not habituation in and of itself I find problematic; it is a normalization and reification of our relationship with technology, without an outward looking appreciation for the resources, labour, and power that goes into its construction, the assumed rights to land for dumping waste, and the capitalist forces that accelerate our purchasing. We have, at once, become desensitized to the fantastic accumulation of skill and knowledge that creates these digital technologies, while also supposing they, and their processes, materialize from nothing (Levesque, 2022).[184] The librarian likewise disappears into the technology, their labour and expertise going unnoticed (Levesque, 2022).

To be blunt, I do not know at what point we can say a company is doing enough to offset the irresponsible parts of its extraction, manufacture, end-of-life, and labour practices. Apple makes a compelling argument that they are doing a lot of good by reforesting, rejuvenating, and providing benefits to disadvantaged communities around the world. Sustainability reports are convincing, but in my mind, as long as child and forced labour are evidenced concerns in the electronics industry (United States Department of Labor, 2021), and nets are installed at the bases of Foxconn factories for 'worker safety',[185] there is no perfect manufacturer – no degree of spectacular reforestation or reuse of ocean-bound plastics – that can negate those deep-rooted social, political, and economic inequalities and exploitation.

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[184] Levesque is citing Aníbal García Arregui. 2011. "Too 'high' tech: Metonymical fallacies and fetishism in the perception of technology." *Journal of Contemporary Anthropology* 11(1): 17.

[185] Cooper, R. (2012 February 20). "Inside Apple's Chinese 'sweatshop' factory where workers are paid just £1.12 per hour to produce iPhones and iPads for the West" *Mail Online.* https://www.dailymail.co.uk/news/article-2103798/Revealed-Inside-Apples-Chinese-sweatshop-factory-workers-paid-just-1-12-hour.html

Chapter 5: Acting Otherwise

"What is your body without organs? What are your lines? What map are you in the process of making or rearranging? What abstract line will you draw, and at what price, for yourself and for others? What is your line of flight? What is your BwO, merged with that line? Are you cracking up? Are you going to crack up? Are you deterritorializing? Which lines are you severing, and which are you extending or resuming? (Deleuze & Guattari, 1987, p. 203)

"These institutions shape and (re)produce violence and harm but also have the capacity to build toward care, joy, and justice." (Leung & López-McKnight, 2021, p. 8)

The librarian is conflicted. It meets with ICT to create a wealth of valuable services and increased access, while at the same time, it is increasingly embedding itself into an industry driven by ruinous relations with the world and communities near and far. So much of the library's services and resources require our faces to meet the screen – for both patrons and librarians – that the library loses its boundaries. This is true for both academic and public library, because although students come into the campus library, they do so primarily to access resources through ICT. And although the public library is an important public space for equitable access and being able to exist without spending money, it is also embracing digital resources: ebooks, games, and public computers. In EPL's case, the strong impetus for innovation – most evident in the eye-catching Wall – raises questions about the extent to which digital technology is being viewed as a pre-determined solution, and the rate of normalizing and reifying our current inattentive relationship with ICT, where the resources, labour, and power that construct these things go unnoticed in their daily use.

There is a long history of folding geological processes and of human ingenuity, knowledge, and imagination in these technologies, but they quickly become invisible as we type, watch movies, read articles, or listen to music. They are complex artifacts, built from precious minerals and metals, and molded through precarious labour. As Jussi Parikka (2015) shows us, the finely polished aluminum casing is connected to the labourer's lungs as they breathe in its dust. These are not just unitary things – they are comprised of layers, strata, and lines flowing through people and land. Ecological and cultural worlds alike have been reorganized, reterritorialized, to create them. And they will continue long after our use, flowing into other people's lands, interjecting with their way of life, and turning it into a toxic ecology. These strata are intentional, structured, and sanctioned violence, through a powerful capitalist regime and colonial land relations.

The sustainable librarian intensity creates a particular contradictory arrangement because on the one hand, it values sustainability, part of which includes social responsibility, and on the other, a duty to quality service. The social responsibility in itself is a contradicting value: responsible to provide equitable access, but also responsible to acknowledge and ameliorate "critical problems of society" (American Library Association, 2019). Today's sustainable librarian is more attuned to social responsibility than perhaps its early accumulations, which focused more on environmentalism and carbon emissions. While those aspects are still present, there is a strong impulse for holistic sustainability and a particular rhetoric for leadership and fostering resilient communities. This rhetoric is inspiring, but also celebrates librarians for already being sustainability catalysts, role models, and leaders. The discourse effectively substantiates these claims into reality through repetitive evocative language, creating a convincing image of the librarian as a sustainability champion. Little attention is given to how

the library or librarian are active participants in the overbearing systems that bring us to this point.

The librarian intensity needs to open outward from this innocence and purity. By being focused inward on its own professional ideology, the librarian risks entering the "proliferation of a cancerous stratum" (Deleuze & Guattari, 1987, p. 165) – a static proliferation lodged within a stratum, rather than growth through a connection with other strata. Or, a "defensive purity of self-contained identities" (Rothberg, 2019, p. 201), which lends itself well to arborescent lineage and teleology. Through the implicated subject, we are asked to open out to others and our "unacknowledged capacity to wound," and to find collective action through our different forms of implication (Rothberg, 2019, pp. 200–201). In a similar flow, the schizophrenic process also opens outward to acknowledge our intensities are always also constituted by other intensities that attribute another's subjectivity. The schizophrenic process is about unrestrained desire and moving beyond the structures that impose their rigidity. When a codification says to be *either or*, the schizophrenic says, "how about *both*?" The schizophrenic process is experimentation, looking out from the intensity the subject currently inhabits. I propose the subject-being-sustainable-librarian engage with this double opening outward: first, acknowledge complicity in harmful systems by avoiding an inward dwelling on identity; second, by seeking connections beyond the librarian intensity that may create something new and meaningful.

The sustainability librarian is capable of making interesting connections through collaboration that alter typical arrangements of librarianship. The seed library is a popular and strong example of what a rhizomatic connection with the 'outside' could be. Rather than a continued focus on books or packaged information, the seed library encourages a different, tangible type of knowledge that is learned and improved through activity and engagement with

the earth. Indeed, without a static collection with a one-to-one relationship – where a specific book is borrowed and that specific book is returned – the typical collections and borrowing relationship is reorganized. Replenishing the collection is encouraged, but harvesting seeds is an advanced skill. In this way, an argument could be made that the seed 'library' is a misnomer, yet they grow in popularity and place within public libraries. The library intensity changes, acquiring new flows, and new arrangements of resources and labour.

More in line with ICT, repair events are another example of the library forming partnerships and running events outside of its traditional librarian role. These events are not discussed in the studied discourse, but do appear in the literature review of environmentalism and the library. Repair events depend on experienced volunteers to donate their time and skill, with an overall impulse to develop problem solving, share skills, and life-long learning, as well as reframing values around consumerism, the environment, and sustainability (Griffis, 2022). There is great potential in repair events for the subject-being-librarian to acknowledge the library's substantial complicity in the ICT assemblage, including all of the costs associated with digital technologies, their services, and their waste. Enacting the informative role, the librarian could curate displays about obsolescence and waste, or point to movements campaigning for the right to repair ICT. Or, vocally call out their own policies regarding acquisition and disposal. In enacting the convener role, the librarian could partner with certified electronic recycling companies to accept any objects beyond repair.

The desire to be a sustainability librarian, to be a convener, or role model is effectuated through affective labour. On the one hand, affective labour is another means through which capital can be extracted from the labourer – expectations that are in addition to the job, yet somehow not compensated or valued (e.g., maintaining social relations and a workplace culture).

Vocational awe is a compelling critique of how affective labour is a *substantial* part of the librarian intensity by imbuing an above-and-beyond ethos and veneration of a profession that is, nonetheless, a job (Ettarh, 2018). Or, as shown through large scale digitization efforts, the manipulation of affective labour encourages the worker to do more, and accept less, out of a love for the job (in this case, books and the pedestal on which we place them) (Lee, 2019). At the same time, affective labour is inherent to fostering community and collective subjectivities (Hardt, 1999), and therefore can also be leveraged toward collective activist action, which requires a clear intention for non-neutral participation. For example, convening like-minded concerned citizens on the topic of toxic technology and consumer culture. Affective labour can also disrupt the processes of reification by creating alternative spaces for discussion, engagement, dissent, and inefficiency, or by subverting the values of access and service toward a radical care ethic (Higgins, 2017; Popowich, 2020; Sloniowski, 2016). In the case of a repair event, being open about the library's own strata within the ICT assemblage interrupts the normalization of our relationship with ICT, shifting to normalizing concern and a willingness to better appreciate and de-mystify the material cost, labour, skill, and land that composes our digital technologies: to show it from the middle.

The sustainable librarian intensity has demonstrated these aspects in its discourse: non-neutrality, fostering discussion, community engagement, and inspiring change. However, the discourses also focus inward on what the librarian is already capable of as a solution to the problems, of veering into vocational awe and the valorization of historical ideologies. It is a perspective of innocence and purity that blocks a critical reflection on practices that are unsustainable. It is the type of lineage-based, arborescent thinking that Deleuze and Guattari try to break open with the rhizome and outward connections.

For our philosophers, the milieu from which and on which intensities are accumulated is also sometimes where the Body without Organs (BwO) expands; the BwO "is that glacial reality where the alluvions, sedimentations, coagulations, foldings, and recoilings that compose the organism – and also a signification and a subject – occur" (Deleuze & Guattari, 1987, p. 158); it "is desire; it is that which one desires and by which one desires," but it is possible for desire to lead to destruction: "Even when it falls into the void of too-sudden destratification, or into the proliferation of a cancerous stratum, it is still desire. Desire stretches that far: desiring one's own annihilation, or desiring the power to annihilate" (Deleuze & Guattari, 1987, p. 165). When the librarian distributes themself into the ICT assemblage, and closes themself off from critical reflection of that relationship, what is the librarian desiring?

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Appendix A

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