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Identity

A L E T H E I A

Aletheia is the first ever peer-reviewed journal that exclusively features the innovative and interdisciplinary work of students from McMaster's Arts & Science program. Each year, two editions are released, each revolving around a central theme and compiling research-based papers, and a few creative pieces, written during the previous semester. To make this possible, Aletheia has an incredible team of Arts & Science student Editors, Peer Reviewers and Graphic Designers.

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LETTER FROM THE EDITORS

Welcome to the fourth edition of *Aletheia*— a student-led, peer-reviewed journal showcasing written works from students in McMaster's Arts & Science program. In this edition, we are excited to share a diverse array of papers written in Arts & Science courses from the Fall 2021 term, reviewed carefully this semester by our team of Peer Reviewers.

The theme for this edition of the journal is "identity". This theme is central to our society, permeating our view of ourselves, others, and our communities. In this edition, with the theme of Identity, we are looking for papers that address the complexities that arise between how one identifies or is identified, and how they then are situated within society. These papers may explore the components that make up an individual, how people choose to identify themselves, or what level of autonomy one has in defining the self. The journal encompasses papers from Literature, Global Challenges and Diversity and Human Rights.

Zahra: It has been a pleasure working on Aletheia for the past two years and I am grateful that I have been able to watch it grow from an idea of two optimistic third years, and two keen first years into a fruitful showcase of Artsci talent. Thank you to all the reviewers and authors this year that made this another successful year for Aletheia!

Vanessa: I have been honoured to have the opportunity to be part of this editorial board this past year. It has been a wonderful journey to see how Aletheia has grown and changed, amidst a very chaotic two years.

Thank you to all the authors who submitted a piece for the journal. From first year to fifth year, we have received a wide range of amazing submissions that reflect the ingenuity of the Arts & Science community. A huge thank you to our peer reviewers who have dedicated their time and efforts to maximizing the potential of this peer-reviewed journal. Thank you to Bohmee, who has once again blown us away with her creativity and talents. Finally, thank you to Zahra, Micah, and Oishee, for being a fantastic team to work with over these past few months.

Micah: I am excited to see the excellence of Arts and Science students showcased yet again in another edition of our wonderful journal. It has been an honour to serve as co-Editor-In-Chief this past year, and I am excited to see where it is taken in the years to come. A huge thank you to the peer reviewers who dedicated many hours during busy semesters to help our authors to publish their best possible work. A huge thank you also to the rest of the Aletheia team who have each been wonderful to work with and incredibly dedicated to Aletheia. To all of the readers, I hope that you enjoy this edition of Aletheia. We have some interesting perspectives and pieces of work at an impressive level of depth and analysis in the many different areas of study that Arts and Science students pursue. Your journey through the journal will not disappoint.

Oishee: A huge thank you to everyone working on the staff and editorial team of Aletheia, as well as the authors and readers for making this journal so wonderful! Witnessing the growth of this journal over the past two years has been a meaningful experience, and I hope you enjoy reading this edition as much as I have.

To the authors involved in this edition, thank you for your openness to feedback and patience throughout the review process. To the Peer Reviewers, thank you for taking the time to provide such thorough and thoughtful revisions during the busiest times of the school year. And we remain so grateful for the creativity and dedication of our graphics team in putting this publication together.

Next year, the journal will continue under the guidance of two Editors-in-Chief: Oishee Ghosh, and Gabrielle Maerov. Also on the Editorial Board will be Sanjana Shah, who will serve as an editor-in-training. Similar to the past two years, Sanjana will be serving on the Editorial team for the next two years, with the intention of becoming one of the Editors-in-chief for the 2023/24 school year.

We are very excited to see where the new Editorial Board takes the journal next school year, and to witness the evolution and continuation of *Aletheia* for years to come. We highly encourage students who are interested in getting involved to apply for a review position next fall, or to submit your work in the 2022/2023 school year.

Thank you for taking the time to check out the journal. We hope you enjoy it!

Best regards,

Zahra Panju, Vanessa Natareno, Micah Maerov and Oishee Ghosh

ARE YOU THERE CASSANDRA? IT'S ME, LOULOU

Julia Menezes

Arts & Science 3A06: Literature

In "Speaking of Buchner," Christa Wolf argues that literature should be taken "at its word" (186) as a language that has the unique ability to reveal "the reality of man today" (185). For Wolf, literature is rooted in "the courage for self knowledge" (185) and transcends the scientifically and politically constructed divisions of self and other. Consequently, literature can be seen as a form of "peace research" (Wolf, "Speaking of Buchner" 185). Accepting Wolf's claim that literature is peace research, I wonder: what possibilities does Wolf's novel *Cassandra* provide for individuals blind to the "reality of man today" (Wolf, "Speaking of Buchner" 185)?

In Margaret Atwood's "Loulou; or, The Domestic Life of the Language," Loulou is a character unable to confront her own reality. Seemingly trapped in the monotony of life with the poets, she tries to imagine an alternative life through a sexual encounter with an accountant, which turns out to be alienating. Loulou assumes that being with the accountant will "change her" (57), but she is ultimately unsatisfied when the encounter leaves her feeling "disoriented" and "less understood" (60). Blind to the reality that she is complicit in constructing the very identity that oppresses her, Loulou is unable to imagine a viable alternative to her situation. Inspired by the contemplative styles of Judy Blume's *Are You There God? It's Me, Margaret* and Christa Wolf's *Cassandra*, this essay asks: What if Loulou read *Cassandra*? Would Loulou find the "courage for self knowledge" (Wolf, "Speaking of Buchner" 185) needed to reimagine her circumstances? By tracing Loulou's hypothetical engagement with *Cassandra*, I argue that through meaningful engagement with literature, Loulou has the potential to imagine a "third alternative" (Wolf, *Cassandra* 118) away from the repressive monotony of the poets and the disorienting alienation of the accountant. In alignment with Wolf's view of literature as peace research, I contend that literature such as *Cassandra* has the power to prompt readers to see what is, imagine *what if?,* and assert *why not?*

Are you there Cassandra? It's me, Loulou.

I suppose you don't know me, but I feel as if I know you. You made me care about the words in a way that the poets never could. That's the problem, isn't it? I was always fixated on "the poets" (Atwood 46), as if I existed in a separate world. But, of course, I am getting ahead of myself.

I will begin with what I know best: the clay. Cassandra, you said that while living

in the caves, you "pressed [your] hands side by side into the soft clay [and] called that immortalizing [your] memory" (Wolf, *Cassandra* 133). For a long time, I could not understand why you – all of you in the cave community – were content with being immortalized. It seemed reckless to me to press your hands into clay at a time when you were "fragile" (Wolf, *Cassandra* 133). Why did you want to immortalize a version of yourselves that was so vulnerable? Why did you "laugh" (133)?

I understand now that you did not fear your own vulnerability because you were preoccupied with being "at one" (Wolf, *Cassandra* 117) with each other. Vulnerability was of "minor importance" (133) because you focused on building community. You "laughed" (133) because it did not matter whether you were immortalized. How I wish I could say the same! In my own state of – why do I hesitate to write this? – vulnerability, whenever I did not know the meaning of one of the poets' words, I searched through the Shorter Oxford kept in the study. Each time, I washed my hands first so that I did not "leave any tell-tale signs of clay on the page" (Atwood 45). Why was I afraid to leave any "tell-tale signs" (45)? Why did I not stake my clay-covered claim in the Shorter Oxford and call that immortalizing my presence? Your words, Cassandra, helped me realize that I feared being immortalized because I was afraid to admit that I was, *I am*, fragile. I worried what the poets would say if they found out that I did not know what their words meant. What words would they choose to mock me?

It was Arisbe who helped me realize that it was never about the poets at all. Her words to you, Cassandra, might as well have been spoken directly to me: "why did you let them have power over you?" (Wolf, *Cassandra* 62). At first, I resisted the idea that anyone could have power over me, let alone that I let them have power. Then, I realized that the poets' words were changing my actions, *changing me*. It was not simply that the poets were labelling me with their words, calling me the "Great Goddess" (45) and "great mattress" (45). The poets had power over me because I let them determine whether I washed my hands or lived with the messiness of the clay. It occurs to me now that I have not yet answered Arisbe's question: why did I let them?

I am thinking about the moment Paris admitted that Helen was never in Troy. You wondered why you shrieked "We are lost!" and not "Trojans, there is no Helen!" (Wolf, *Cassandra* 69). Oh Cassandra, how I did the same! I stood in the kitchen, the poets surrounding me, and watched as they described me, Loulou, as their creation. Why did I say, "up your nose" (Atwood 62) and not "there is no Loulou!"? Why did I let them think that they had invented me?

You said that it was the leader of the palace guard, Eumelos, inside you that forbade you from saying "there is no Helen!" (Wolf, *Cassandra* 69). Your inner Eumelos barred you from speaking the truth because you still wanted to be accepted as the favourite daughter and high priestess. You found comfort in the conventional world because in the conventional world, you were "accustomed to being the exception" (Wolf, *Cassandra* 14). As the exception, you did not

have to justify your actions to anyone, not even yourself.

The poets are my Eumelos. The poets inside me forbid me – *forbade me* – from speaking the truth. I could not say that their Loulou did not exist because as much as I hated being mocked as "functionally illiterate" (Atwood 46) Loulou, my fear of *not* being Loulou was greater. I feared a world in which I was no longer the subject of their poems because I felt that being their muse gave me power over them. This is what Arisbe meant when she asked why I – you – let them have power. I let the poets have power over the words that I spoke and the words that described me because I was comfortable in the world where I was expected to be "*just like Loulou*" (Atwood 62). I did not see how my comfortable monotony was repressive.

On the topic of repression, I wonder about Clytemnestra. You said that "in different times nothing would have prevented [you] from calling each other sisters" (Wolf, *Cassandra* 41). What did you mean by different times? I do not think you simply meant a time without war. I think you meant a time when being alive did not mean labelling Clytemnestra as an automatic "adversary" (Wolf, *Cassandra* 41). In different times, you would both be able to connect over the shared "pain" (42) of being oppressed by Agamemnon. But no, I do not simply mean Agamemnon. I mean the shared pain of being oppressed by a system that survives for the purpose of labelling people as friend or 'other.'

I know what it means to survive in a world, *in a body*, sustained by othering. I am thinking now about that day when the female poets came for coffee and "the poets" (Atwood 44) suddenly became "[my] poets" (51). I was so quick in that moment to judge the female poets as adversaries. What about that time prevented me from calling them sisters? Could I not see that we shared the same pain? The female poets were trapped by their "cheek-bones" (51) just as much as I was trapped by my "rank" (49) hair. The knowledge that we were the same was within me, even then. I did not like "hearing them put down" (52). Yet, I could not see a different reality. I could not imagine a world where we lived together. Could I call them sisters now? Would you, Cassandra, call Clytemnestra a sister now?

For a long time, I thought that the accountant was an alternative to the poets. Your words, Cassandra, helped me to realize how blind I was. You said that when Hecuba was banned from participating in council meetings in the palace, you looked forward to the change that "was bound to occur" (Wolf, *Cassandra* 92). You waited for a change, as I did after having sex with the accountant, but "nothing happened" (Wolf, *Cassandra* 92). When I returned to the poets, I felt "less understood" (Atwood 60). My world, like yours, had not changed. Panthous' words to you suddenly come to my mind: "it's really a pity that when one comes back one always finds the same old thing" (Wolf, *Cassandra* 63). It strikes me, Cassandra, that you only escaped the "same old" (Wolf, *Cassandra* 63) Trojan world when you stopped waiting for the world to change around you and chose to live. You chose "not to shrink from what is most difficult – to change one's image of oneself" (Wolf, *Cassandra* 21). Why did I not do the same? Why did I not choose to live by

changing my self image? Why did I seek out the accountant?

You have a strength that I never did, Cassandra. My "smoothly muscled arms" (Atwood 44) and "marmoreal" (44) hands pale in comparison to the strength that you had to change your self image and seek out your community. You sought out the caves as pockets of air in a solid marmoreal foundation: sites of interstice in a time of war.

While you built a life in cavernous pockets of air, I directed my energy towards removing air from clay. I did not consider any of the apprentices "suitable for wedging clay with their puny little biceps and match-stick wrists" (44). But it was never about *them*, was it? I was fixated on wedging the clay myself because I feared the presence of air bubbles and what would happen when they reached the heat of the kiln. I feared that the air bubbles would expand and *crack!* Yes, that was it. I feared the cracks. I feared the air bubbles that created cracks. How different my actions seem from your choice to live in the caves: you sought out the magmatic air bubbles as a way of exposing the cracks in the "same old" (Wolf, *Cassandra* 63) Trojan cycles of death and violence.

What can I do Cassandra? How can I find my caves? I have no Arisbe to challenge my blindness. I have no Myrine to force me "to look into the light" (Wolf, *Cassandra* 132) or Anchises to carve me a wooden pony of hope. You, Cassandra, are all that I have, and even you are just words on a page. Are you enough? Is literature enough?

I wonder: what would it be like to live as you do? Not to *be Cassandra*, but to simply *be* – to live. How would it feel to "make pots, clay vessels" (Wolf, *Cassandra* 132) as you do, for the sole purpose of creating, instead of for the purpose of selling to provide "fresh chicken[s]" (Atwood 55) to the poets?

When you were at Anchises' place, the young slave woman Killa said that between "killing and dying there is a third alternative: living" (118). I wonder if this is universally true. What if I have no third alternative? What if I have no one to teach me how to live? Perhaps I am asking the wrong questions. Perhaps I have had a third alternative all along.

What if I invite the apprentices with their "match-stick wrists" (44) to wedge the slabs of clay? What if I direct my energy towards creating a space for learning, letting Marilyn make the cup handles crooked even if they spill coffee when used? What if I stop trying to be "*just like Loulou"* (62) and decide to just *be*?

You said that "it took a while for [members of the cave community] to make up their minds about [you]" (Wolf, *Cassandra* 62). Finding community in the caves was a reciprocal process that started when you allowed cracks to form in your identity as Cassandra the "priestess" (12). You could not "have it both ways" (62) and be both King Priam's favourite daughter and the Cassandra that lived in the caves. When you chose to let go of your identity as priestess, you chose to be "at one" (117) with the dynamic wholeness of the cave community. When you chose them, they chose you too.

I feel myself slipping now. What if there is no one to choose me? Again, Arisbe's

words shake me awake: “enough self-pity” (Wolf, *Cassandra* 61).

If I truly “desire to be taken care of” (Atwood 54) I need to allow cracks in my marmoreal foundation. I cannot have it both ways. I cannot be both the socially constructed, “functionally illiterate” (Atwood 49) Loulou and the Loulou “underneath it all” (61). I think the apprentices might choose me if given the chance. I think the female poets might choose me if I allow myself to be vulnerable to connecting over our shared pain.

Are you still there Cassandra? It’s me, Loulou. I know you are there, Cassandra. You are always there; literature is always there. Waiting. Ready. The question was never whether you were ready. It was always about me. I am ready.

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COURAGEOUS VISION TO DECISIVE ACTION

Andrea Chang

Arts & Science 3A06: Literature

This December, the weather and climate of Hamilton, ON feels more like early spring than it does early winter. Anybody can observe these changing weather patterns. Even still, a lack of decisive climate action by world leaders is resulting in an ever-worsening climate crisis. It is having the courage to look that enables decisive movement, or power, defined as "the ability to do or act." In Dante's epic poem *Inferno*, powerlessness, or the inability to do or act, is even associated with hell. The character Dante is able to continuously move forward, through the static hell, due to the guidance and encouragement from the figure Virgil. Characters from Wolf's 1983 novel *Cassandra* and the Homeric epic *The Iliad* are similarly faced with opportunities to begin seeing and therefore moving out of their static positions through decisive action. This paper will seek to use the guiding Virgilian framework from *Inferno* to consider empowering and disempowering interactions in *Cassandra* and *The Iliad*.

Inferno opens with Dante "within a shadowed forest" (Dante, *Inferno* 1.2), full of "fear" (1.6). He quickly encounters "the bottom of a hill" (1.13), which "harassed [his] heart with so much fear" (1.15). Then, however, he has the courage to "look on high" (1.16), and sees the "shoulders" (1.16) of the hill "clothed…by the rays" (1.16) of heaven. Dante remarks that "at this, [his] fear was somewhat quieted" (1.19). Here, looking ahead is Dante's first step in gaining the courage to get from an undesirable here to a desirable there. This practice of intentional looking is encouraged by Virgil, who guides Dante through the rest of hell. When faced by the threat of being petrified, forever frozen by Medusa, Virgil instructs Dante both to verbally "turn round and keep [his] eyes shut" (9.55) and physically "[Virgil] himself turned [Dante] / around and, not content with just [Dante's] hands, / used [Virgil's] as well to cover up [Dante's] eyes." (9.58-60). Virgil then instructs Dante to let his "optic / nerve turn directly toward" (9.73-74) a new direction. Vision is therefore crucially related to movement in *Inferno*.

Virgil is an empowering and guiding figure to Dante, and himself able to move through hell, partially because of his clear vision of hell and the world beyond hell. In this regard, Virgil stands apart from the other hell-dwellers who are unable to see beyond their circles and are therefore stuck. For instance, Virgil "quickly mask[s] his own new pallor" (9.3) when he notices how his own fear is impacting Dante. Virgil's ability to observe those around him enables him to react in a constructive way. Additionally, Virgil is able to effectively guide Dante because he can see

and therefore empathize with the other hell-dwellers. When "Heaven's messenger" (9.85) appears, Dante immediately remarks that he seemed to be "full of high disdain" (9.88). His "first words" (9.92) were "O you cast out of Heaven, hated crowd" (9.91). This heavenly figure's judgement prevents him from fully seeing and understanding the circumstances of the hell-dwellers. He is therefore unable to empathize and unhelpful in guiding Dante in continuous movement.

Hell, as imagined in *Inferno*, consists of circles of entrapment which dwellers are unable to see beyond and move through. Instead, hell-dwellers are petrified, frozen, overcome, and afraid. For instance, the first hell-dwellers that Dante encounters are "the coward angels" (3.37) who "were not rebels / nor faithful to their God" (3.38-39), and those who were "abject" (3.47) and "envious of every other fate" (3.48) in life. Those who are so indecisive that they are unable to move forward with any action are condemned to an afterlife in which they are similarly stuck. Soon after, Dante meets hell-dwelling Francesca who claims that her illicit love for Paolo "has not left [her] yet" (5.105) because love "releases no beloved from loving" (5.103). She is unable to see that she has the agency to change her circumstances, and is therefore stuck in a fixed version of herself. After Dante had "listened to those injured souls" (5.109), Virgil asks him "What are you thinking?" (5.111), and encourages Dante to question Francesca further. Virgil helps Dante to cast a critical eye on others by looking, seeing and understanding. Lastly, in the ninth circle and fourth ring of hell, dwellers are totally covered by ice and frozen still. Virgil immediately tells Dante to "keep his eyes ahead" (34.2) and "look" (34.20) at Lucifer to confront their last obstacle in hell. Lucifer embodies the petrification of hell, as he "agitat[es]" (34.50) his wings, which instead of producing movement, produces a cold wind that keeps hell frozen. The poem ends with Dante and Virgil climbing Lucifer's stationary, frozen body to finally leave hell. Virgil's encouragement is key to Dante's ability to move through hell, unlike the stuck hell-dwellers, because he is able to see his surroundings fully and honestly.

In Wolf's *Cassandra*, the titular character retrospectively considers her journey from a place of privilege and "blind[ness]" (Wolf, *Cassandra* 27) to a place of seeing realities beyond her own (20). Cassandra grows up in the royal court of Troy, and describes herself as her "father's favorite" (13) and "interested in politics" (13). Marpessa, Cassandra's slave, crucially brings her to a cave community outside of the palace court "one evening at twilight" (19). Here, Cassandra is surprised to see "slave women from the palace, women from the settlements beyond the walls of the citadel, and also Parthena the nurse" (19). This experience makes Cassandra realize that there are "realities…in Troy" (20) beyond her own for the first time. As Virgil does for Dante, Marpessa here guides Cassandra in seeing beyond what she knew. Arisbe is another challenging and encouraging figure that helps Cassandra learn to see. When Cassandra is clinging to her "madness" (60), she avoids any constructive action in choosing to wallow in her "lunacy" (60). However, "one day" (61), Arisbe arrives. Despite Cassandra "bellowing" (61) until her "voice gave out" (61), Arisbe remains.

Eventually, Arisbe advises Cassandra that "this is not the way [she] can punish" (61) those at whom she was angry in the castle. "The next day [Arisbe] came again" (61) and continues to challenge Cassandra "to free [her]self from madness" (61). Arisbe tells Cassandra to "open [her] inner eye" (61) and "look at [her]self" (61). Here Arisbe adopts a Virgilian role, and encourages Cassandra to begin taking constructive action by looking. Cassandra can only become empowered to change and move by recognizing her own coping mechanisms and choosing to react differently.

Wolf's version of Cassandra has no gift of prophecy from the gods, but rather an ability to anticipate future outcomes by courageously looking and seeing the here and now. For instance, she remarks that "anyone could see that [the] soldiers were not doing well" (71) in the war, and therefore predict that the Trojans might lose the war. It is not that Cassandra is able to see more than others, but rather that "unlike others" (58), she "was not able to ignore" (58) the signs that she saw. Crucially for Cassandra, her seeing is related to speaking as a form of movement. For instance, in recalling Paris's possessive outburst that escalated the Trojan readiness for war, she observes that "each person present felt that a mark was being overstepped" (59), though she "alone" (59) "shrieks, shrieks, shrieks" (59) "woe, woe. Do not let the ship depart!" (59). Additionally, when Cassandra sees that "the reason for the war" (68), Helen, "doesn't exist" (68) she again exclaims "We are lost. Woe, we are lost!" (68). Though everyone else in the palace knew that Helen was not in Troy, Cassandra is the only one to use her vision to motivate movement in the form of speech. She has the courage to admit that "it was intolerable…to base the whole war—and [their] whole lives, for wasn't war [their] life!—on the accident of a lie." (85). While relationships outside of the royal court with Marpessa and Arisbe empower Cassandra, interactions with the militaristic culture of the court silence her and render her disempowered, a "captive" (69). For instance, Priam exclaims "be silent, Cassandra!" (126) when she verbally refuses to support the court's plan to use Polyxena to trick Achilles. The members of Trojan council also declare that Cassandra is "mad" (75) in response to her suggestion that the "war be ended at once" (75) "by telling the truth about Helen" (75). Throughout the novel, however, Cassandra refuses to be silenced and continues to take decisive action by speaking up. She does not succumb to "spreading empty chatter" (89) like her brother Helenus, whose oracle was made to "the royal family's" (89) "order" (89).

Being in a space where one can speak openly and not have to censor oneself, where one does not have to fear that vulnerability will be weaponized, is what empowers Cassandra to begin living. She moves from the palace mentality of "life at any cost" (81) and "surviv[al]" (81) to "liv[ing] [her] life of freedom; in the middle of the war, completely unprotected, surrounded by an ever-growing horde of people armed to the teeth" (93). Looking beyond the binary of "killing and dying" (118) opens characters up to a "third option: living" (118). Anchises describes "the gift of empathy" (107) as an "alternative" (106) that is "crush[ed]" (106) between "clear-cut distinctions" (106). "If only [the Greeks] could embrace someone

besides themselves within the iron concepts of good and evil. [The Trojans], for example" (107) Cassandra wonders. Therefore, it is seeing beyond normative binaries that enables decisive positive change. Just as empathy helped Virgil to guide Dante helpfully, empathy on both sides has the capability of ending the essentially pointless Trojan War.

Achilles in the Homeric epic *The Iliad*, is empowered to remove himself from the dominant militarism of the Trojan War through his ability to critically see. *The Iliad* begins with Achilles questioning Agamemnon's "orders" (Homer, *The Iliad* 1.175) and "commands" (1.346) and a refusal to "do battle" (1.349) for him. Though he is a powerful and successful Greek warrior, he is able to question the dominant militaristic structures that he was previously a part of. He identifies and questions Agamemnon's "greed" (1.176) as the sole motivation for the war, and is able to empathize with and relate to the Trojans, who "never did [Achilles] damage, not in the least" (1.180). He decides that he does not want to "linger…disgraced" (1.201) at the battlefield, in declaring "back I go to Phthia. Better that way by far, / to journey home" (1.198-199). Achilles is able to also subvert the dominant militaristic definitions of courage and cowardice, by realizing "what a worthless, burnt-out coward I'd be called / if I would submit to [Agamemnon] and all [his] orders" (1.343-344). Here, he re-defines a coward as someone who is blindly commits violent acts, rather than someone who is too afraid to participate on the battlefield. Thus, for most of the epic, Achilles remains on the sidelines of the war. Though he may appear to be figuratively in the same, unchanging, position as the hell-dwellers of *Inferno*, Achilles actually demonstrates a remarkable ability to see the truth of the war. By critically observing the problematic underpinnings of the Trojan War, Achilles is empowered to take decisive action by actively removing himself from it.

In the midst of the all-encompassing violence of the Trojan War, Priam also takes decisive positive action in approaching Achilles. When Priam consults Hecuba about his decision to "ransom [their] dear son" (24.233), she cries out that "all [they] can do now / is sit in the halls, far from [their] son, and wail" (24.246-247). She is resigned to "fate" (24.248), but Priam still decides to go speak to Achilles. Priam appeals to Achilles' empathy by asking him to "remember [his] own father" (24.570). Priam boldly "put to [his] lips the hands of the man who killed [his] son" (24.591). This sign of radical compassion enables "both men" (24.595) to connect emotionally and give "way to grief" (24.595). This results in the sworn enemies "marveling" (24.740) at one another and "listening" (24.744) to one another's "words" (24.744). Achilles finally breaks out of the militaristic power structure, and promises to "hold [his] attack as long as [Priam] requires" (24.797) for a respectful mourning and burial process for Hector. Priam and Achilles, therefore, are both able to take decisive and action by seeing beyond militaristic binaries and relating to their enemies.

Inferno, *Cassandra,* and *The Iliad* all present characters who become empowered to take decisive action through courageous vision. The most literal interpretation of movement through vision by Dante and Virgil can illuminate the various ways in which both Cassandra, Achilles, and Priam do the

same. Most notably, empathy as a form of seeing is a powerful way of moving forward. Today, we must have the courage to see fully and confront our climate crisis, as ignoring it will only worsen the situation. We must also not only wait for our world leaders to take decisive action, but do so ourselves by protesting, applying pressure, and pushing our leaders to see the crisis. It is also by empathizing with, and seeing more fully, the many stakeholders in environmental action that we can best move forward with a solution to a deeply complex global problem.

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I LOVE ASIAN GIRLS!; ORIENTALISM THROUGH THE FEMALE ASIAN AMERICAN LENS

How does Oriental Fetishism affect how modern Asian American Women's behaviour manifests through their self-perception?

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Arts & Science 1C03: Global Challenges

My immigrant experience is not the same as these women, but I felt it in my bones. Because to be here is to be the same," laments Eileen Cheng-Yin Chow, a professor of Asian American and diaspora studies at Duke University, following the Atlanta Spa killings. On March 16, 2021, A shooter killed 8 people at 3 different massage parlors in Atlanta, Georgia, 6 of whom were Asian women (NYT, 2021). Later on, the shooter denied race as a motivating factor, but rather claimed it to be an attempt to curb his sex addiction at places that he considered 'temptations' (NYT, 2021). The suggestion that the shootings were not inherently connected to the pervasive racism towards Asian women contributes to the erasure of the racial oppression that has been prevalent since the first immigration of the 'oriental temptress' to the United States. Given the turbulent expressions of identity that orientalism submits onto Asian American Women (AAW), it is crucial to explore further how these women are affected and how this is expressed. Through my Capstone, I will utilize academic research as well as contemporary art, writing, and various forms of media to examine how the dominant Western perception of oriental fetishism has affected the modern self-perception of AAW. Through this, AAW can be centered within my analysis and provide a first-hand interpretation of how performed identity is experienced. Therefore, we can further understand how enforced intersectional identity influences the inner behaviours of those affected, and connect how those behaviours contribute to a larger conversation on what it means to define ourselves. I argue that this sexual orientalism creates dissonance from one's original culture, fragments identity, and fosters rebellion from societal racial expectations.

Definition of Orientalism and the Asian Fetish

Within our global context, I would be remiss if I did not define orientalism as it relates to this paper. Historically, the term Oriental has been used as a blanket term to describe those of Asian descent, but the term has also developed to express oppressive or racist connotations (e.g., "those orientals!") (Said, 1973). A bill spearheaded in the American House of Representatives by New York Rep. Grace Meng in 2016 amended the language in 2 US acts to strike the word 'Orientals' and replace it with 'Asian American' (The Washington Post, 2016). On this, the representative of California, Ed Royce, expressed agreement, stating that, 'Orientals' is an offensive and antiquated term (The Washington Post, 2016). The modern discussion and definition of 'Orientalism'

was first coined in the work of Edward W. Said in his 1973 book, *Orientalism,* in which he describes orientalism as a fundamental European attraction to the Orient (the Other or the East) that originated from the political, economic, and military interest in the colonial domination of Eastern Asia (Said, 1973). This hegemonic domination manifests itself in the femininization of the Orient; Said suggests a "widely influential model of the Oriental women" through the representation of French author Gustave Flaubert and an Egyptian courtesan; "She never spoke of herself, she never represented her emotions, presence, or history. *He* spoke for and represented her" (Said, 1973). In this model, the representation of the feminine orient became exotic, erotic, and sensual—always submissive to the authoritative white man. (Burney, 2012). Even though this harmful depiction of the orient has begun to widely fade out of the modern Western vocabulary, the effects and stereotyping of this sexualization are still pervasive through the lives of AAW today. Orientalism, in this paper, is understood in relation to the racial Asian fetish ('yellow fever') in the Western world, which is the race-based fixation on the Asian body and character that involves both idolization and demonization of racial difference (Zheng, 2016). As it relates to the sexual racism of AAW, I will define the term orientalism to mean 'the objectification of stereotyping of Asian culture, characteristics, and identity; viewed as exotic'. This use and discussion, although its potential derogatory linguistic understanding, is crucial to a wider conversation on the historical and contemporary perception of Asian women through the word's accurate depiction.

Roots of the Perception of Asian American Woman

The historical introduction of Asian women to America continues to shape the position of AAW in contemporary America, and thus, the enforced identity and perception of AAW and furthermore how they view themselves. Feminist philosopher Robin Zheng posits that, "Historians, sociologists, psychologists, and literary and film scholars have long documented how White America has viewed Asian/American women in an almost entirely sexual light" (Zheng, 2016), which has heavily shaped the perception of AAW. The historical roots of the external stereotyping of AAW in the western diaspora is deeply integrated through the modern oriental gaze, which affects the women who are tethered to it (Zheng, 2016). The Western world's first widespread exposure to Asian women occurred through the widespread immigration and military involvement in Far East Asian countries in the 20th century (Uchida, 1998). The first immigration of Chinese women to America from the 1870-1900s was characterized by the commodification of women's bodies. Through manipulation of immigration and labour loopholes, the women who were able to come to America were widely exploited in the sex trade (Uchida, 1998). By 1870, 60 percent of all Chinese women in California and 66 percent in San Francisco worked as prostitutes (Uchida, 1998). This culminated in the Page Act in 1875, which prevented single Chinese women and wives of U.S. residents from immigrating under the presumption that all Asian women wanted to engage in "criminal and demoralizing

acts" (Page Act, 1875). Even within the legal realm of America, AAW were pitted very early within their history as sexual objects. Thus, the early perception of Asian Women in the Western World revolved around the inherent sexualization and exploitation of the body. This same sexual exploitation can be observed through the colonial lens overseas. During World War II, American soldiers stationed in Japan often treated and viewed Japanese women "as sexual and/or relational companions: as geishas and bar girls on one hand and as perfect domestic wives on the other" (Uchida, 1998). Following the 1946 War Bride Act, which allowed soldiers to bring back Japanese women as their domestic and submissive homemakers, an influx of Japanese women immigrated to America with the sole purpose of being an imported wife. On the other side of the spectrum, the United States annex of the Philippines', post-Spanish inquisition, prompted a boom in the sex industry boom for stationed American GIs (Woan, 2008). The positioning of Asian women as prostitutes and wives through war and immigration has shaped the stereotypical perception of the erotic, exotic, pliant Oriental woman. This is still perpetuated by modern discrimination. Keum et al. (2018) conducted a study evaluating the oppression that AAW face throughout different facets of existence, such as through relationships, work, and career. It was found that AAW face profound verbal, behavioural, and environmental gendered microaggressions that deny and demean fundamental self-concept, self-presentation, and self-image (Keum et al., 2018). The areas in which these women experienced first contact with colonial society, that of labour and sexuality, persist today as fundamental areas of sexual racism.

Just as the fetishism of Asian Women has been shaped by historical contexts, an 'orientalized' sexualization is just as pervasive in major Western media. As quoted in Yale Daily News, AAW have expressed that through media, "Asian women are exorcized [sic], sometimes portrayed as more sexually potent than white women, and are almost always paired with white men on the screen" (Lang, 1992). This perpetuates the objectification (or sexualization) and degradation of Asian women in the social economy, which then translates to expectations of the role they are to play in contemporary society. Stereotypical depictions of Orientalism, like the 'dragon lady' and 'lotus blossom' caricatures, have dominated representation (Mok, 1998). We can look at the dragon lady stereotype—the exotic, dominant, and villainous seductress (Mok, 1998)—which further implicates Asian women into erotic positioning. This can be seen in the 1967 Bond Film *You Only Live Twice*, where the characters 'Aki' and 'Kissy Suzuki', the superspy sidekick 'Bond girls', are pitted as dangerous and capable, but still ultimately serve as sexualized love interests (Gilbert, 1967). More so than the generalized 'Bond girl' of any race, the women in "You Only Live Twice" uniquely experience the sexualization of their oriental features, seen as far as the naming of a main character as the flirty yet juvenile, 'Kissy'. This characterization emphasizes the exoticism within the oriental figure, but still fundamentally suggests that the Asian woman exists sexually. The lotus blossom character is quiet, submissive, and exotically mysterious; it gives way to the idea of the docile Asian woman (Mok, 1998).

The lotus blossom is prominently featured in the 1989 musical "Miss Saigon", where the main character, Kim, a prostitute, falls in love with an American soldier, who promises to save her and bring her back to America (Schönberg & Boubill, 1989). This depiction of shyness and helplessness perpetuates the vision of the easily malleable Oriental, who both desires and needs the help of the white man, whilst being inherently sexualized. This is contemporarily reflected through a study by Keum et al., which explains that gendered racial microaggressions exist as a unique risk factor for AAW's mental health, citing that, "the fetishization and exoticization of Asian women and Asian culture (i.e., "yellow fever") can be particularly destructive because it reinforces docile, foreign, and childlike stereotypes of Asian women" (Keum et al., 2018). Given this reinforced stereotype that has been perpetuated both through history and mainstream cinema, the self-perception of the AAW will be influenced by this idea of subordination, directly affecting how one interacts with others throughout their lifetime. The lack of emotional complexities within AAW represented on screen contributes to the widening issue of this dangerously presumptuous fetishization. This prevailing assigned identity perpetuates the controlling image of the 'ideal female Asian form' that both excludes and possesses the women within it (Uchida, 1998). Given the creation of a certain or idealized character of behaviour, perception of the self will be bounded to the leveling baseline expectation. Overpowering that of the Asian Female voice is the white noise of the constructed identity of the exotic, sexualized Asian woman, feeding into a digitized development of this racial fetishization. In historical contexts, both through cultural interactions and media representations have painted an eroticized image of AAW, which has had profound effects on AAW now.

Dissonance from Identity

Asian American women, in response to their fetishism, perceive themselves in dissonance from their identity. Given the expected behaviour of what the Orientalized women should be, any behaviour that is untoward the carefully constructed guideline of identity is considered unnatural, creating turbulence in the AAW perception. A study by Pyke and Johnson (2003) suggests that "[Asian American women's] descriptions of gender performances in ethnic settings were marked with self-disgust and referred to as a mere act not reflected of one's true gendered nature." AAW recognize and identify the existence of such expected behaviour, yet continue to perform them whilst feeling dissociated with their reflections of gender and race. Thus, as they continue to be trapped within certain behavioral expectations, their discontent manifests through dissonance. This is lamented through the art and media creations of AAW artist May Maylisa Cat in "glitch feminism" (see Appendix), a casing of laser-cut-out magazine clippings of the female Asian form, displayed in a glass case. Poignant, this piece displays the performative nature of the AAW being with its individual features (lips, eyes, hips) revealed on the cut pieces, separated in the clear case by, as Cat describes it, "the hostile context of sensuality and White Sexual Imperialism" (Cat, 2021). This connects back to the contextual media that contributed to the initial stereotyping

of AAW, through the use of magazine clippings. Through the lens of perception, we can see how Cat sees her Asian American female figure as disconnected, objectified components of a whole part. Put on display in a lit glass cage, the AAW isn't a genuine display of who she is, but a disconnected, editorial production of what Western society expects her to be. Thus, self-perception is highly impacted by the disconnection between true AAW and the oriental figure. There breathes intersectional dissonance between the traditional orientalized self-perception and its translation to western ideals. The Asian American woman, in the hegemonic view, is still within the foreign context. "I Love Asian Women", a poem by AAW writer Rana Chang (2000) further emphasizes her feelings of disconnect:

> You like girls fresh off the plane
> with their soft voices and thick accents
> …
> Asian American girl is harder to understand,
> She speaks perfect English and thinks you the foreigner

Although the stubborn rigidity of the Asian Fetish expects of its women an air of submissiveness and the inherent helplessness as reflected in the 'Lotus Blossom' caricature, the truth of the AAW lies in the inherent detachment of what she is supposed to be. Through this narrative prose, Chang views herself through how the fetishist views her; her self-perception is both distanced through the labelling of 'Asian' and of 'American'. This idea of intersectional disconnect is furthermore explored in AAW poet, Kai Jo, in her poem "Center" (1999). She laments about the "yellow-tinged body" and her positioning as the orientalized "model minority girlfriend / with exotic eyes and cunning ways", but most poignantly she proses that:

> Yellow-tinged child who speaks only perfect american english
> squirms at the concept of being labeled american
> She would much rather adopt asian american for her identity,
> for now… who knows?
> What her identity will entail tomorrow,
> what title will be granted, assumed, enforced

Through the racialized self-titling of "yellow-tinged", Jo assigns to herself an objectified perception of her personhood. She is unsure of her identity and where she belongs within the Western context of nationality, racially, and how this is constructed. In connection to Chang's poem, their perceptions of self are deeply interconnected with their understanding of language—and the cultural connotations of connecting more to the Western world. Jo views her identity as a 'title', moreso gifted to her than self-assigned, through the granting, assuming, and enforcing of who she should be. Through this, we see the further disconnect from self-perception; Jo is not viewing her own identity but viewing herself through the lens of what others view her as, whilst feeling conflicted by the floating titles in her life. Being perceived generally as subservient, obedient, passive, hard-working, and exotic, AAW themselves become convinced that they should behave in accordance with these stereotyped expectations. Yet, if they act accordingly, they are then criticized for doing so, becoming victims of the stereotypes imposed by others (Chow, 1989). Thus, the dissonance is created

through the rigid expectations of the oriental form, shaped by the guilt from divergence, the dissociation from the intersection of 'Asian', and 'American', and the pressures of external authority dictating identity.

Fragmentation of the self

The oriental fetish creates, within its women, a fragmentation of self-perception and how identity is performed. As a response to the looming cultural stereotypes, AAW may either lean into or stray away from the oriental expectation. This is discussed through the work of Aki Uchida, who explains that "It is not only identities that are problematic; AAW also find themselves in a double bind, caught between the pressure to become Orientalized, to conform to the expected image, and the need to reject the Orientalization and the degrading image" (Uchida, 1998). Feeling disassociated with the Asian image, the self-perception breaks in two ways: through both the embracing and the rejection of the Oriental image. Neither, however, reflects the true self, and therefore contributes to a wider breakage of the AAW self-image, that manifests itself into altered performance. This double-bind implies the directional shift within the confines of the imperialist perception of the orient; you are either the expected caricature of your identity or you are the rejection of your identity as a whole. This is wherein the fragmentation occurs. A study done by Pyke and Johnson (2003) reflects this point, citing that many second-generation Asian women distance themselves from the "racialized notions of the typical Asian woman who is hyperfeminine and submissive by claiming to possess those traits associated with white femininity." If compliancy is viewed to succumb to the behaviours of hegemonic orientalism, AAW perceptions of the self-shift to mimic and alter their performance intentionally as a means of distancing themselves from those harmful stereotypes. This, however, manifests in the performance of another pre-existing typecast; that of the post-colonially superior 'white women'. Thus, AAW do not escape the confines of a regulated identity or create their own bounds, but view themselves as fragmented into another constricted caricature. This is similarly represented with the fragmentation of the self, stuck within the 'conformist' orientalist view. A poem by Viet poet Nhien T. Nguyen (2000) titled "My Pink *Ao Dai*" laments;

> Shake their hands—no wait
> maybe I should bow,
> or is that a Japanese thing?

Lost in her performance of 'Asianness', her own Viet culture, as suggested through her 'Ao Dai', a traditional Viet dress, is lost within the wider scope of the Asian diaspora. Orientalism as a whole works to group the entirety of Asian characteristics, histories, and cultures into one conflation of identity. Through this societal need for validation, the individual value of one's own specific set of historical practices is lost through the pressure of the hegemonic whole. One's self-perception through the looming oriental coercion, then, is fragmented through the merging of all its component parts, losing its originality in the mixing pot of desired traits. More so than the inevitable shift towards a certain normative identity, however, this fragmentation also manifests itself in the rejection of both the Asian body and the mind. The poem "Corrosion" (1990) by Gisele Fong

illustrates this, distancing herself from the wider Asian stereotypes:

Immigrant, sweatshop woman,
kung fu man, laundry worker,
Chinese waiter, computer nerd.
You are not a part of me.

Inherently, however, the orientalized female figure is addressed in the closing lines of the poem;

Eyes, tongue,
leg, breast
heart
You are not a part of me.

Fong rejects the oriental expectations that have been enforced on the AAW psychology, but in the same breath, rejects her Asian form. Therein lies an interesting distinction between stereotypes of 'Chinese waiter' and 'kung fu man' which are common depictions of Asians and furthermore the body parts of the eye, tongue, and leg, which are physical manifestations of the character. There is, then, an inherent connection that Fong is making between the historical media roots of Asianness and how she rejects this orientalist view. Still, she rejects her identity as a whole, in an attempt to rid of the ills that orientalism presumes on the AAW. However, she still places her identity outside of her ownership, as she implies with 'You are not a part of me' that her body actually serves the hegemonic whole, thus discarding this identity. Therefore, her self-perception is based on the rejection of the self, a fragmentation from both the shift to alternate identities and the embracing of the oriental identity. This fragmentation, in response to the looming forces of oriental fetishism, perpetuates itself through the altered identity and perception of AAW, including the rejection, the embracing, and the shift away from the traditional oriental image.

Rebellion from the Construct; Constructing One's Own Identity

Interestingly, however, through the dissonance and fragmentation of AAW, exists the rebellion from the oriental expectation, and an embracement of self-perceived intersectional social identity. Just as the amalgamation of Asian American identity can cause fragmentation of one's own unique self-perception, feminist scholar Lisa Lowe argues that the distinction of a heterogeneous Asian American group "does not weaken us as a group; to a contrary, these differences represent greater political opportunity to affiliate with other groups whose cohesions may be based on other valences of oppression" (Lowe, 1991). Lowe here, then suggests that the oriental pressure to categorize AAW through one specific identity can also be unifying in terms of creating and fighting for social change. Given that AAW perceive themselves in relation to each other, certain solidarity can be extracted and manifested through the creation of a collective, self-made, and self-serving AAW identity. The oriental fetishism of Asian women provides a basis through which one can create an alternate, sincere depiction and perception of the self. Much of the photography by Hanh Thi Pham, a Viet American artist, reflects this idea of the rebellion from set Oriental identity. One of her most popular installations, titled *Khong La Nguoi O* (1991-92) (see Appendix), placed in a collaged backdrop of Viet newspaper, poetry, and handwriting, features a flexed and exposed Pham, flexing in an act of defiance to a crossed-out and upside-down image of

Buffalo Bill, a prominent American 'hero'. In defiance to the American perception, Pham is presenting a contradiction of the weak, submissive, and feminine sexual archetype—short-haired, strong, stoic—but still undoubtedly feminine in her exposed breast. On this, Hanh also expresses that, "[I]n the picture, I no longer want to be a servant of the system, and I can be my own self. I'm a lesbian. I'm very proud of myself as a woman. I'm very proud of my body, the muscles of my body, and my intentions as a person. [This is] my empowerment, given to me by myself" (Kim, 1996). In response to orientalism, then, Hanh is creating a self-perception empowered by what it means to both embrace Asian culture and also one's own personal reflection of femininity. It is also notable to explore how her expression of media could be interpreted as a reactionary response to Orientalism, and thus still dictated by constructed stereotypes, but ultimately, this perception is still solely dictated through the self. Therefore, in response to orientalism, is born the self-perceived self-identity. In the end, rebellion from the orientalizing gaze is to redefine what being AAW means to the woman herself. Misuye Yamada's poem "Mirror, Mirror" (1976) reflects this idea concisely;

> Trouble is I'm american on the inside
> and oriental on the outside
>
> Turn that outside in
> THIS is what American looks like

The idea of a separated identity of the American and the Oriental is destroyed by Yamada; she is neither solely the foreign oriental image nor the American that exists through culture and integration. She is a separate vision of the Asian American woman, and she is secure in this fact. As discussed previously through the idea of dissonance, self-perception of AAW commonly lies in turbulence between what it means to be orientalized and what it means to be American. We saw this echoed earlier in our exploration of fragmentation and Uchida's study on the 'double-bind' of identity. Yamada declares that she perceives herself as American despite *and* because of the fact that she experiences the unique intersection between Asian and American. Again, through the pressures of orientalism, AAW express their adamance for their own self-determination. Thus, through the culmination of orientalism and what this perpetuates through the contemporary AAW self-understanding, the perception of identity is reclaimed through the AAW voice, and specifically, media.

Concluding Thoughts

Throughout the American Asian diaspora, the female figure is inherently connected through the prevailing forces of orientalism.[A1] Orientalism, through its enforcement of racialized traits of submissiveness, exoticness, and otherness, has created the rigid bounds of identity that are imposed on AAW. Perpetuated by historical and media representations, AAW have similarly taken to modern forms of media as an outlet to express how these generational presumptions have impacted their self-image, self-worth, and self-identity. As a response to this Asian fetishism, AAW experience an inherent dissonance from their identity, feeling both trapped and inadequate within the desired bounds of behaviour and their intersectional American existence.

This results in the fragmentation of identity, which manifests in the shifted perception of the self through the rejection or acceptance of orientalism. This ultimately culminates in the rebellion of confined identity as a whole—the creation of a self-owned AAW identity. Through the centering of genuine AAW voices, however, perhaps conversation of identity and the longstanding factors of orientalism, and thus, power, can be returned to the 'Orients', themselves. [A2]

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Appendix

This appendix consists of the visual figures of the art and media discussed in the paper.

Figure 1. May Maylisa Cat, "Glitch Feminism." From Cat, 2021.

Figure 2. Hanh Thi Pham, "Misbegotten No More." From Kim, 1996, pg. 583

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM) IS FOR EVERYONE, ESPECIALLY WOMEN:
Analyzing the Responses to the Marginalization of Women in STEM Fields

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Arts & Science 1C03: Global Challenges

Historically, it has been commonly perceived that an education in science, technology, engineering and mathematics (STEM) is better suited to men than women, but as they say, "with time comes change", or does it? Women have fought for their rightful place in STEM, but even if some systemic barriers have been eliminated, there are still many persisting obstacles. In this paper, I will examine the marginalization of women in STEM, with attention to how this issue presents itself in North America, and I will explore proposed responses to this injustice to analyze their efficacy. By providing an in-depth background of the current and historical oppression of women, and the intersectionality of women in STEM, I will examine the contributing factors that are used to disadvantage them. This will all be done with the purpose of scrutinizing the suggested responses that fail to address this global challenge effectively.

STEM refers to the science, technology, engineering and mathematics fields. This includes the natural, life, and physical sciences, technology-related disciplines, all engineering types, and any field that heavily relies on mathematical principles (Muniz, 2021). Many occupations heavily rely on the innovations made through STEM fields, as these disciplines establish the foundation required for developing advancements in their workforce (Muniz, 2021). With the help of a STEM education, the STEM disciplines provide creative solutions to combat ongoing world issues. Most well-known contributors in the STEM field are men, including Galileo, Isaac Newton, Albert Einstein, and Charles Darwin. Very few women have been acknowledged for their efforts, and if they were, they were subject to a disproportionate amount of negative criticism.

Throughout history, women in North America have faced many repercussions when pursuing an education, especially in a male-dominated field such as STEM. In the late 1700s and early 1800s, it was not expected or desired for women from middle-class families to work outside their homes (Rossiter, 1984, pp. xvi-2). Until the 1820s, women in America were prohibited from seeking an education at the secondary level and above as it was socially unacceptable and because of antifeminist views (Rossiter, 1984, p. 1). Such views upheld the notion that women were inferior to men, and they ensured that women's freedoms were highly limited (Rossiter, 1984, p. 101). Throughout the 1870s and 1880s, there was a movement that permitted women to receive higher education (Rossiter, 1984, p. 52). Though it may seem like this was done to support and advance women in diverse career opportunities, it had more to do with the assumption that higher education would "produce" better mothers and wives; well-educated women would be well equipped to help their sons with schoolwork (Rossiter, 1984, p. 1). It was not

until the 1910s that a suffragist[1] movement granted women the right to an education (Rossiter, 1984, p. 101). These ideologies helped establish the idea of gender equality instead of the adherence to gender stereotypes: for instance, the thought that women were suited for housework while men were the breadwinners for the household. These stereotypes will be explored in-depth later on in this paper. By the 1920s, North American women had experienced a consecutive series of political and social movements, including the suffragist movement, the First World War, and national and state held campaigns and rallies, that allowed them to attain higher degrees and entry to positions in STEM (Rossiter, 1984, pp. 122-128).

Despite the advancement of female representation in STEM, it was challenging for women to make progress in their careers because of the continued bigotry they faced within the field. Among them was Rosalind Franklin and her discovery of Photograph 51[2]. Though Franklin was the first person to have identified the helical structure of DNA, she was not given credit, which was a common experience shared by female scientists had as a result of gender-based oppression (Elkin, 2003, p. 42). Her partner, Maurice Wilkins, merely thought of Franklin as his assistant, and brought her work to the attention of James Watson and Francis Crick without her consent (Elkin, 2003, p. 42). Watson and Crick published Franklin's findings as their own, not once recognizing her efforts (Elkin, 2003, p. 42). In 1962, Wilkins, Watson and Crick even received the honour of a Nobel Prize for "their" discovery of the DNA structure. Finally, in 1962, Franklin was posthumously acknowledged for her findings when Watson and Crick cursorily mentioned Photograph 51, and its role in the discovery (Hernandez, 2019). According to Dr. Margaret Rossiter (1984), a professor emerita at Cornell University, "outstanding women [in the early 1900s] frequently held lowly titles and were recognized only belatedly, as in their obituaries, decades after their achievements" (p. xvi), as can be seen with Franklin.

Though plenty of progress has been made to advance women in STEM since the movements in the 1800s and 1900s, unfortunately, women pursuing STEM careers continue to face discrimination today, ultimately plateauing the considerable progress. For example, according to Sterling et al. (2020), "of 559 engineering and computer science students that graduated from over two dozen institutions in the United States between 2015 and 2017...women earn[ed] less than men...between 82 and 87% of what men made" (p. 1). Although, women in America have made up more than half of the bachelor's and master's degree recipients and have been awarded one-third of all doctorates since 1979, in 2012, almost 86% of the high-ranking positions in universities, including chancellors, provosts and presidents in the United States were male (Parker, 2015, p. 9). Even the full-time professor positions were 75% dominated by males, while females made up most of the part-time and temporary positions (Parker, 2015, p. 9). Concerning STEM academia specifically, fewer women obtain bachelor's degrees in the STEM fields

1 Suffragism - "appealed to the far broader political and social spectrum of middle class women" and "had the narrower goal of winning the vote for women (rather than changing their lifestyles and much of society)" (Rossiter, 1984, p.101)
2 Photograph 51, or otherwise known as Photo 51, was the first image of DNA that revealed the three-dimensional structure of DNA (Hernandez, 2019)

because they are initially less likely to join STEM, and if they do pick a STEM major, they are more prone to dropping it before graduating (Griffith, 2010, p. 911). This is because they are met with unequal standards and expectations before and after entering the field, which will be further explored later in the paper.

In order to thoroughly analyze the proposed responses to the marginalization of women in STEM, it is essential to understand the key factors that contribute to this discrimination. To do so, we must analyze how the problem—underrepresentation, lack of recognition, and unequal pay and status of women in STEM —arose in the first place. In the 1800s, as women began to receive the right to education, there was a growing uneasiness among North American men that educated women would develop radical social and political behaviours (Parker, 2015, p. 3; Rossiter, 1984, p. 2). They also worried that educated women would take over men's activities and jobs (Rossiter, 1984, p. 2). Moreover, in predominantly Judeo-Christian North American societies, many supposed that educating women would deteriorate their health and their ability to have children, which would therefore violate God's will (Rossiter, 1984, p. 2). These mindsets were established through various agents of socialization[3] that continue to exist in the present day. From a very young age, boys and girls are raised distinctly based on perceived gender characteristics. According to Dr. Patsy Parker (2015), girls from a young age are more likely to spend time on tasks and duties like learning how to raise children for the future and being supportive, doting wives, not once prioritizing their careers (pp. 4-5). These constructed differences have even influenced the toys categorized for boys and girls that play a role in the developmental stages to build skills needed for an education in STEM. Specifically, girls' toys are designed to prioritize nurturance, domestics, and physical attractiveness (Blakemore & Centers, 2005, p. 619). According to a research study conducted by Blakemore and Centers (2005), "the toys rated as most likely to be educational and to develop children's physical, cognitive, artistic...skills were typically rated as...moderately masculine" (p. 619). Skills such as problem solving, critical thinking, creativity, and adaptability are often beneficial for those who plan to pursue higher education, especially in STEM. Resiliency is a key trait pertaining to hegemonic masculinity[4], the term that corresponds to the views society regards as the most dominant and important to being male (Shumka et al., 2017). Resiliency benefits those in STEM as it is often needed for one to adapt and use problem solving skills to persevere and innovate new ideas. The interconnecting factors of biases, gender norms, and hegemonic masculinity that once caused the issue to formulate are still being reinforced from a young age causing the problem to persist.

A recent study conducted by O'Connell and McKinnon recruited participants from various STEM disciplines that self-identified as a 'woman in STEM' to discuss their experiences in the field (2021, p. 3). According to O'Connell and McKinnon (2021), another

3 Agents of socialization include family, peer groups, religion, media, legal systems, economic systems, language and penal systems, and are able to influence an individual's social norms (Lumen Learning, n.d.).

4 Hegemonic masculinity also includes emotional stoicism, physical strenght, fatherhood, and hetero-sexual desire and potency (Shumka et al., 2017)

factor that limits the participation of women in STEM is that they are often met with unequal standards and expectations, as well as hostile environments (p. 1). Women in STEM are often expected to act like a man while staying true to their femininity (O'Connell & McKinnon, 2021, p. 4). They are also required to be a "superwoman": since it is uncommon for women to join STEM, those who do are expected to bring forth brilliant solutions because of the perception that women need to prove themselves in the field (O'Connell & McKinnon, 2021, p. 4). As a result, these persisting barriers prevent women from deciding to enter the STEM field. In O'Connell and McKinnon's study (2021), participants pointed out that as women in STEM, it was an expectation that they deliver better innovations, but if they acted too traditionally masculine or possessed more authority than men, they were frowned upon (p. 4). The authors also found that confidence[5] levels play a role in a woman's decision to enter the STEM field (O'Connell & McKinnon, 2021, p. 4). A participant in the study explained that her "confidence has been undermined throughout the whole process. And it's really hard for [her] to stand up for [herself], and to think that [she's] good at what [she] does, and that it's worthwhile, because [she's] never really been told that…" (O'Connell & McKinnon, 2021, p. 4).

Factors such as women's credibility[6] being routinely called into question and the isolation women face in male-dominated workplaces have played a crucial role in the lack of women pursuing a career in STEM. For example, the common belief that certain activities, like math and physics, are suitable only for boys ultimately diminishes a woman's feelings of credibility and confidence, and their sense of belonging to the field. Additionally, women in STEM are often assigned undemanding tasks implying that they are not on par with men (O'Connell & McKinnon, 2021, p. 5). As such, the STEM field can become less appealing. Since men make up the majority of the STEM community, women who enter these disciplines often feel excluded. For instance, because of the emotional stoicism most men uphold, women who show their emotions feel alienated, unrelatable, and ultimately isolated (O'Connell & McKinnon, 2021, p. 5). The lack of representation prevents women from feeling as if they belong in STEM disciplines.

On the other hand, Dr. Parker (2015) asserts that women self-impose such low representation in STEM by favouring female-dominated professions that tend toward nurturing, such as nursing, social work and teaching (p. 4). She also mentions that the lower representation of women in STEM is because many women are not as career-oriented as men (Parker, 2015, p. 5). A woman's responsibility, she says, includes childbearing and domestic duties that conclusively prevent their advancement in careers (Parker, 2015, p. 5). However, women not wanting to enter the STEM field is not as isolated a choice as Parker claims. It can also be a result of serious contributors that violate their human rights and infringe on their decision to enter the STEM field. Some of the discrimination experienced by women would be classified as gender-based violence[7]. Many women in

5 One's personal belief on their ability to achieve is brought on by external cues (O'Connell & McKinnon, 2021, p.4)

6 The expectation of diminished or different abilities and interests (O'Connell & McKinnon, 2021, p.4)

7 Gender-based violence is the "violence against women...likely to result in, physical, sexual or py-

STEM have bravely opened up about being objectified and being victims of harassment. In O'Connell and McKinnon's study (2021), a participant explains that a man "was making overtures toward [her] and was talking about subjects that were just not appropriate at all" (p. 5). Even another study conducted by RTI International identified that out of 40 surveyed female faculty members, every one of them had at least one encounter of sexual harassment in their workplace since joining the STEM field (WUNC, 2018). Experiences of sexual harassment can leave a tremendous amount of psychological trauma because they have the power to "transfor[m] women into victims and chang[e] their lives…[such that they] can never feel quite as invulnerable" (Paludi, 1990, p. 73). Additionally, perhaps the lack of mentorship provided to women in STEM, and the burden of being the first to lead other women may dissuade other women from joining STEM as well. In O'Connell and McKinnon's study (2021), the participating women use terms to discourage others based on their demoralizing experiences – "'when I was applying to schools…there were only four female professors listed on the website… part of me was disappointed, but part of me was also like, maybe I don't do this, this isn't what I think women do?'" (p. 7) – ultimately attenuating representation.

Thus far, most of the discriminatory experiences in STEM I have presented have been incidents correlated with the monolithic term "women." There is no indication if the term ''women'' refers to all women, privileged women, or women of minorities. However, based on the historical analysis, since most of the bigotry was directed towards privileged White women, how did experiences differ for marginalized women, such as those of colour, with disabilities, identifying as part of the LGBTQ+ community, from lower socioeconomic classes and any other minority? For the purposes of this paper, I will refer to all marginalized women as MW. However, the very lack of material on this topic speaks to the oppression these women face. Very few scholarly articles have investigated the intersectionality of women in STEM. In 2016, in the United States of America, only around one-fourth of professors in the top-ranked STEM departments were women, yet, of these women, around 6% identified as MW (Stockard et al., 2021, p. 1). Studies conducted in Canada found that even though the same number of Black and Latino students as White students entered STEM programs, the underrepresented minorities were twice more likely to leave their major when compared to White students due to the marginalization and ostracization they experienced (Prymak, 2021, p. 6). Researchers refer to marginalized women's experiences as a "double jeopardy" since they experience both discrimination for being women and for identifying part of underrepresented minorities (Prymak, 2021, p. 7). For example, according to Prymak (2021), racialized women encountered higher rates of assault and harassment because of their race and gender, causing them to feel unsafe in their work environments (p. 7). MW must also deal with a concept called "tug of war" and segregation. "Tug of war" refers instances when women distance themselves from other women and enter into competition because they do not view each other as allies (Prymak, 2021, p. 8). Additionally, marginalized women face social segregation from both men within the STEM field and privileged women since they too make up a majority amongst women in STEM (Prymak,

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schological harm or suffering to women" (Iyanda et al., 2021)

2021, p. 8).

One common argument often brought up by those who oppose gender equity in STEM is that women do not benefit the field; they question if there are any valid reasons as to why they should be represented in STEM. Usually, this is opposed by stating that women help bring a wide variety of perspectives that bring innovative effective solutions (Nielsen et al., 2017, p. 1740). But to say that women must bring forth a different perspective would be stereotyping them as "superwomen," which is ultimately discriminatory. Based on a National Science Foundation-funded workshop held at Stanford University in 2016, Nielsen et al. (2017) mentions that women are still capable of contributing the same amount as their male colleagues, meaning that there should not be a bias against them (p. 1740). Kirkup Keller's (1992) book *Inventing Women - Science, Technology And Gender*, states:

> We need feminists in the presently existing science for many reasons: to blow the whistle from within the science on the failures of scientists to adhere to their often-expressed principles of impartiality, disinterest, value-neutrality; to draw into these agendas 'pre-feminists' in the sciences (male and female) who are open to such criticisms; to gain for women access to the status and authority such positions bring; to explain for women what we need to know about the regularities and underlying casual tendencies of nature and social life; to generate, within equal opportunity justifications, scientific projects that are [specific] to women's interests. (pp. 71-72)

Therefore, an increased representation of women in STEM can help alleviate the existing sexism within the field such that women face the same expectations and do not have additional expectational barriers.

As we can see, the underrepresentation of women in STEM is a complex issue, with many elements contributing to its persistence. In order to come up with effective solutions, we must respond to the biases and double standards created by gender roles and hegemonic masculinity, as well as the unreasonable expectations placed on women in STEM that undermine their confidence levels and sense of credibility, contributing to isolation and segregation in the workplace. We must also address sexual harassment, and the lack of MW representation in STEM. These interrelating factors allow the issue to persist, ultimately preventing women from entering and thriving in STEM. Though some researchers and activists have committed themselves to contending with the issue, most of the suggested responses are limited insofar as they do not consider all the pieces that play a role in marginalizing women in STEM. To begin, according to Reinking and Martin (2018), "STEM movements" have been classified as a response to combat the underrepresentation (p. 150). The "STEM movements" ideology of response suggests that if women who have been working in the STEM field engage girls in exciting activities that pertain to STEM, they become positive role models, and influence the next generation of women to choose a STEM career. This will make them feel less isolated within the disciplines. Girls Inc. is one of the many organizations that aim to motivate girls by engaging them in hands-on activities that stimulate growth in the skills required for STEM (Reinking & Martin, 2018, p. 151). Girls Inc. also has a designated team

that offers to support diversity, inclusion and equity (Girls Inc., n.d.). Though this might seem like a feasible response in terms of boosting girls' morale and self-worth by enhancing their confidence levels, changing gender roles and norms, and bringing in more MW representation, does not account for other factors such as the unequal expectations and double standards placed on women in the STEM field and the sexual harassment that they may experience. Engaging girls in activities related to STEM and getting them interested does not remedy the fact that they are still held to societal biases that deem them inferior, subjecting them to men's hegemonic masculinity in a male-dominated field.

Another response to the issue has been to combat the stereotyping of toys. Lego has pushed to advertise its toys—which have helped boys develop skills required for STEM—towards girls (Blakemore & Centers, 2005, p. 619; Reinking & Martin, 2018, p. 151). Even new brands, such as GoldieBlox, were created with the purpose of developing girls' STEM skills from a young age (Reinking & Martin, 2018, p. 151). Through this progressive change, stereotypes that establish a dichotomy between girls and boys are weakened. Girls are encouraged to challenge themselves with tasks that have traditionally been considered masculine which provides them with the same advantage afforded to boys; this helps them develop physical, cognitive, and creative skills required for the STEM field. This response to the issue rectifies some elements of the gender roles, biases, lack of confidence levels, and credibility that play a role in the issue. Though some elements of hegemonic masculinity are addressed through this idea, it does not respond to the notion of emotional stoicism that causes women to feel segregated from the majority of men in the field. It also fails to address double standards and protection from harassment. Furthermore, it does not guarantee MW participation. Brands, such as Lego, are often too expensive for lower socioeconomic class families to afford, especially when money is limited and required for the necessities (Capriola, 2019). In addition to the unaffordability, not all brands have progressed to manufacture toys for girls that develop skills needed for STEM. Even if boys are unable to afford branded toys, they still have alternatives, whereas girls do not. In that case, this response does not provide an equitable opportunity for all girls, reducing its potential as an effective response to the issue.

Apart from the suggested responses mentioned above, Reinking and Martin (2018) also proclaim that teachers in elementary and high schools can encourage girls to participate in STEM to ultimately "solve" the problem of underrepresentation (p. 151). To do so, they explain that teachers can expose girls to a variety of STEM concepts by engaging them in enticing activities, allowing them to participate in STEM subjects, and ensuring that they feel validated. Teachers can also introduce them to women who are currently thriving in STEM as role models (Reinking & Martin, 2018, p. 151). Although this strategy disputes the current biases and gender roles for girls, and boosts their sense of credibility and confidence levels, it does not touch upon other factors such as the emotional and physical struggles and harassment women are currently facing in the field because of hegemonic masculinity, and the double standards and expectations they are held to. Moreover, how can it be ensured that the teachers are not hurting the chances of girls that identify as MW, such that girls of higher

economic status are benefitted? According to Chiu et al. (2013), "interfering dynamics often arise as teachers and students interact. Examples include...stereotypical thinking and judgmental bias" (p. 1). Additionally, this response does not account for schools that may not have the capacity to facilitate activities due to the lack of resources and discriminates against the students that may come from low socio-economic status households (SES). Several research studies have indicated that children from low-SES families and communities have a slower rate of developing academic skills than children from high-SES (Paul Glewwe, 2002). Therefore, adding to the pre-existing discrimination MW face in schools, teachers may hold implicit biases against children from low-SES, which could heighten the marginalization.

So far, the so-called solutions have aimed to attract more women to join STEM but none of the responses have guaranteed that the women will stay in the field. However, educational institutions that offer STEM education have implemented responses that can keep women in STEM while still inspiring the future generation of women to advance their careers in associated fields. For example, the University of Waterloo, a renowned Canadian university known for its engineering and mathematics degrees, has established a support group known as Women in Engineering (WiE). WiE is dedicated to aiding the needs of their current female students regardless of background and sexual identity (University of Waterloo, n.d.). They also engage the next generation of women in inspiring activities to encourage them to join the engineering field (University of Waterloo, n.d.). This provides a support system in pursuing the degree. It emphasizes straying away from the current biases, gender roles, and getting rid of any existing hegemonic masculinity by enabling men to join the support group to help their female classmates. It even helps men to understand the struggles their female classmates go through that they may have gone unnoticed before. It also aims to boost confidence levels, include MW representation, suppress feelings of isolation and the need to live up to double standards and expectations, while making sure to protest any form of harassment and to include MW representation. University of Waterloo offers similar programs for women in mathematics, women in technology, and women in science. Out of the responses mentioned, WiE proves to be the most practical since it touches upon many of the contributors that result in the underrepresentation of women in STEM, and it provides support to all women in every aspect of the STEM field. Alas, it only benefits those attending the University of Waterloo, and not the whole STEM female population in North America or the workplace they join in the future.

After examining the literature in this paper, it is evident that there is an urgent need for women's participation in STEM to increase and to ensure that they are motivated to stay in the field. The current representation is limited, and if there are no solutions that set out to solve all elements of the issue, then the considerable progress that has been made will continue to plateau. Thus far, the suggested "solutions" to the issue have focused on repressing only one or two factors that contribute to the problem when there are indeed several contributors that cause the problem to persist, ultimately reducing the efficacy of these "solutions". Though complex and challenging, if the existing solutions are altered to address all layers that add to the marginalization of women in

STEM, including the biases, gender norms, hegemonic masculinity, double standards, unreasonable expectations, undermining of confidence levels and credibility, feelings of isolation, the violation of women's rights, and the lack of MW representation, then maybe we can reach an effective solution. Moreover, there may not be a single solution; instead, a mix of multiple strategies might prove effective in the long run. Keeping this in mind, hopefully and shortly, the current existing strategies will be built upon, and new innovations will be made to tackle the social barriers that dissuade women from entering and flourishing within STEM fields.

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THE EFFECTS OF URBAN SPRAWL ON POVERTY IN THE CITY FROM WHICH IT EMANATES

Ben Hemsworth

Arts & Science 1C03: Global Challenges

The Origins of Urban Sprawl

Urban sprawl is defined as the expansion of cities beyond their previous boundaries into the surrounding countryside. Sprawl can be characterized by the construction of any style of building outside the city boundary but is most often the construction of low-density, single family homes in large developments. Urban sprawl generally takes one of three forms: low-density clustered housing; planned, higher-density residential housing mixed with commercial districts; and individually built, spatially detached houses (Nechyba & Walsh, 2004). Since both planned development and individual house creation generally do not have substantial negative effects on poverty, I will be defining urban sprawl exclusively by the construction of low-density, clustered housing (Nechyba & Walsh, 2004).

In sprawl-scholarship, there is a broad range of opinions on the phenomenon's problems and merits. Most scholars are generally critical of urban sprawl, offering many ways by which it negatively affects society and the planet. Criticisms include urban sprawl's propensity to contribute to climate change through its creation of larger distances between cities and greater commute times, destruction of nature in its expansion, inefficient use of land (Johnson, 2001); its increasing of childhood obesity rates due to its ensuing developments' lack of adequate access to parks, bike trails, and other physical activity settings (Ewing et al., 2006); and its creation, concentration, and aggravation of poverty in the urban core from which it expands (Powell, 1999).

Following this criticism, I developed my research question: "how does urban sprawl affect poverty in the city from which it emanates?" In my research, I discovered that poverty is worsened by urban sprawl and found that there are three mechanisms by which this occurs. First, urban sprawl creates excessively large distances between inner-city residence clusters and jobs which increases inner-city unemployment and poverty. Second, the ensuing concentration of poverty in the urban core then leads to further increases in poverty through a variety of self-reinforcing factors. Third, urban sprawl segregates residents by race, such as by restricting Black residents to residency in the inner city, which leads to other poverty-reinforcing issues such as weakened local tax bases and the underfunding of schools.

In the creations of today's major North American cities, we may find the mechanisms that currently drive their sprawl. In the late 1700s and early 1800s, the percentage of the American population living in rural areas was

nearly 100% (Nechyba and Walsh, 2004, p. 179). Then from the 1840s onward, the urban-dwelling population increased exponentially. This trend of city expansion was driven, in part, by the advent of the industrial revolution (Nechyba and Walsh, 2004). In its creation of more efficient production methods, the industrial revolution created businesses that employed large masses of workers in single locations (Hanlon, 2019). Naturally, workers opted to live close to their places of employment which created areas with unprecedented levels of population density (Nechyba and Walsh, 2004). These areas then expanded outward in low-density housing developments and became today's cities.

The second wave of growth (sprawl) was driven primarily by "the advent of the automobile and accompanying lower transportation costs" (Nechyba and Walsh, 2004, p. 181). Because workers could now live further from their workplaces, previously undesirable housing on the outskirts of cities suddenly became desirable and so, following the large increase in the rate of automobile ownership throughout the early-to-mid 1900s (Nechyba and Walsh, 2004), the demand for housing distanced from the urban center increased. This factor worked with the massive increase in population from the post-WWII baby boom to further increase demand for housing, particularly that which was oriented towards the family unit (Mankiw and Weil, 1988).

The same mechanisms which created cities drive urban sprawl. Population increase, which occurs substantially through immigration as well as birth, causes inner-city crowding. This, together with a lack of adequate, affordable, or appealing housing, directs people to live outside city centres (Karakayaci, 2016). Decreasing transportation costs make it easier to live further from workplaces. This, in confluence with comparably affordable housing in the suburbs, drives those with access to such transportation out of the inner city (Brueckner, 2000; Karakayaci, 2016). Furthermore, as suburbs develop, new areas of job concentration form nearby, furthering the process of sprawl and creating new settlements, tertiary to the original urban core (Nechyba and Walsh, 2004). As suburban residents' wealth increases, they also gain an appetite for larger lots. To satisfy this, they must travel even further outside the urban core (Brueckner, 2000). Many arguments against urban sprawl attack its uncontrollable nature.

Spatial Mismatch

The primary process by which urban sprawl exacerbates poverty in the inner city and the precondition to all other contributing processes is *spatial mismatch*. In 1968, John Kain coined the term in his Spatial Mismatch Hypothesis which says that as white middle-class workers flee to the suburbs and those suburbs develop, Black workers left in the central cities grow increasingly distant from the major centres of employment, creating a problematic distance between locations of concentrated labour force and locations of labour centres and low-skill jobs (Ewing et al., 2016; Kain, 1992). Since its publication, the hypothesis has been tested in several studies, most of which support it (Holzer, 1991; Ihlanfeldt & Sjoquist, 1998; Kain, 1992; Kasarda, 1989). They found the

concentration of jobs indeed increased in the suburbs while decreasing in the inner city and that this was a contributor to adverse labour market outcomes for Black inner-city residents. Many scholars take minor issue with the specificity of the hypothesis and instead refer to the alienation of Black inner-city residents from all adequate jobs, rather than only low-skill jobs. This is the definition I will be using in this paper.

This spatial mismatch of inner-city workers and employers is incited by the relocation of jobs from the inner-city to the suburbs. There are many posited reasons for this relocation but most seem to follow from two assumptions: first, that jobs follow people out of the inner city (sprawl), and second, that jobs are pushed out by other factors. These other factors include abundance of competition in city centres, rising land prices, congestion, crime, more affordable land prices in suburbs, and the large pool of consumers who are now distant from the former central business district (Nechyba & Walsh, 2004; Gobillon et al., 2007).

When jobs are relocated to the suburbs, primarily Black low-income inner-city residents are alienated from adequate jobs due to the requirement of car ownership to commute (Cutler et al., 1997). Since the distances sprawl creates between workplaces and residents typically necessitate a car to traverse, and since there is rarely public transit connecting the inner-city to suburban job centres (Powell, 1999), low-income people living in the inner city without cars are unable to acquire jobs in suburban labour centres. They are thus relegated to the inner-city in their search for employment (Ewing et al., 2016; Powell, 1999). Moreover, the larger distance from jobs makes it more difficult for inner-city residents to hear about offered jobs, find jobs in the unfamiliar suburbs, or afford the higher cost of commuting to job locations to apply. It is also possible that suburban employers discriminate against applicants based on stigma surrounding their residential location (redlining) or based on their perceived lower productivity levels due to added fatigue from their commutes (Gobillon et al., 2007).

This distance from employment centres leads to higher unemployment rates in the inner city and thus higher poverty rates (Massey & Fischer, 2000). So, as sprawl shifts the central locations of job concentration to the suburbs, inner-city residents who already experience poverty at higher rates are then given fewer job opportunities (Gobillon et al., 2007). Martin shows that between 1980 and 1990, Black unemployment increased in the centres of cities whose jobs had moved to the suburbs. Weinberg shows that as job concentration is decentralized, there is a reduction in Black-white employment differential. This residential segregation then leads to the creation of a concentration of poverty in the urban centre which has a cascade effect on all other contributing factors to poverty, deepening the issue and leading to further residential polarization (Powell, 1999; Orfield, 1998). Spatial mismatch is the propulsion for all such mechanisms and so it greatly contributes to poverty creation in the urban core.

Income Segregation

Ensuing from spatial mismatch is a central concentration of poverty and a

surrounding ring of middle-class households and job centres. This relationship is described by Talen et al.: “as cities spread out, they become increasingly segregated by income” (Talen et al., 2018, p. 1). Concentrated poverty is the impetus for many other issues that not only directly worsen the lives of the inner-city residents but also exacerbate their levels of poverty. The struggle to escape concentrated poverty is especially challenging given its tendency to gain momentum as it worsens. According to Orfield, this is named “the increasing momentum of polarization” and is noted to be rarely overcome without extensive governmental intervention. After creating spatial mismatch and concentrated poverty, sprawl then intensifies poverty in the urban core through a variety of mechanisms which each function by income segregation.

First, with a reduced and mainly low-income population, the city has a weaker tax base and thus less funding for locally-funded services. The city’s ability to replace ageing and decaying infrastructure is then greatly diminished. Decaying infrastructure contributes to the former issue of middle-class residents fleeing for newer developments but also discourages employers from conducting business in the inner city (Reardon & Bischoff, 2018). The city is also less able to build new transportation infrastructure that might attract new residents and businesses or connect inner-city residents more easily to suburbs. Such investment in infrastructure is shown to typically increase employment rates in cities (Schwartz et al., 2009). Funding for inner-city schools is also greatly reduced. The underfunding of education and other locally-funded institutions that serve children tends to perpetuate the intergenerational transfer of occupational status, meaning properly funded education is crucial to intergenerational increase in upward mobility (Reardon & Bischoff, 2018). These factors, brought about by concentrated poverty, compile and combine to further concentrate it.

Second, as poverty concentrates in the inner city, crime rates increase (Mehlum et al., 2005). More crime then leads to further increases in poverty rates and disruption of economic growth. This places municipalities in a “crime induced poverty trap”: a deeply disordered, economically-sunken, crime-ridden state from which it is difficult to escape (Mehlum et al., 2005). Criminal theft, among other crimes and social disruptions, significantly harms economic growth (Mehlum et al., 2005). Two reasons for this are posited by Fafchamps and Minten. First, crime, especially theft, discourages the conduction of business in the inner city. Businesses then move to the suburbs, following the relocation of labour concentration. Second, as criminals find it easier to elude detection among large groups of other criminals, the inner city becomes an attractive location for crime. More crime then drives more businesses to the suburbs (Fafchamps & Minten, 2006). These explanations are corroborated by the finding that economic growth slows or reverses when crime rates increase (Fajnzylber et al., 2000).

Third, as crime and other disruptions proliferated by poverty increase in intensity, remaining white middle-class residents continue to flee to the suburbs. As Ewing et al. note, residential areas with residents of mixed-income levels tend to have higher levels of upward mobility and thus lower poverty rates. Therefore, the exodus of middle-class

residents leads to an unmixed residential area and thus an increase in poverty in the remaining population. This also increases the number of disruptive issues in the inner city, such as crime and underfunding of public education (Powell, 1999). Moreover, with an increased demand for suburban housing, more housing is built outside the city boundary so more sprawl occurs. Here, we see Orfield's theory of increasing momentum of polarization demonstrated. Poverty gains momentum in its worsening until the wealth of its victims has become irreducibly low.

When poverty rates and suburban housing volumes increase, so does the speed of the increase of the inner city's poverty concentration. This also leads to other issues, such as weakened tax bases, increased crime rate, and residual middle-class flight, which then further exacerbate poverty. In sprawl's removal of white middle-class residents from the inner city, it segregates its remaining low-income residents and then further impoverishes them. For these reasons, Powell states that "concentrated poverty is both a substantial cause and product of sprawl" (p. 6). It should be noted, however, that concentrated poverty is neither the only cause nor product of sprawl and that sprawl is not the only cause of concentrated poverty.

Racial Segregation

Another mechanism by which urban sprawl contributes to poverty in the inner city is through racial segregation. In brief, sprawl increases the segregation of Black people and other people of colour to the inner city as white people move to the suburbs (Nelson et al., 2004b). This racial segregation then increases the level of poverty in the inner city (Massey and Fischer, 2000). As Powell succinctly puts it, "concentrated poverty can be equated with racialized space at the urban core because these isolated low-income populations are also disproportionately populations of colour" (Powell, 1999, p. 6). In this regard, it seems that the remaining residents are doubly bound to the inner city. They are segregated to the inner city due to their low income and inability to move to the suburbs (Ewing et al., 2018; Nelson et al., 2004a) and simultaneously pulled deeper into concentrated poverty by racial segregation (Massey and Fischer, 2000; Jargowsky, 1996).

First, it must be examined how sprawl increases the segregation of Black people to the urban centre. In their 2018 study, Talena et al. found that white flight has succeeded in creating inner-city pockets of Black population and surrounding rings of suburban white population, demonstrating this with the city of Boston whose suburbs they found to have "a 92% non-Hispanic white population, despite the fact that Massachusetts has substantial Hispanic and Black populations" (Talen et al., 2018, p. 274). They also found the converse to be true: pre-sprawl, higher density urban forms (urban grids and rectangular block grids), are much more diverse. Nelson et al.'s study also found sprawl containment measures, including minimum density zoning, regional "fair share" housing allocations with specific targets, inclusionary housing requirements, and housing linkage fees had the effect of reducing racial segregation. The authors posit two reasons for this effect. First, urban containment measures shrink the urban boundary, increasing housing

density, making it more difficult for people of separate races to stay distanced from each other. Second, when the boundary is smaller, the cost of "white flight" is greater. This is because to find low-density housing in primarily white neighbourhoods, prejudiced white residents then have to move to entirely other municipalities. Their relocation then means higher transportation costs for their commutes and various other relocation costs (Nelson et al., 2004a; Nelson et al., 2004b).

It should be noted that sprawl is only one of many factors contributing to the pattern of segregation of Black people to the inner city. Other factors include previously abolished but continually effective racial zoning policies, racial covenants between homeowners and land developers, discriminatory requirements in home selling (extensive credit-history checks, for example), policies encouraging "white-flight", redlining, and much more (Gobillon et al., 2007; Nelson et al., 2004b; Powell, 1999)

Next to be examined is the relationship between racial segregation and poverty. Massey and Fischer (2000) find that, though members of all races experience negative effects of economic restructuring or transformation, individuals of more heavily segregated races, notably Black people, are affected to a much greater degree. In American cities, nearly three quarters of Black people are segregated whereas 90-100 percent of members of other races are only moderately segregated (Massey & Fischer, 2000). The authors argue that negative economic outcomes thus have "uniquely deleterious" consequences for American Black people (Massey & Fischer, 200, p. 688). Moreover, though both income and racial segregation proliferate each other, income segregation is more dependent on racial segregation than the reverse (Massey & Fischer, 2000). These findings are in agreement with those of Jargowsky, who find race and racial segregation to be intensifying factors in the effects of economic segregation. As municipalities sprawl into their surrounding countryside and their middle-class white residents evacuate, the segregation of Black people to the inner city is intensified. This racial segregation then exacerbates the preexisting disproportionate poverty of Black people living in the inner city already disproportionate poverty (Powell, 1999), further propagating racial segregation and inequality, adding momentum to sprawl and further distorting the shape of the municipalities.

Conclusion

North American urban sprawl radically worsens poverty in the urban core and does so by three mechanisms. First, it relocates centres of employment to the suburbs, broadening the distance between primarily Black inner-city residents and locations of concentrated employment. This distance inhibits their ability to find employment, increasing their unemployment and poverty. Second, a concentration of poverty in the urban core forms as unemployment spreads. This leads to a slew of social issues, notably crime rate increases, underfunding of vital locally-funded services and institutions, and further flight of middle-class residents. Third, urban sprawl also segregates residents by race. It traps Black people in the inner city while allowing white people to flee

to the suburbs if they please, which further increases poverty. Moreover, poverty also worsens racial segregation, meaning the two form a feedback loop. Urban sprawl affects urban centres internationally, negatively and drastically. As such, it is critically important the effects of urban sprawl are analyzed further and the pursuit of more equitable urban forms is prioritized.

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THE VIRUS IS NOT THE ONLY DISEASE: HOW PUBLIC HEALTH CRISES AGGRAVATE STRUCTURAL INEQUITIES AND FURTHER PUT MINORITIZED GROUPS AT RISK

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Arts & Science 4CI3: Diversity and Human Rights

Introduction

How do public health crises worsen and bring to light structural and societal inequities? In what ways, and to what extent, have such inequities been exacerbated in Canada during the COVID-19 pandemic? This paper will investigate the exacerbation of health and social inequities by public health crises, with a focus on the disparate effects of the COVID-19 pandemic, which is pertinent to our lives right now. Both historical and current evidence from the COVID-19 pandemic make it clear that disease outbreaks disproportionately harm minoritized groups. This paper will explore three mechanisms through which minoritized groups are disproportionately disadvantaged by disease outbreaks: biased outbreak response measures that further put minoritized groups at a disadvantage; pre-existing social and economic inequities exacerbated during public health crises; and, heightened tensions towards minoritized groups – particularly those perceived to be “at fault.” These mechanisms all contribute to the disproportionate risks minoritized groups face during public health crises. The paper will also examine the possibility of education as a partial solution, recognizing that full solutions to these complex problems are beyond the scope of any one paper.

Inequitable Response Measures

Response measures frequently serve dominant populations more than minoritized populations, and they make clear some of our society’s more discriminatory values. This is largely because response measures and health policies are determined by some of the least vulnerable members of society (Wenham, Smith, Morgan, 2020), and because it is more difficult to follow emergency measures when the safety net of privilege is absent. There is an overwhelming number of means by which outbreak response measures disproportionately harm minoritized groups, but I will discuss only a handful of them.

One of the most debilitating public health measures during the COVID-19 pandemic has been physical distancing and social isolation. While this has threatened the mental health of many people, physical distancing and social isolation has frequently been more difficult for minorities to comply with - particularly migrant populations, homeless individuals, and racialized minorities (Sekalala et al., 2020). Members of minoritized groups living in cities are more likely to live in neighbourhoods and residences that have a high population density (Hooper, Napoles & Perez-Stable, 2020). Within homes, individuals who are members of racialized groups are more likely to live in communal and intergenerational settings. “Social distancing is a privilege, and the ability to isolate in a safe home, work remotely with full digital access, and sustain monthly income are components of this

privilege," (Yancy, 2020 as cited in Hooper, Nápoles & Pérez-Stable, 2020, para. 6). Members of minoritized groups are much less likely to have this privilege,[A1] [A2] which can act as a safety net in times of crisis, than members of dominant groups.

Moreover, it has been common policy for many countries to shut down their borders, making travel exceptionally difficult. These border restrictions have had the most detrimental impacts on refugees and asylum seekers. Until November 2021, when the Canadian government announced they'd be ending the policy (Paperny, 2021), asylum seekers coming to Canada from the United States during the COVID-19 pandemic were turned around and returned to US authorities, who may have deported them (Lee & Johnstone, 2021). Of the at least 544 asylum seekers who have been turned back to the United States during this policy, an unknown number have been "taken into indefinite US immigration detention" and at least two were deported (Paperny, 2021). Asylum seekers who entered Canada during this time – those who were not intercepted at the border and sent back to the United States – did so illegally, and thus have been deemed criminals for an activity that would, under normal circumstances, not be illegal. This practice has "reified the systemic inequity and discrimination for immigrants" (Lee & Johnstone, 2021). It should be noted that the World Health Organization, as cited in Lee and Johnstone (2021) advises: "travel bans to affected areas or denial of entry to passengers coming from affected areas are usually not effective in preventing the importation of cases but may have a significant economic and social impact" (para. 43), and further, that border closures as a way of preventing disease transmission have not been confirmed to be effective (World Health Organization, 2020, as cited in Lee & Johnstone, 2021). The burden of border closure policies during pandemics, such as Canada's policy of turning back asylum seekers, falls disproportionately on the already vulnerable and minoritized group of asylum seekers.

Another example of response measures serving dominant populations more than[A3] [A4] minoritized groups –in this case, women – is the closure of schools and day-care centres. Due to pre-existing social expectations, it is predominantly women who have been expected to quit their jobs to stay home and care for children who are no longer attending school during the day (Power, 2020). School closures meant to prevent the spread of COVID-19 in many countries, as Wenham, Smith and Morgan, (2020) put it, "have a differential effect on women, who provide most of the informal care within families, with the consequence of limiting their work and economic opportunities" (para. 3). While progress towards more equal roles in parenting between mothers and fathers has advanced dramatically over the past century, it seems that during times of crisis, we revert to older, more traditional roles which favour dominant populations over minoritized groups. Another way that women are more likely than men to be harmed by pandemic response measures is that women are more often victims of domestic abuse (Lee & Johnstone, 2021). During lockdown and isolation periods, victims are more confined with their abusers and are less able to access shelters. While this problem does not only affect women, the majority of victims of domestic abuse are women[A5] .

Additionally, Ontario hospital protocol dictates that in the event of too few Intensive Care Unit beds to accommodate the demand for them, priority should be given to those without underlying medical

conditions. This protocol, which gives beds and ventilators to those deemed to have the highest chance of survival, is intended to preserve the greatest number of lives. It is also intended to provide a minimal-bias medical perspective, instead of leaving the decision of who should get priority care up to individual doctors' biases (Dubinsky et al., 2021). However, individuals with disabilities are considered to have underlying medical conditions, putting them at additional risk if they get sick. When Ontario announced this protocol during the COVID-19 pandemic, at a time when it was dramatically more likely than usual for the demand for ICU beds and ventilators to become higher than the supply, this "immediately put people with disabilities on high alert" (MacDonald, 2021[A6] [A7]). Given that individuals with disabilities are a protected group in the human rights code and the Canadian Charter of Rights and Freedoms, it has been argued that this protocol is a violation of the human rights of individuals with disabilities (Dubinsky et al., 2021). Ultimately, this response measure ends up putting individuals with disabilities at higher risk of death if they get sick at the wrong time, showing how well-intended response measures can benefit dominant groups while risking the lives of minoritized groups.

This phenomenon of emergency response measures inadvertently putting minoritized groups at greater risk is not new during the COVID-19 pandemic. As a part of the response to the Ebola outbreak in West Africa, reproductive and sexual health resources were diverted to outbreak response. This diversion of resources, which harmed women to an overwhelmingly disproportionate extent, contributed to an increase in maternal mortality in a region that already had one of the highest maternal mortality rates in the world (Wenham, Smith & Morgan, 2020). Further, women were "less likely than men to have power in decision-making around the outbreak, and their needs were largely unmet" (Wenham, Smith & Morgan, 2020, para. 4). While it makes sense to divert resources to public health measures during emergencies for the benefit of the broader community, it must be noted that response measures have traditionally been, and continue during the COVID-19 pandemic, to be biased towards benefitting dominant groups while putting minoritized groups at further risk of harmful outcomes.

Exacerbated Pre-Existing Social and Economic Inequities

Another way the effects of an outbreak disproportionately affect minoritized groups is due to pre-existing socioeconomic inequities becoming inflamed. According to Tuyisenge & Goldenberg (2021), in Ontario, migrants account for 43.5% of COVID-19 cases, but they only make up just over 25% of the population. Of the cases among migrants, the majority are in racialized visible minorities.

Workplace conditions are likely one of the reasons that the COVID-19 pandemic has had a disproportionate effect on minoritized groups (Tuyisenge & Goldenberg, 2021). People of lower socioeconomic status and ethnoracially minoritized groups are more likely to hold lower wage jobs, which are more likely to be public-facing, front-lines jobs (Hooper, Nápoles & Pérez-Stable, 2020). These jobs often involve being in crowded spaces with limited employee protection, which makes physical distancing more challenging. There are also significant gaps in healthcare access among racialized migrants in Canada, such as fear of immigration consequences and the scarcity of healthcare that is linguistically and culturally appropriate

for members of diverse cultures (Tuyisenge & Goldenberg, 2021).

Underlying co-morbidities disproportionately affect racial and ethnic minority groups: diabetes, cardiovascular disease, asthma, morbid obesity, HIV, kidney disease, and liver disease all have disproportionately high prevalence rates in racial and ethnic minority groups (Hooper, Nápoles & Pérez-Stable, 2020). While these high comorbidities mean that such groups are more likely to become severely ill if they are infected with COVID-19, they also have further implications. Ontario's healthcare policy in case of insufficient numbers of ICU beds or ventilators dictates that individuals without underlying conditions will be prioritized. This policy further gives privilege to dominant groups who have lower burdens of comorbidities and further disadvantages minoritized groups, who have higher disease burdens. Given that racialized groups, particularly migrants, frequently have poorer access to healthcare (Browne, 2017), we can clearly see an illustration of a common social justice theme: public crises exacerbate pre-existing inequalities produced, in particular, by systemic racism. Insufficient access to healthcare leads to higher comorbidities, which lead to increased need for better healthcare. Racism within healthcare systems -- whether implicit or explicit – further degrades matters. It should be noted however, that there are many factors involved in the perpetuation of this cycle which are difficult to summarize in one paper.

Heightened tensions towards minoritized groups – particularly, perceived "at fault" minoritized groups

At times when a society is threatened, people are more likely to scapegoat minoritized groups, particularly ethnoracially minoritized groups. This results in heightened racial tensions and often leads to increased rates of hate crimes and other acts of discrimination and human rights violations. During the COVID-19 pandemic, there has been a massive increase in Asian-directed hate crimes (Lee & Johnstone, 2021, para. 2). In Vancouver, University of British Columbia law professor Caroll Liao commented that many people are "'treating COVID-19 as a license to exhibit their hate, only emphasizing the long history of racism in this city'" (Lee & Johnstone, 2021, para. 34). This observation that COVID-19 has been used as an excuse for demonstrating hatred indicates that the scapegoating of people of Asian heritage during the COVID-19 pandemic is an expression of pre-existing bigotry and hate. In this case, it is clear there was already tension towards people of Asian heritage, but it was dramatically heightened during the pandemic. Prominent politicians calling COVID-19 the "kung flu" and "Chinese virus" do not help racial tensions and can perpetuate xenophobia and anti-Chinese stigma (Quinn, Walsh, John & Nyitray, 2021).

The phenomenon in which certain minoritized groups are perceived to be at fault for disease outbreaks has occurred previously, during the HIV/AIDS pandemic. At the time, many blamed the LGBTQ+ community (particularly, men who have sex with men) for the disease, and some even went as far as to say that AIDS was God's punishment to homosexuals (Kopelman, 2002).. This is known as the "punishment theory of disease," and in its essence, it "ascribes moral blame to those who get sick or those with special relations to them" (Kopelman, 2002). While there does not appear to be any research findings that indicate COVID-19 is perceived to be punishment for individuals of Asian heritage, it has been shown that many people

blame this minoritized group for the existence and spread of the virus. Research suggests that minoritized groups that are heavily impacted by a disease outbreak are more likely to be blamed for it if the spread of the disease is thought to be due to controllable personal actions (such as wearing a mask in the case of COVID-19 or wearing a condom in the case of HIV/AIDS) rather than external factors, such as structural racism and inequities (Quinn et al., 2021). More research is needed to determine whether Asian individuals are particularly prone to being blamed for contracting COVID-19 compared with other groups, though given the increase in anti-Asian xenophobia and anti-Asian hate crimes during the pandemic, it is a distinct possibility.

The use of police and by-law officers to enforce public health measures has also aggravated tensions between dominant and minoritized groups. Police and by-law officers do not have the training to deal with public health issues, yet some municipalities have made use of them for this purpose (Mykhalovskiy et al., 2020). Two problems arise from this measure, both of which serve to increase tensions between dominant and minoritized groups. First, using police to enforce public health measures, "over-associates police and public health functions and can instill mistrust of public health among marginalized people" (Mykhalovskiy et al., 2020, para. 14). Mistrust of public health measures could make people less likely to follow them, which might make them less effective, potentially worsening the effects of disease outbreaks[A8] [A9] . If this phenomenon causes other groups to perceive further outbreaks and worsening of the public health crisis to be the fault of such minoritized groups, tensions could rise further. As we have seen, increased tensions against minoritized groups can become a basis for more blatant discrimination, and even justification for hate crimes (Lee & Johnstone, 2021). Secondly, using police to enforce public health measures means that communities that already face disproportionate surveillance and criminalization are put at greater risk of being discriminated against, criminalized, and even abused by police (Mykhalovskiy et al., 2020). These communities involve racialized groups, homeless people, people who use drugs, and sex workers. As the Canadian HIV/AIDS Legal Network (2020) puts it, "criminalization is not an evidence-based response to public health issues...police and other law enforcement interventions in the context of COVID-19 must be strictly limited" (p. 2).

More research is needed to determine whether using police to enforce public health measures increases tensions evenly towards many different minoritized groups, or whether there is particular strain in community relations with perceived "at fault" minoritized groups. In either case, it seems that many people feel more justified in discriminating against perceived "at fault" minoritized groups in times of public crisis.

Education as a Partial Solution

The discussion above highlights ignorance and a potential need for education campaigns, about which there are differing arguments. Kallen (2010) points out that knowledge does not always lead to positive outcomes and can even worsen situations of tension between dominant and minoritized groups: "knowledge per se does not induce sympathy or generate a more positive image... indeed, such campaigns may serve to raise or lower the image of a given minoritized group (p. 67). This could be, in part, because such education is often provided by people who have never had contact with the groups they

are discussing, so they may unconsciously reinforce existing prejudices, rather than eradicate them (Kallen, 2010). Even when education campaigns are implemented by qualified parties, many individuals do not seem to respond well. For example, the prevalence of systemic racism in health care systems across Canada is acknowledged and it has been evidenced by mainstream human rights movements more and more commonly in recent years. Yet, some folks -- like Francois Legault, the premier of Quebec -- disagree that this is a systemic problem, instead claiming that racism in modern healthcare is the fault of specific individuals. If mainstream media and well-known human rights movements have already popularized the fact of systemic racism in Canadian healthcare, it appears that increased awareness and education are not full solutions. That said, ignorance is also not a viable answer. If ignorance worsens tensions between minoritized and dominant groups, this implies that education and knowledge could help. How then, can we use education as a tool for positive human rights change without enabling negative stereotypes? What other tools must be employed in addition to education to combat racism in healthcare? These are difficult questions that we have not yet found full answers to, and which are beyond the scope of this paper.

Conclusion

This paper has argued that minoritized groups face disproportionately greater inequities and harms in times of public health crises. First, outbreak response measures are biased and can further put minoritized groups at a disadvantage. This disadvantage can take the form of poorer access to healthcare, more risk in case of illness, and other forms of risk of harm. We investigated current examples within the COVID-19 pandemic as well as a past example from the Ebola outbreak to illustrate some of the unique disadvantages faced by minoritized groups due to emergency response measures. Furthermore, pre-existing social and economic inequities are exacerbated during public health crises. We see this through disproportionately higher levels of front-lines jobs and comorbidities within ethnoracialized minorities, leading to higher risk of infection. Additionally, tensions are heightened towards minoritized groups and particularly, perceived "at fault" minoritized groups during public health crises. We examined current and past examples of this phenomenon, including the increase in discrimination against people of Asian heritage during the COVID-19 pandemic as well as against the LGBTQ+ community during the HIV/AIDS epidemic. Lastly, the paper explored the concept of education as a partial solution, recognizing that full solutions to these complex problems are beyond the scope of any one paper.

Further research that assesses the viability and logistical requirements that education as a partial solution for systemic discrimination would require is needed, as well as investigation into the ways different minoritized groups are harmed by public health crises. Much of the current research focuses on the impacts on racialized groups in a general sense. Given that different racialized groups have faced very different barriers during the COVID-19 pandemic, it would be worthwhile to learn about the differential impacts of public health crises between racialized groups, and minoritized groups more generally. In a broader realm of study, critically examining the role of some of the inequities discussed in this paper as they apply to "fake" disease outbreaks, or mass hysteria, would provide further insight into the social barriers minoritized groups face in relation to perceptions of public health crises.

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WHERE 'DEWEY' GO FROM HERE? PERPETUATION OF DIFFERENCE IN PUBLIC LIBRARY KNOWLEDGE ORGANIZATION SYSTEMS

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Arts & Science 1C03: Global Challenges

In the 1929 essay *A Room of One's Own*, Virginia Woolf recounts her trip to the British Museum library where she was in search of "the essential oil of truth" concerning the relations between women, poverty, and fiction (Woolf, 1929; Olson, 2002). Her search was ultimately fruitless as she was unable to find the information that she needed from the section containing books about women in the library's catalogue, despite the substantial quantity of materials in the collection (Woolf; Olson). Hope A. Olson (2002) concludes that Woolf's struggle was twofold; in Woolf's early 20th century England, women were known as "objects of masculine attention" and "inferior beings", which was firmly reflected by their place in the catalogue — a document, created by men, that pushed the subject of women to the margins — as well as the types of literature that existed pertaining to them. With the progress made over the last 100 years to recognize gender equality, one might hope to see rectification in our libraries' systemically flawed organization of information. However, sex (specifically womanhood) is only one of numerous identities that library catalogues have and continue to marginalize. In fact, Woolf's experience is only one example of ways in which the library fails to accurately represent the majority of marginalized groups, including racial, religious, and LGBTQ+ minorities. There clearly exists tension between the library's commitment to the provision of knowledge and the systemic bias evident in the means of accessing this knowledge. This tension has a significant impact on the development and reinforcement of societal ontological beliefs. This is to say that our perception of identity and difference within society can only be informed by what we know and is therefore limited by the way knowledge is made available to us.

According to the UNESCO Public Library Manifesto, "[t]he public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision-making and cultural development of the individual and social groups" (IFLA & UNESCO, 1994). Across the globe and throughout history — from the Library of Celsus in late first century BCE Rome (Dix, 1994) to the 600 public libraries across present-day Canada (Marriott, 2010) — libraries have served as epicentres for preservation and provision of knowledge. These days, libraries hold vast amounts of information in a variety of formats, including fiction and non-fiction books, DVDs, CDs, digital files, and more (henceforth referred to under the umbrella term "materials"). While the content and quantity of the materials housed in any public library are of great importance to successfully providing the services outlined in the UNESCO manifesto,

what are equally vital and often overlooked are the knowledge organization systems used in some form in every single library.

Understandably, libraries need to keep their materials in a consistent holding place, for both retrieval and inventory purposes. Gail Hodge (2000) posits that the purpose of a knowledge organization system is to provide a framework within which materials can be arranged in a logical and practical order, such that patrons can easily discover, use, and understand the information stored in the materials. So, not only are materials held in a consistent location on a certain shelf, but they're also kept in a specific place in relation to one another, based on informational content, which should allow users to browse or search directly by topic of interest without needing to know of a specific title (Hodge). The Dewey Decimal Classification (DDC) is the most widely used knowledge organization system in libraries across the globe (Dewey et al., 2011). Invented in 1876 by Melvil Dewey, the DDC uses numbers from 000-999 to stratify non-fiction materials into ten main classes. Each of these ten broad classes, which span one hundred numbers (e.g. 000-099, or 700-799), are split into ten more precise divisions (e.g. while 000-099 covers all computer science and general information, 020-029 corresponds to the more specific library and information sciences), which are themselves further segmented so each whole three-digit number represents an even more specific section (e.g. 021 is assigned to materials pertaining to library relationships with archives, information centres, etc.) (Dewey et al.). If further specificity is required, the three-digit section within which the material fits can have any number of decimal digits added to it through the methodical process of number building, following instructions found within the DDC cataloguing manual. Every piece of non-fiction material in a public library that uses the DDC is assigned a call number — the three-digit number plus decimal digits that correspond to its informational content — that is labelled clearly on the material (typically on the spine) and is used to arrange the material on the shelves in numerical order, alongside other materials on similar topics.

One might believe that the DDC is impervious to bias, however, each and every number has meaning attached to it. Thus, there must exist bias from whomever assigned the meanings. According to Hope A. Olson and Rose Schlegl (2018), examples of bias within library knowledge organization systems tend to fall under one of five categories: "treatment of a topic as an exception, 'ghettoization' of a topic, omission of a topic, biased structuring of a classification, and biased terminology" (Olson & Schlegl; Robinson, 2018). Essentially, the structure of the DDC as an organization system relies on the three-digit sections connecting with one another laterally, and with the divisions and classes in a hierarchical manner. However there cannot exist a section for every topic of information in existence. Even with number building of decimal digits, the DDC cannot create a unique call number for every single material in the library, whilst allowing for material that will be published in the future. And if this were somehow possible, it would defeat the system's purpose of grouping like materials together. According to the thirteenth edition of the *Decimal Clas[s]ification and*

Relativ[e] Index[1], the last DDC manual for which Melvil Dewey wrote an introduction, adding additional decimal digits through number building is only warranted "if there is no blank number availabl[e]…and, when [a new topic is] important en[ough]," otherwise the material is "combined with the he[a]d nearest all[ie]d" (Dewey, 1932). Furthermore, the act of naming the different classes, divisions, sections, and subsections involves "controlling subject representation… simultaneously construct[ing] and contain[ing]" (Olson, 2002). The names used in the DDC to label pieces of information construct meaning by emphasizing certain facets and overlooking others through both denotation and connotation (Olson).

This means that decisions must be made in distinguishing which topics are important enough to be assigned a section of their own, and which could afford to be grouped within the next closest topic. Additionally, names must be chosen for each section to best represent the nature of the materials they hold. While this may seem logical and innocuous enough, it brings into question which topics are "important enough"? What sets a certain term apart from a variety of synonyms as the best name for that topic, and who has the authority to make these decisions? Melvil Dewey claimed that he consulted a variety of scholars who assisted in the DDC numbers within the division that matched their area of expertise, as he recognized that "[n]o person is learned en[ough] to clas[s] wi[se]ly books on all subjects and s[ci]ences," however a critical examination of the DDC classes, divisions, sections, and subsections brings many problematic biases to light. Much literature in the field of library and information sciences, particularly from the past two decades, acknowledges the different forms of bias in the DDC and attempts to reconcile the apparent need for a more inclusive knowledge organization system.

One of the more prominent criticisms of the DDC concerns the treatment of race. The system favours "whiteness", establishing it as the default and marginalizing or "othering" all other racial identities in a variety of ways. Rebecca Green (2015) describes the "ghettoization" of materials pertaining to Indigenous Peoples in North America: classing all Indigenous information — including religion, philosophy, literature, and art — under 970.00497, despite each of these individual topics having their own main classes (200s being for "Religion", 100s for "Philosophy and psychology", 800s for "Literature", and 700s for "Arts and recreation"). The blanket classification of such vast materials to a single subsection and substantial separation from the aforementioned main classes enforces the perception of "otherness" regarding Indigenous Peoples. Similarly, the DDC's consideration of information regarding non-white people living in the United States, notably Asian Americans, presents them as "non-normative and foreign", by confining materials on the topic into sections named "other", or designating them separate from the main section by adding the decimal suffix 089950073, which refers to "Racial, ethnic and national groups" (089) + "Asians" (950) + "Americans" (073) (Higgins, 2016). The

1 Melvil Dewey was known for writing in a self-invented simplified spelling style; letters in square brackets were omitted in Dewey's original texts and have been added back in for clarity.

latter situation is problematic as it makes no distinction between Asian Americans, who are U.S. citizens that are racially Asian but may have little connection to their ethnic background, and Asians in America, who may be short-term U.S. residents and do not identify as American, leading to the implication that all Asian Americans remain foreigners in the U.S. regardless of how many generations have been born and raised there (Higgins). Furthermore, non-Western — especially African — languages and literature are allocated only three out of the one hundred sections of the 400s and 800s respectively, again within the last ten digits of the class, labelled "other" (Kua, 2008). Meanwhile, sections 410-89/810-89 are dedicated to the Western languages and literature; English, German, and French, for example, have ten sections each, with designated numbers for poetry, fiction, essays, and satire, to name a few.

This same manifestation of bias, through an unbalanced division of the classes, can be observed within the 200s, wherein materials containing religious information are catalogued. Eighty sections, from 210 to 289, are given for strictly Christian-related information, and even the first ten sections, while explicitly listed for general religious works, tend to hold more Christianity-centric materials. General cataloguing practice prefers placing materials on all the rest of the major world religions, including Hinduism, Judaism, and Islam, within the final division of the 200s, predictably named "Other religions" (Higgins, 2016). Moreover, some religions are not even included within the 290s, such as Indigenous religious beliefs, which as mentioned above are classified under 970. 00497, and Wicca, which is often placed under 133.43, within the "Parapsychology and occultism" division of the philosophy class. Excluding any materials regarding these topics from the 200s delegitimizes the belief systems as it implies that they are not "true religions". As well, the placement of Indigenous religion within the 900s, the history class, feeds into the false notion that Indigenous Peoples and their culture "are a 'vanishing race'" that are merely articles of the past (Green, 2015).

Lastly, the DDC's treatment of different gender and sexual identities is a commonly cited issue (Robinson, 2018). Although many library systems have recently begun to rectify this, since the first acknowledgement of LGBTQ+ materials (specifically "homosexuality") in the 1942 fourteenth edition of the DDC manual, they've been classed under various sections in the 100s for "Mental derangements", "Abnormal psychology" or "Sexual inversion/homosexuality", in the 300s for "Social problems and social services" — alongside materials on obscenity and pornography, and in the 600s for "Neurological disorders" (Sullivan, 2015; Joseph 2021). It is obvious why each of these placements are problematic due to locative association, not to mention the derogatory names for the sections themselves. Currently, while information on LGBTQ+ matters has been allocated subsections under 305 for "Groups of people", and 306 for "Culture and institutions", the classifications tend to present LGBTQ+ concepts and identities as sets of binaries; for example, there exist subsections for materials pertaining to both lesbians and gay men, under 305.90664 for

“Occupational and miscellaneous groups”, for materials on only lesbians classed apart under 305.489664, and for materials on only gay men classed away from both under 305. 389664, but there do not exist subsections for every single identity within the LGBTQ+ community (Olson, 2002). Patrick Kielty (2009) describes “queer’s paradoxical relationship” with organization systems, acknowledging that queerness “belongs to a category of that which does not belong”. The inherent problem with attempting to classify LGBTQ+ information using the DDC lies in the fact that at its core, it is best understood on a spectrum. Since the very nature of “queerness” is to be non-monolithic and to resist categorization, it is therefore difficult to pin down and separate into the discrete sections/subsections.

These examples of bias within the DDC reveal a fundamental problem concerning knowledge representation (or rather, misrepresentation) in the libraries that use this knowledge organization system. Evidently, the framework of the DDC reinforces the notion of white, Christian, cisnormative and heteronormative hegemony through its mistreatment and marginalization of practically all other racial, religious, gender/sexual identities that fall outside of this specific archetype. William Torrey Harris (1870) posits that “[e]very scheme of classification rests upon some philosophical system as its basis” (Harris; Mai, 2010); thus to understand where these biases in the DDC come from, we ought to investigate the prevailing culture in the time and place of its invention — 1876 Amherst, Massachusetts — and the controversial nature of the creator himself — Melvil Dewey.

A myriad of literature exists that examines the societal views regarding race, religion, and gender of late 19th century United States. According to James A. Banks (1995), racism and religious superiority likely developed in tandem with and as a result of the widespread European colonization of the native peoples in Africa, Asia, Australia, and the Americas. The notion of “manifest destiny” allowed the Western colonizers to justify their actions and reconcile their Christians beliefs with all of their violent actions, particularly the development of slavery. In the northern state of Massachusetts, 1876, where the Western-colonialist mindset was deeply entwined with race theory and scientific development, the concept of racial equality still had a long way to go. Ethnic minorities, including Jewish Americans, African Americans, and Indigenous Peoples, were considered objectively and inherently inferior to the Anglo-Saxons (Banks). Antisemitism was especially prominent as the capitalist economy accelerated, due to differences in values regarding standard business ethics, and reflected by the demonization of Jews within sermons and both religious and secular literature, including school texts and the press (Gerber, 1982; Rockaway & Gutfeld, 2001). These racist views became increasingly problematic as they bled into the scientific work of the era, resulting in prominent scientific racism, particularly in the fields of craniology and eugenics (Jackson & Weidman, 2005; Norrgard, 2008).

In terms of gender and sexuality, non-cisgender/non-heterosexual identities were largely considered “degenerate” and “abnormal” (Morris, 2009). Similar to the way that societal views of race influenced

scientific development and beliefs, prejudices against gender queerness led to early studies of non-cisgender and homosexual behaviour drawing conclusions that served to reinforce the preconceived notion of "otherness". Notably, around this point in time, not only was cisnormativity the predominant social attitude, but extreme hegemonic masculinity was prevalent as well. Women had few to no individual rights: in fact, the institution of marriage was comparable to slavery. Married women were "compelled to promise obedience to her husband…the law giving him power to deprive her of her liberty, and to administer chastisement" (*Report of the Women's Rights*, 1848; Clark, 1990). The first wave of feminism set to change this and by 1876, the movement was gaining traction, however it would be two years until the 19th Amendment — which granted women the right to vote — was even introduced to Congress, and another 42 years until its ratification (Levy & Smentkowski, 2020). These examples of outdated, problematic cultural standards regarding race, religion, and gender contribute in part to an explanation of the biases within the DDC.

Moreover, amidst the culture of his time, Melvil Dewey was not a progressive individual; he was a racist and antisemitic Anglo-Saxon Protestant with a zeal for reform that tended to reinforce his position of privilege (Richardson, 1998). In their book, *Irrepressible Reformer: A Biography of Melvil Dewey*, Wayne A. Wiegand (1996) describes Dewey's reformist nature, which manifested in multiple facets, including his attempt to establish a "model community … for the hard-working professional class", which refused admission to Jewish, Black, and Indigenous individuals (Wiegand; Richardson). While Dewey's views regarding women may have been considered open-minded, as he advocated for the admission of women into library school, various scholars have alluded to his reputation as a sexual harasser (Wiegand; Richardson; Beck, 1996). Having this context helps us to understand why these biases exist within the DDC, but more importantly, we must examine why they matter. How does the use of a biased knowledge organization system within public libraries across the globe influence societal development in relation to constructing identity, and how might the gradual progression of social justice support a reduction of bias within the DDC?

As previously stated, the purpose of the public library is to act as a hub of knowledge, available for all people, regardless of age, race, religion, sex, and class. Even now, with the Internet allowing widespread access to knowledge, libraries have not lost their relevance and are still used by many as a reliable source of information on a vast range of topics (Zickuhr et al., 2013). Access to a diverse and inclusive collection of information allows individuals to gain an awareness of different perspectives and issues that they themselves might never have experienced. Consequently, the lack of such information tends to result in ignorance and closed-mindedness. Although knowledge of this kind may be obtained elsewhere, an ongoing trend in our society has seen most other sources of trustworthy information, such as news articles and academic journals, hidden behind paywalls. This leaves much responsibility upon the public library to be one of few remaining institutions to serve

and influence an entire community — not only the financially privileged. Thus, the qualitative nature of the materials in a public library can have a significant impact on the cultural attitude of the community it serves. Likewise, the problematic classifications of materials pertaining to minority groups reduces the accessibility of said materials, either because they are not grouped with the main class/division/section, such as Indigenous philosophy or Wicca, or are given derogatory names that are not likely to be used in searching the catalogue. This erasure minimizes inclusivity and works to prevent patrons from accessing diverse information. And with this limited access, opportunities to acquire knowledge and develop informed perceptions about these unique identities are inevitably lost.

Public libraries strive to serve all patrons equitably and to foster diverse communities through the provision of knowledge. Based on this commitment to universal accessibility, many assume that the public library as well as the knowledge it shares must be unequivocally neutral (Poole et al., 2021; Hagler, 1997; Mai, 2010). However, as stated by Jens-Erik Mai (2010), we live in a world where "knowledge and truth are social constructions and where these notions are thought of, produced by and established in social interactions". Although seemingly absurd, it is true that knowledge is anything but objective; instead it is influenced by each individual's personal experiences, prior knowledge, and values. Furthermore, the interpretation of knowledge is affected by the context in which it is found; the intentional separation or grouping of materials conveys a specific level of relatedness, the amount of space allotted implies importance, and the names for each section carry both specific denotations and connotations. Each of these implications supplement and influence the ways in which the explicit content of the material is understood.

The subjection to intolerance and oppression that various racial, religious, and gender/sexual minorities have experienced historically (and still do to this day) was/is often justified by identifying differences, either real or imaginary, and assigning value to those differences (Memmi, 1971). When these differences are emphasized in the very systems in which we keep our knowledge, through ghettoization, diasporization, derogatory naming, and other forms of "othering", the same systemic oppression and construction of difference is reinforced and legitimized in the public eye, creating a vicious cycle in which the knowledge organization and societal viewpoint perpetually reflect one another. Of course, this is a gross simplification and portrays both knowledge organization systems and social beliefs as static entities, which is not the case. But, to quote a cliché, "knowledge is power"; to enact any sort of change to societal prejudices in order to diminish the oppression of marginalized identities, it is first necessary to gain a knowledge of the existing prejudices and oppressions woven into all aspects of our society and how these constructed differences came to be, in order to effectively work towards dismantling them.

Over the past 50 years, this progress can be seen in action. Higgins (2016) calls the DDC a "racial project", as it "may not have racial formation as [its] goal, but [it] form[s], transform[s], destroy[s], and re-

form[s] racial meaning all the same". Their writing also highlights the way that the DDC was deracialized — through the shift from using the term "racial, ethnic, and national groups" in its naming of subsections to using the phrase "ethnic and national groups" — in conjunction with the general attitude of "colorblindness" that rose to favour in the late 20th century/early 21st century (Higgins). Furthermore, the term "Asian American", which was coined in the late 1960s as a political term chosen by student protestors to self-identify and to replace the archaic "Oriental", was adopted into the DDC's naming system for the first time in 1996, in response to years of the Asian American Political Movement gaining traction (Higgins). Additionally, in recent years, changes to the treatment of Indigenous Peoples in North America have been in development to acknowledge them as sovereign nations and to incorporate their voices and perspectives in their representation (Green, 2015). Although official changes have not yet been made to the DDC manual, many library systems have shifted from using the blanket term "Indians of North America" to the more specific names by which the different Indigenous groups prefer to be called, such as "Haudenosaunee", "Métis" or "Inuit", to name a few. These changes are long overdue, yet they coincide with the growing societal awareness and indignation regarding the oppression and genocide of Indigenous Peoples in North America, which have particularly been made manifest in political measures such as Canada's Truth and Reconciliation Commission's 94 calls to action from 2015 (TRC, 2015). These adjustments to the DDC have, in turn, contributed to maintaining and perpetuating the shifts in societal beliefs regarding identity. We can observe in our current time and place that we hold a more nuanced understanding of the differences between race, ethnicity, and nationality, yet the "colourblind" mindset remains prevalent. The term "Oriental" has fallen to obscurity, while "Asian American" is often the default vernacular to describe that demographic. And increasing numbers of individuals and organizations are using the proper names for Indigenous Peoples within land acknowledgements and other acts of reconciliation. Though these are only a few examples, they work to demonstrate the reverberating relationship between changes to the DDC and societal shifts.

So, where do we go from here? Evidently, public libraries play a vital epistemic role in the communities they serve around the world. However, unbeknownst to the average patron, the knowledge organization systems by which the library's materials are ordered construct and reinforce difference just as much as the actual content of the material does. Furthermore, in the case of the DDC, the values assigned to these differences between various groups of people based on myriad facets of identity can be traced back to the values held by both the creator, Melvil Dewey, and the general public in the time and place of the knowledge organization system's invention. As an institution that deals in knowledge, the fundamental problem with using a biased knowledge organization system is that it sets in motion a self-perpetuating cycle of causation, manifestation, and justification of unjust actions from the group(s) that the system favours upon the groups that the system shows a bias against.

A natural reaction to this issue is the desire to "fix" the DDC, and any other problematic knowledge organization system, by removing all biases and adopting a truly neutral stance within the public library. Unfortunately, it is not that simple; realistically, there is no way to "fix" the DDC. Knowledge organization systems will never be without flaws because classification cannot exist without meaning and meaning cannot exist without bias. To reiterate Harris's statement, every form of classification must be based on some philosophical system; so instead of trying in vain to solve each and every problem in the DDC, we ought to work towards a system that acknowledges its non-neutrality and is more responsible and transparent regarding its philosophy and resultant biases (Harris, 1870; Mai, 2010; Feinberg, 2007). The process of finding such a system is certainly no simple task and will continue to evolve as our social beliefs regarding diversity and inclusivity progress over time, but from where we stand now, it seems to be our best course of action to respond to the deficient representation of marginalized groups in our public libraries' knowledge organization systems.

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