“We are here to awaken from the illusion of our separateness”

-Thích Nhất Hạnh, How to Connect

OF APIS AND ACCESS

How Might We Look Inward to Mobilize Online Efforts of Eco-action?

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Acknowledgements

I would like to acknowledge and give thanks and gratitude to Barb Davies and Cordelia Snowdon-Lawley. Their guidance, patience and understanding were invaluable. I'd like to extend this gratitude to the rest of the team at the Institute for Community Prosperity as well, for all their hard work behind the scenes.

I would like to give a special thanks to my faculty mentor Brian Nichols, Associate Professor in the Department of Humanities. Thank you for sparking an interest in a field I haven't before considered.

In the same manner, I would like to give a special thanks to Vanessa Bilan of Canadian Parks and Wilderness Society (CPAWS), Southern Chapter. Her kindness and inclusion were sectioned only to the passion she brought to discussions.

Brian Jackson, a Librarian at the Riddell Library and Learning Centre, deserves a special thanks for not only his help in research methods, but also for our long discussion on the complicated world of ethics in online realms and the different publics that exist.

My sincerest gratitude to Dr. Helen He, Dr. Jebunnessa Chapola, Hira Shah and Sheri Young. I appreciate you taking the time to meet with me, as well as generously sharing your knowledge, insights and expertise. It was awe inspiring to hear about your passions and your work. I highly encourage anyone to look into your work.

I would like to give a special thank you to Dion Simon for his teachings and conversations on Medicines Wheels and the nature of balance. I truly found these discussions life changing and will forever be grateful for having the opportunity to learn from him.

I would also like to thank my fellow Fellows who have joined me on the Catamount Fellowship journey. Thank you to Shealyn Fong for her kindness and encouragement, to Aira Kaye Siodina for her support and reassurance, and to Ayan Ahmed-Aden for her kind-heartedness and camaraderie. Thank you to the rest of the fellows for their companionship and insight, including those who started the journey with us, but could not finish.

Thank you to Elle Wilde, Creative Director and Founder of Wilde Information Design for her fantastic and speedy design work. This report would not be nearly as eye catching as it is without her skill and keen eye!

Gratitude and thank you to my family for their support. To my mother Heather for her belief in me and my abilities, academic or otherwise. To my father Collin whose encouragement did not stop at driving me to and from campus. To Danica and Pri for insisting that I never give up on myself and to always follow my passions. To my partners Roscoe, Ben and Remy, whose confidence, cheer and compassion was nonstop.

Land Acknowledgement

Take a moment to look at the space around you. Where are you? What surrounds you? Are you by the window? What's outside? Are there plants and trees? Flowers and finches? Is it still and warm or does the wind curl the leaves in circles on the ground? Do birds dart to and fro chasing insects? Are there little paw prints from rabbits nimbly jumping through the snow? Are the prints bigger, belonging to a bobcat or coyote? Think about the interactions and connections intertwined.

Outside my window is a choke cherry tree surrounded by the dried remnants of native goldenrod stalks peeking up through the snow. They remind me of bumble bees and their hurried eagerness for pollen and nectar, buzzing around the neighbourhood gardens, and the fields just outside my community and the forests just past those. These fields and forests are part of the traditional territories of the peoples of Treaty 7. These territories are that of the Siksikaitsitapi (comprised of the Siksika, Piikani, and Kainai First Nations), the Tsuut'ina First Nation, and the Îyârhe Nakoda (including Chiniki, Bearspaw, and Goodstoney First Nations). This land is also home to the Métis Nation of Alberta (Districts 5 and 6).

This land, Northwest of where the Bow River meets the Elbow River, is known to most of us as "Calgary'', but it has other names as well: Moh'kins'tsis to the Blackfoot, Wîchîspa to the Stoney Nakoda, and Guts'ists'i to the Tsuut'ina. I'd like to not only acknowledge these peoples, but also the land itself, as it is for the land, and the beings that live alongside it, that this project was conceived and came into being.

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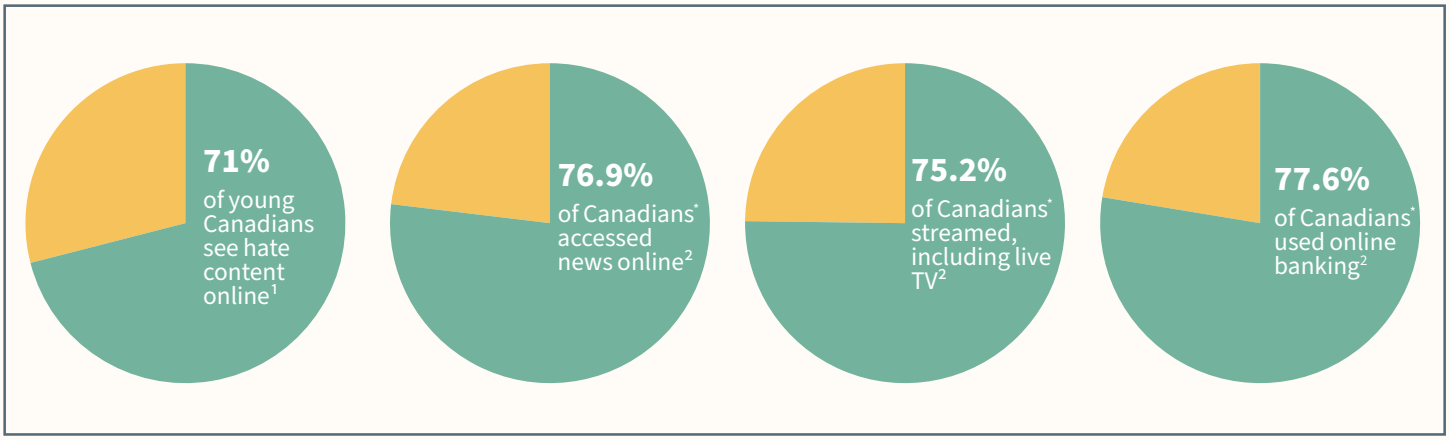
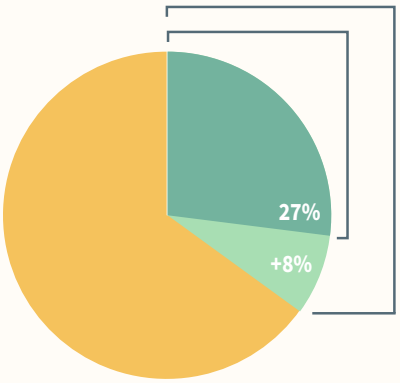
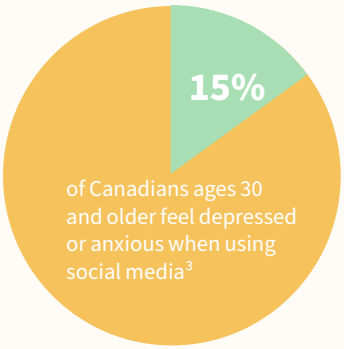
OF BROOD AND BEGINNINGS

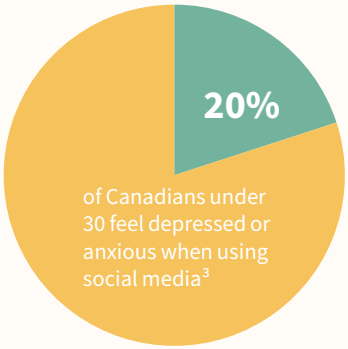


A presence online is nearly mandatory. So much of our society, economy and interactions takes place in an online realm. In 2020, 84% of all Canadians used a smart phone for personal use (communication, research and entertainment), while nearly three-quarters of Canadian Youth checked their smartphone roughly every half an hour (Statistics Canada, 2021). Over one-quarter of all Canadians spent an astonishing 20 hours or more per week online for personal use (not including streaming or games) (Statistics Canada, 2021)! Roughly 6.5 hours every single day is spent on the internet, with just over 2 hours of that time on social media alone (Bush, 2024). As of 2022, a considerable 91% of Canadian youth used various social networking sites, and a staggering 99% accessed the internet: it is apparent that an online presence is not so much a choice anymore (Statistics Canada, 2024). It is demanded by almost every facet of every system we are involved in. From jobs and relationships, to entertainment and media, an online presence has become deeply ingrained in our society.



27% of Canadians spent 20 hours or more per week in 2020 online for personal use (not including work, streaming or games). This saw an 8% increase in 2022[3]





* ages 15 and older as of 2022
1 (Statistics Canada, 2024)
2 (Statistics Canada, 2023a)
3 (Statistics Canada, 2021)

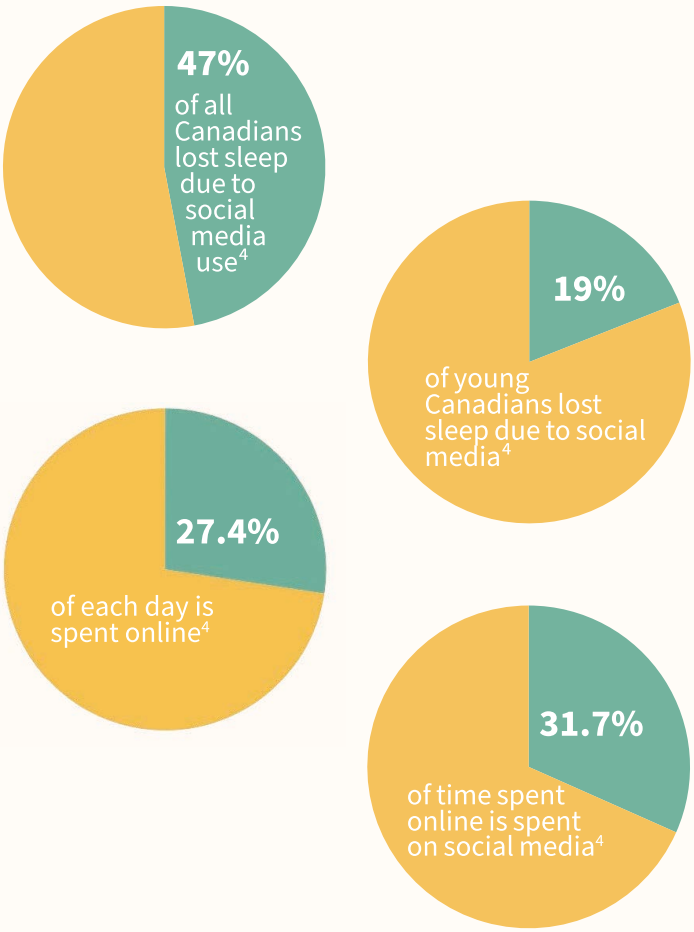
If so much of our lives has adapted, is adapting, to the online sphere, do the methods for social, political and ecological action need to be adapted as well? How can we further utilize the online sphere for environmental movements? There is lots of documentation, studies and essays, both online and off, about harnessing websites, social media and streaming services for social and political action, but not as much for ecological action. This may be because the internet and online realm are social structures that we as people have constructed, and thus the migration of other social structures (such as politics and economy) to the online realm is easier, or at least easier to conceptualize. Perhaps because the environment is not a human-made social construct, it is not as easy or intuitive to migrate or conceptualize ecological work online. Perhaps because the online realm is artificial and nature is natural, they are perceived as diametrically opposed or, at least, unrelated. Specifically, as eco-action movements typically happen in person, outside, there may be larger bridges to cross for migrating efforts offline from the online realm.

So, how might we turn online engagement into applied eco-action? How can we even navigate such a question when it involves so many massive concepts, like the economy and the environment, and big players like the government and ecological societies? Indeed, this problem, when you start digging deep into it, seems bigger than life…

Systems thinking is a mindset to critically analyze complex problems and/or systems and observing patterns within them (Johnson et al., 2019). It can help break down bigger, more complex issues by identifying boundaries of a system, the rules that govern everything inside the system, systemic designs and the inter-relationships that give rise to the issues. This can also let us identify gaps or leverage points in order to promote change. It can help identify that resources go into the system and what results come out of the system as well as what results are wanted out of the system.

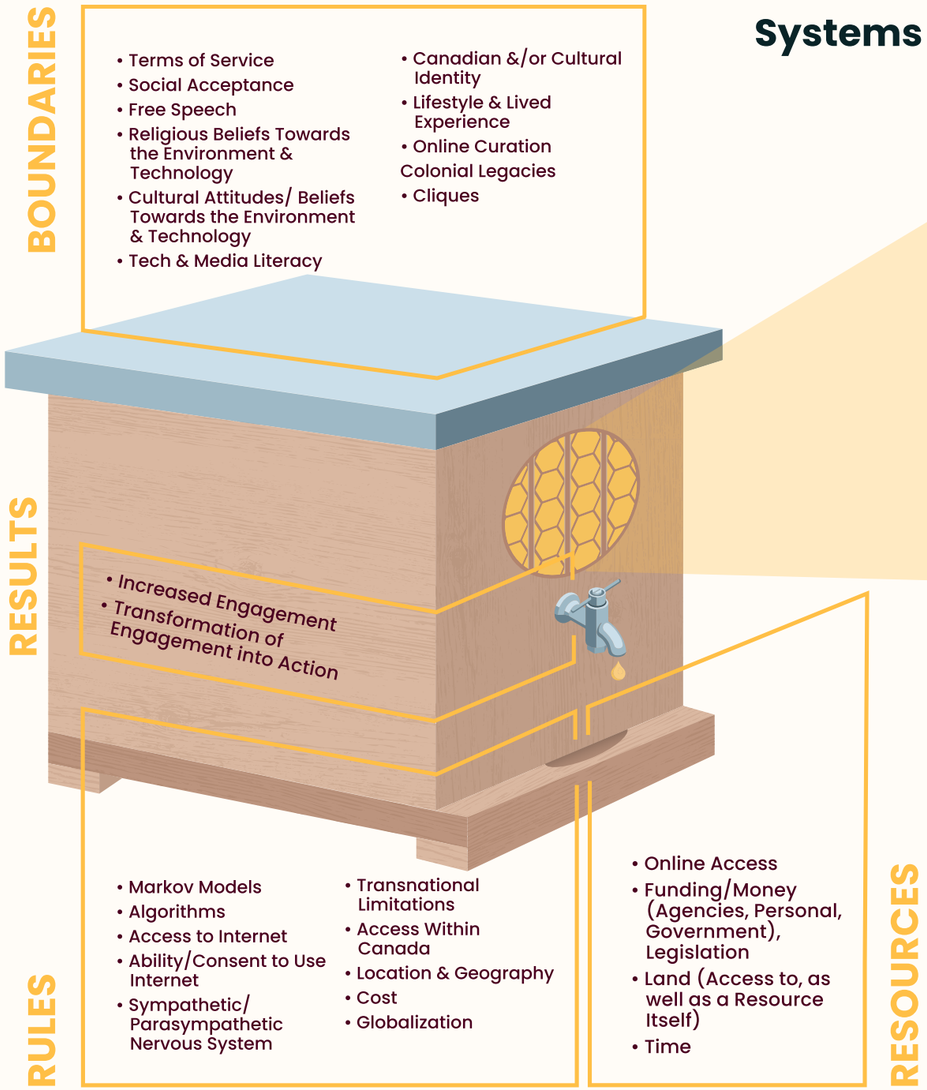
Eco-action: Defined by a previous Catamount Fellow, eco-action is an attempt to leave behind the colonial ideologies and perceived whiteness, associated with "environmentalism" (Al-Sachit, 2023). It is defined as an action that is taken to preserve, conserve, or support the environment (Al-Sachit, 2023). It isn't limited to big grand acts. Eco-action can be as simple as planting native plant species and being aware of/ reducing power usage.

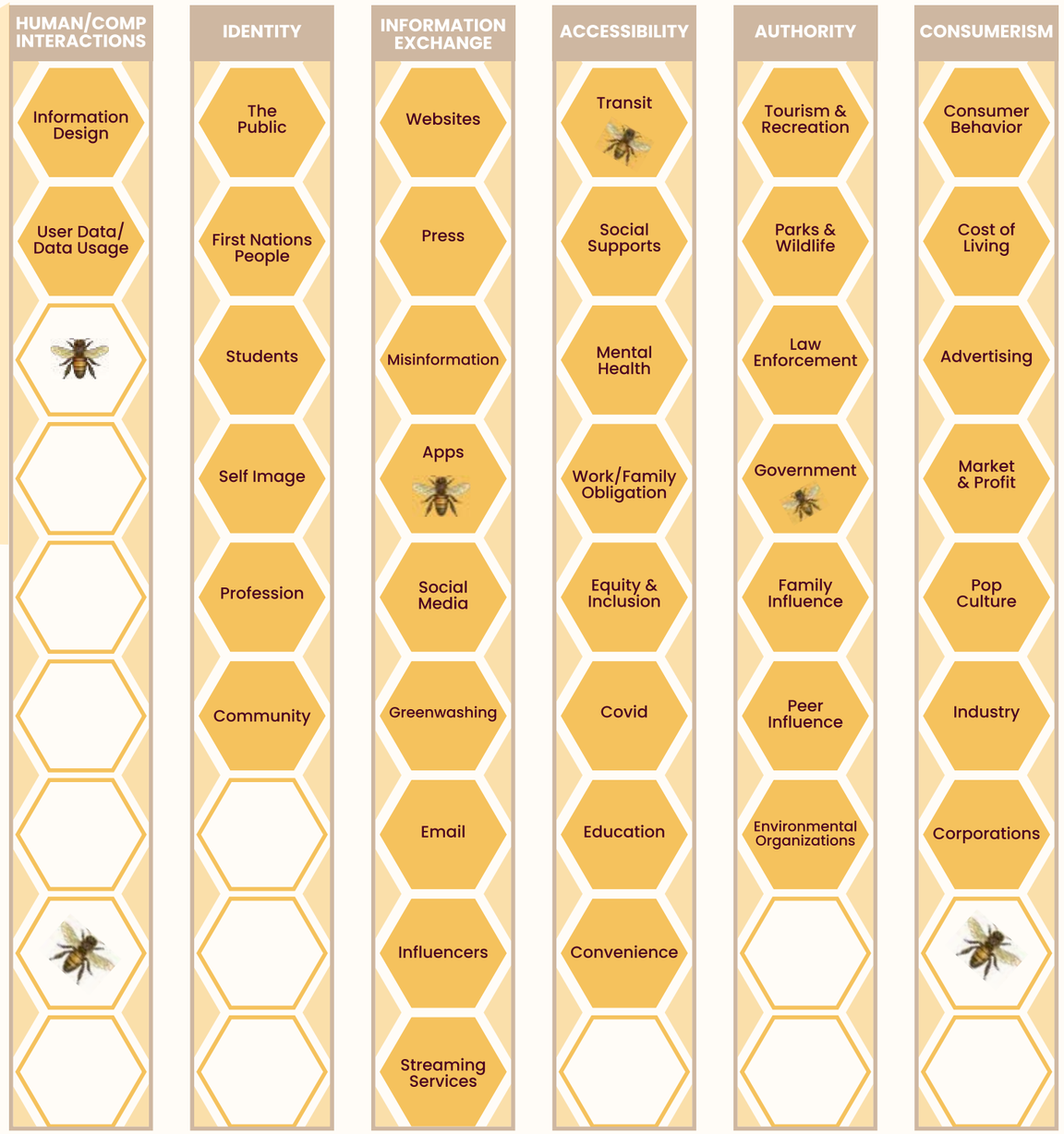
Applied Action: This refers to being actively and dynamically engaged while also directly applying the effort towards a problem. Much like applied knowledge, it's putting knowledge into practice (Commonwealth of Learning, 2018).



4 (Bush, 2024)

Systems Hive





Bee hives have an organized structure laid out in layers of honeycomb, with the queen typically residing in the back of the hive. Human-made hive boxes tend to have a single entrance into the area where the hive is kept. This is what makes the honeycomb reminiscent of a system. The roof of the hive box acts as the boundaries of the hive; there is no access from the roof, just as a system has its boundaries and limits. Similarly, the wall containing the entrance to the hive is the rules by which the system operates; you can enter, but there's rules and guidelines to follow. This is also where resources enter the system (and, in some modern fancy hive boxes, where the honey, the results of a system, flow from). The different aspects or components that contribute to the system(s) at play are represented by the different layers of comb, with each layer becoming more ingrained, more systemic as it goes deeper into the hive.

The hive reflects individuals, communities and systems themselves: how each bee may have its own path through and amongst the hive, but it still interacts with the entire hive and all aspects of it. The path of each individual bee may not be the same as its sisters, but every bee will likely at some point in its life come in contact with any and every comb in the hive.

OF HIVE AND HARM

Just like a honeybee hive, the entrenchment of the social sphere in the online realm has many sweet bounties, as well as many devious detriments. The internet has created notable routes of access, each as nourishing to the community as the honeycomb is to the hive. Information, nearly any piece of information, is a mere click away and can now be shared and spread at almost alarming speeds to much wider audiences. Networking is made much simpler and staying in touch with friends, family and colleagues has never been faster or easier. Finding a community has been made much easier. This has been vitally important for equity deserving communities for finding a sense of belonging and solidarity (Marlowe et al., 2017). The semi-permanence of the online realm has also forced public figures (such as politicians, celebrities and even reporters) to be more transparent and accountable for their actions. One example of this is the online backlash of a reporter for depicting protesters in Australia as unrepresentative anti-government rhetoric; a blogger called out the lack of proper coverage of the protest, which led to an online public outcry resulting in a public apology from the editor of the initial article (Bailo & Vromen, 2017).

However, just as the hive is home to the bee colony, it can also house parasites that can slowly corrupt and lead it to dreadful ruin. Negative consequences and harm can also arise from this online entrenchment. These can take form in patterns of inhibition and distrust: Disinformation and Misinformation, Diffusion of Responsibility, and Media Saturation Overload to name a few. Like how parasites can affect how a hive behaves and operates, these patterns can affect how people engage and interact online with each other, with media, with information and with technology.

Misinformation: The unintentional misguidance or misdirection from the truth (Andrei et al., 2020).

Disinformation: The deliberate spread of false information meant to discredit or diminish someone, some product, some idea and so on. It is an intentional deception and obscuration of the truth, e.g. propaganda (Andrei et al., 2020).

Disinformation and Misinformation

One of the most obvious types of harm, the misuse of information is prevalent and detrimental (Vicario, 2016). The spread of misinformation commonly occurs via people skimming articles or posts without critically thinking about the information, or even just not reading the whole thing, and going on to share their (often incorrect) interpretation of the information (Marei, 2023).

Sometimes a means of clouding the truth and sometimes merely arising from misinformation, conspiracy mentality is very commonplace in this era, an era defined by anxiety and confusion about what can be accepted as fact or opinion with a blurred line between truth and falsity: a post-truth era (Andrei et al., 2020). Engagement, especially in an online environment largely operates on social trust. Disinformation has been shown to have a negative impact on social trust. Partial truths, which can be more dangerous than out-right deception, can be considered either misinformation or disinformation.

Diffusion of Responsibility

Think disposable straws. The decision by many corporations and/or governments to not allow single-use plastics like straws are often criticized for putting the ownership of the issue on the general populace. The criticism is that corporations produce much more waste and pollution than the consumers themselves, yet the pressure to reduce use is put onto the consumers much more than the corporations (Park, 2022). This isn't to say that efforts to reduce waste aren't beneficial or a bad idea, but that the shifting of responsibility onto others is less effective, less efficient, and generates opposition that can be weaponized as attacks on personal freedom.

Corporations are not the only culprits of diffusion. Personal responsibility is also diffused with thoughts such as "someone else will do it". In this sense, when we believe someone else will act, we feel less pressure to act ourselves be (Beye et al., 2017). This is also known as the bystander effect be (Beye et al., 2017). When we choose not to act, it grants us a means to ignore our conscience, leading to an escape from guilt. A simple example of this is not changing the compost or garbage when the bag is full and piling your garbage on top. A harsher example is not standing up when someone else is being bullied and discriminated against.

Headline Anxiety: A form of anxiety brought on by the bombardment of aggravating headlines and modern headline trends. Sometimes this becomes obsessive and intrusive (Huff, 2022).

Doomscrolling: The act of habitual, immersive scanning through an excessive amount of negative news and media, usually spending an undue, obsessive amount of time browsing. (Satici et al., 2023).

Media Saturation Overload

Online news media tends to rely on shock, spectacle, scandal, and sex for clicks and views (Huff, 2022; see also Bailo & Vromen, 2017). This, along with the sheer number of events, amount of information and material on the internet, can lead to Media Saturation Overload (Huff, 2022). This overload can either hypersensitize an individual, or desensitize them. While sensitization of either form can happen either intentionally or unintentionally, it does seem to be compulsive (Riddle et al., 2018).

A hypersensitized individual essentially has their threshold for an emotional response decreased, leading to an overwhelmed, paralytic response. This type of response often manifests as "doomscrolling", "headline anxiety" and while not new, has become unrelenting (Huff, 2022).

Conversely, a desensitized individual's threshold has increased, leading to a decreased, absent, apathetic or dissociated response. Desensitized and dissociated responses typically happen as a defense mechanism to protect oneself from overwhelmed responses (Swaim, 2022). Media Saturation overload has been shown to induce depression and PTSD-like symptoms (Riddle et al., 2018; see also Swaim, 2022). Binge watching, is a more modern version of a desensitized overload (Riddle et al., 2018). Sometimes an overload is sought out in an effort to intentionally drown out worries and frustrations, much like how some addictions rise (Riddle et al., 2018).

These patterns of inhibition give rise to feelings of hopelessness: apathy, dread, grief, guilt, inundation and isolation (Statistics Canada, 2023b; see also Kelsey, 2020; Huff, 2022; Satici et al., 2023). They can be stunting and paralyzing towards applied action.

"...If we are unable to be in touch with ourselves, to understand the cause of our suffering, fear and anger, then we are not in communication..."

-Thích Nhất Hạnh, How to Connect

OF FEEDBACK AND FERTILIZER

Feedback loops can compound feelings of hopelessness. Like adding fertilizer to soil, feedback loops can create an environment that is prime for cultivating despair, as well as perpetuating it. Feedback loops occur when an output of a system circles back and becomes an input for the same system. They can exist in two forms: positive and negative. Positive feedback loops lead to an amplifying effect, while negative feedback loops lead to an inhibitory effect (Johnson et al., 2019). Note that either of these can be harmful or beneficial; just because it's called a positive feedback loop, does not mean it's good.

Porous Boundaries

When we consider relationships, there is a sense of access that is granted to those involved in the relationship. There are some boundaries that are set and some expectations and exceptions made which are usually dependent on the relationship itself. For example, a manager may be expected to only call during work hours, while an intimate partner may be able to call any time. The inappropriate involvement which occurs due to the breach of relationships boundaries is referred to as a porous boundary (Ekström & Shehata, 2018). Relationships online not only have the possibility to become porous boundaries, but may be more likely to do so: in fact, online relationships are often characterized by less firm boundaries than offline relationships (Ekström & Shehata, 2018). They may occur between individuals who know each other, complete strangers, or between individuals and movements/ events and spaces (Ekström & Shehata, 2018). Porous boundaries may stem from a lack of consequence online and/or increased risk of consequence in person, meaning people may feel hidden behind their keyboard and more confident to act when they may not otherwise because of a lowered threshold of action (Ekström & Shehata, 2018). They may feel compelled to act because they can "get away with it". However, porous boundaries may have a benefit too. An individual may be compelled to act for good when the threshold to act is lowered. Getting involved with applied action, environmental or otherwise, is structured by boundaries that may both restrict or enable participation (Ekström & Shehata, 2018). Furthermore, porous boundaries between movements and spaces may allow an individual to engage in one form of action when already introduced or involved in another (Ekström & Shehata, 2018). Joining in on environmental efforts is demanding of time and effort and lowering the threshold may make it easier to meet that demand (Ekström & Shehata, 2018).

Media Literacy and Knowledge Management

The Paradox of Ignorance, also known as the Dunning-Kruger effect, can be a reason why media literacy and information and knowledge management feedback loops are so difficult. This effect states that an individual's lack of knowledge can lead them to overestimate their competency (The Decision Lab, 2021). Essentially, people don't know what they don't know: the people who need more literacy or management are the people who don't know or don't think they do.

Media Literacy: The ability to critically analyze and digest media, as well as the stories, information and data presented within it in an effort to assess their accuracy and credibility (Dictionary.com, 2024d). Some of the ways this can be done is by fact checking, differentiating fact from opinion, checking and critically thinking about the recency of the information, sponsorships and funding, methods of data collection and presentation and opposing views.

When people don't know much about a given topic, they typically lack the knowledge and skills to spot gaps or mistakes in the knowledge as well (The Decision Lab, 2021). People tend to believe confident people and may mistake confidence for expertise (The Decision Lab, 2021). This may coincide with an abundance of misinformation as a trust in confidence may further fuel the divide between what people think they know (and think they know is true) and what actually is. Over-confident people are more likely to pursue positions of power, and are very resistant to being taught (The Decision Lab, 2021). This is why it is always a good idea to check credibility and include diverse voices. Bees are another example of this: people hear bees are on the decline and rush to save honey bees. However, honeybees are technically themselves an invasive species and displace native species, actually contributing to the decline (Chapman & Bourke, 2001).

The desire for knowledge combined with inadequate knowledge management often feeds conspiracy theories. Many conspiracy theorists actually have epistemological motives, a thirst for knowledge and answers, that are consistent with their understanding when confronted with uncertainty (Douglas et al., 2017). This essentially leads them to taking up beliefs and explanations for things because they don't like it when there is no explanation, don't agree with the explanations given, or given contradictory information (Douglas et al., 2017). Many Canadians believe it is getting increasingly harder to tell the difference between true and false information, with 1 in 10 not knowing how to fact-check information (Statistics Canada, 2023b). Notably, how media is consumed, habits and sources, may also have an effect on how facts are checked (Statistics Canada, 2023b).

Knowledge Management: Refers to how someone identifies, organizes, stores and disseminates information they gather and how they may or may not relate to one another (Guru Technologies Inc. 2024).

A lack of media literacy and knowledge management isn't the only problem either. Media is meant to be consumed, and much like a ravenous forest-tent caterpillar, people consume, consume and consume. There is so much out there to consume, that often people barely digest what they consume. They only retain pieces of information rather than the whole concept, or latch onto a phrase and what their interpretation of it is. The shock and awe click bait mentality that leads to headline anxiety is a good example of this. **People confuse access to information with knowledge.** That is to say, that people have difficulty differentiating knowledge, which is stored internally (as are memories) and information which is stored externally (Ward, 2021). This confusion stems from overconfidence as well, in the sense that a person feels they are likely to recall the information in the future (Ward, 2021). With the internet almost always at our fingertips, it is often faster to do a Google search than it is to recall learned information (Ward, 2021). This can have profound effects on people's ability to critically think, draw parallels and problem solve.

Notably, the Dunning-Kruger Effect can also have an opposite effect, leading people who do have skills and knowledge to underestimate themselves or overestimate the skills of others (The Decision Lab, 2021). This may be why some people perceive eco-action as easier to perform than others.

How information is sought out also may have an effect. People tend to follow four patterns of information seeking: Domain-Grounded, Data-Enthusiastic, Data-Cautious and Information-Avoidant (He et al., 2023). Information-Avoidant habits may lead to inundation, where the body and mind respond by shutting down and disengaging, and in order to avoid distressing situations and emotions such as this, the Information-Avoidant steer clear of new information (He et al., 2023). Alternatively, one may develop an over-inflated certainty of doom.

Patterns of Information Seeking[5]

Domain-Grounded	Experts with skills in interrogating data and critical thinking, but weary of external interpretations.
Data-Enthusiastic	Intrinsic interest in data and will seek external aid in interrogating it.
Data-Cautious	Receptive to new information but have concerns regarding trust and bias.
Information-Avoidant	Intentional resistance to new information and do not seek data.

Echo Chambers

Social media can be toxic. One way around this is by blocking troubling individuals and muting undesirable terms. This curation of social media can create a space that is more comfortable and less stressful for engaging, which can be extremely helpful for combating feelings of hopelessness. However, it can also give rise to one of the tritest examples of positive feedback loops: echo chambers.

Echo chambers: Environments that reflect one's own opinions or information that agrees with their beliefs.

Personal opinions are amplified when they are the only thing being supported and shared. This can go hand-in-hand with confirmation bias, the tendency to seek out information and data that supports one's own beliefs (Satici et al., 2023). As such, echo chambers commonly arise from the exclusion of outside perspectives, information or voices. The closed nature of echo chambers also provides a prime environment for the spread of misinformation, and for sowing disinformation. This in turn makes echo chambers a prime vehicle, the primary vehicle even, for the spread of conspiracy theories (Vicario et al., 2016). These theories can range from "scientists and politicians are hijacking data for their own gain" to the wild "birds aren't real, they are surveillance drones"; some are easier to believe than others, which can only make them more dangerous.

Greenwashing

Incentivization can be a good way to get people involved in action: if they get something out of it, or it's no extra effort, they are more likely to do it. This is what makes buying "green" products so appealing: if you have to buy stuff anyway, might as well buy a soap that saves birds, or tissue paper that promises to plant a tree for every 1000 boxes sold. These promises can often be dangerous feedback loops in the form of predatory manipulation (Natural Resources Defense Council [NRDC], 2023a).

Green washing is an intentional deception, misleading consumers who are motivated to purchase environmentally conscious products/services (NRDC, 2023a). This diversion of motivation can become a feedback loop because it draws people into a false sense of duty, giving them a feeling of satisfaction which in turn will further motivate them to keep up the green washed behavior instead of putting it towards an actual cause.

Greenwashing: When a company claims to take environmental action, typically through misleading images and information, as incentive to buy their product, when the action doesn't actually exist or come to fruition (NRDC, 2023a).

5 (He et al., 2023)

Algorithms

Platforms like YouTube, X (formerly Twitter), Snapchat and Facebook, while designed for sharing, are also designed to promote popularity, designed for consumption (AIContentfy, 2024). As such, algorithms modelled for this kind of behavior tend to be feedback loops themselves, sharing only the popular content, which in turn drives creators to create similar content to catch on to the trend. For the same reason, algorithms are also prone to promoting misinformation as well (AIContentfy, 2024).

Trending popular content is a major driver for social media. More interactions for a post mean more money, whether it is for the platform, for influencers, or for third parties. But money isn't the only desirable outcome of popular content. Popularity itself is too. Generally speaking, people want to be popular. People want to feel important or notable or influential. One way of doing this is philanthropy, or many cases, the appearance of philanthropy, the illusion of goodwill. People can essentially greenwash themselves by presenting a persona to the online realm that they care about the environment simply for the clout, like this story of an influencer on a beach being filmed picking up trash, only to leave the trash bags on the beach when done (Talintyre, 2023). Interestingly enough, the story itself became algorithm fodder too. However, the problem doesn't stop at unjust influencers. Anyone wishing to actually help out can fall into a similar trap.

As mentioned, liking and sharing a post can get word of the cause out to a wider audience, and this is undoubtedly beneficial. However, it may also give a sense of satisfaction of contributing to a good cause and preventing further effort. The seemingly simple act of clicking a button has the potential to relieve oneself of guilt and further responsibility (Kicinskas, 2015). This mentality, intentional or not, is termed "slacktivism" and puts into question what counts as activism and the need to critically evaluate methods of activism.

Part of what makes online systems like social media difficult is that they are (pseudo)randomly changing systems with little-to-no stability (Chen et al., 2018). Engagement is based on what is happening at the time with no bearing on past states (Chen et al., 2018). This, combined with porous boundaries, can lead to a "tune-in, tune-out" nature of engagement online (Ekström & Shehata, 2018). This common pattern of engagement is characterized by periods of engagement intertwined with periods of disengagement (in contrast to being either permanently engaged or permanently disengaged) (Ekström & Shehata, 2018). Periods of disengagement may be due to isolation; it has been shown that the chance of social isolation nearly doubles when using social media for more than two hours per a day (Murthy, 2023)

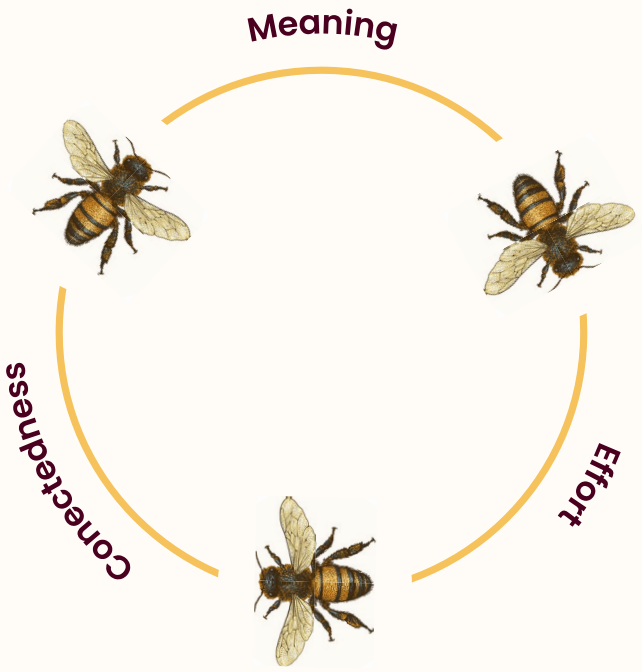
Slacktivism: Portmanteau of "slack" and "activism". It is characterized by supporting causes online in ways that require very little effort or commitment, such as likes, favouriting, or sharing and not taking action any further (Dictionary.com, 2024e).

Some social media sites, like Facebook, have a significant effect on collective efficacy (Halpern et al., 2017). Collective efficacy is the ability of a group to organize itself well enough to produce action. Other sites, like Twitter, had a significant effect on internal efficacy (Halpern et al., 2017). Internal efficacy is the ability to organize and act on the individual level (note this study was done before Musk's acquisition of Twitter). It is also important to note that efficacy may also be due to structural elements of a social media platform, such as the design and user interface.

These feedback loops in addition to perpetuating and fostering feelings of hopelessness, confusion, overwhelm, and apathy, have two key inferences. The first is that while feedback loops can provide lots of insight into a system, they often result in surface level or superficial engagement. The second is that they, especially social media, focus on information but not production or action (Ekström & Shehata, 2018). That is to say, they cultivate more access, but less connectedness. If we look at the definitions, "Access" is merely the availability of something, whether that's information, community, resource, etc (Dictionary.com, 2024a). "Connectedness" however can be thought of as a kinship, significance or a link: a state of belonging (Dictionary.com, 2024b).

OF CATALYSTS AND COMB

How can we cultivate connectedness from the seeds of access? Effort. Effort creates meaning. Sometimes the easiest solution isn't the best or most impactful solution. However, this is a bit of a paradox itself: if meaning requires effort, but effort requires connectedness, and connectedness requires meaning, where does the meaning come from? It isn't spontaneously formed, at least in the sense of "from nothing".



A common assumption that's made about engagement is that people are either statically motivated or unmotivated and that means of motivation do not change (Chen et al., 2018). While this assumption may make it easier to conceptualize or measure engagement, people and their motivations are dynamic. Motivation is required for effort, which can fuel changes in behavior (He et al., 2010). These changes are not a single event, but instead a series: Precontemplation, Contemplation, Preparation, Action and Maintenance (He et al., 2010). The Precontemplation stage is where an individual is unwilling or unaware there is a problem or need for motivation, while those in the Contemplation stage acknowledge the need (He et al., 2010). The Preparation stage typically involves a cognizant plan for action and the Action stage is execution of that plan (He et al., 2010). The Maintenance stage involves sustained motivation (He et al., 2010). Failure to sustain may result in relapse, leading to a reversion in stages (He et al., 2010). There are a few key ways to generate motivation in individuals: Self Image, Peer Recognition and Reciprocity (Chen et al., 2018).

Reciprocity

Reciprocity can nourish a sense of belonging, accountability, trust and empathy (Murthy, 2023). A sense of solidarity can arise when an individual or a community has offered and provided assistance to an individual and the individual wishes to return the favour (Gouldner, 1960). Support networks can arise from strong social connections and high levels of social participation (Murthy, 2023). However, reciprocity has been shown to only boost people at low motivational states to medium motivational states (Chen et al., 2018).

Reciprocity has been shown to be a self-serving means of motivation. While typically thought of negatively, self-serving isn't necessarily bad. People often conflate self-serving with selfishness. However, selfishness and self-serving are not exactly the same thing: selfishness is self-interest at the expense of others (Lazarus, 2018). If people are going to act in self-interested ways anyway, the mutual nature of reciprocity may help spread accountability, trust and empathy further with little effort. Reciprocity has also been shown to be more automatic

than other self-serving means of motivation. This is important as it suggests that reciprocity requires little effort or thought. It also suggests that reciprocity might be driven by a motivation to appear fair, rather than to be fair (Katzir et al., 2021). This may seem like a negative at first, however, good work is still good work regardless of intent; building habits, even out of the desire to appear fair, can make it easier to become fair.

Peer Recognition

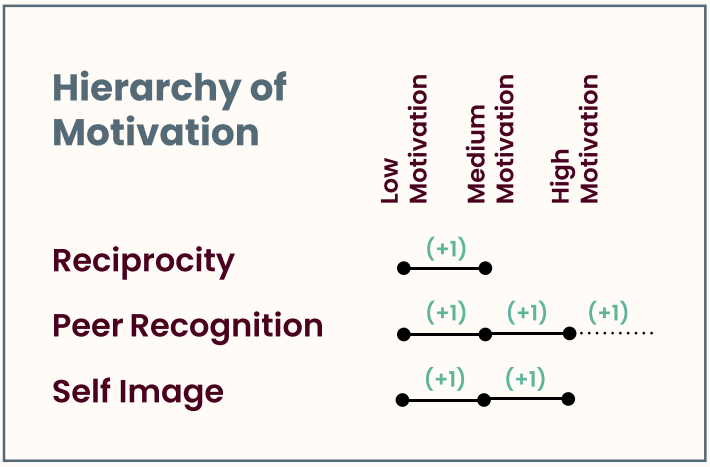
Known to help boost an individual to a higher state of motivation regardless of their current state of motivation, peer recognition is beneficial in that it can affirm one's knowledge, skill, experiences, effort and role(s) within a community (Chen et al., 2018; see also He et al. 2010). It also can increase morale. This may be why it seems easier to engage in action when others around you are also engaging. It feels good to be recognized for hard work, and eco-action is hard work. Even small efforts can be difficult to keep up. However, when someone recognizes and mentions the work you're doing, or even pitches in, the work becomes less daunting. It seems effectiveness even increases in large groups!

Self-Image

The personal view one has of themselves, interestingly, has no effect on individuals already in a high state of motivation (Chen et al., 2018). As self-image is concerned with the way a person is perceived, self-image is effective in motivating contribution. Self-image is also an important driver for participation on social media as people tend to care how they are perceived (Chen et al., 2018). This may have a connection to clout and relieving one's own guilt. This in turn puts into question what counts as activism and the need to critically evaluate methods of activism. Self-image may have a connection to the problem of individuals not seeing themselves as part of the ecosystem, and why people who do already view themselves as part of the ecosystem seem to have less trouble becoming motivated to calls for action. The causes of hopelessness and isolation may have a shared root: people distancing themselves from/not seeing themselves as part of the ecosystem.

Reputation

Reputation can be considered both peer recognition and self image. Interestingly, people in higher motivational states respond well to demands of knowledge (Chen et al., 2018). This may be why occurrences such as community conversations are so effective at generating not only answers and discussion, but a sense of kinship. Conversations like these can also happen online in the form of forums like Reddit. Reddit has been known to stimulate comradery among participants, likely because it can be a place to have one's opinions and/or knowledge recognized by others, and therefore appearing as a person of influence. They may also feed motivational states by creating scenarios of reciprocity where others feel the need to contribute to posts because someone contributed to theirs.



Honeycomb is symbolic of strength, unity and community. Community can be great for initiating interactions between individuals, and in turn motivating them. It is important to note that there is a positive side and a negative side to concepts in this paper, and motivation is no exception. For example, reciprocation can also be applied to acts of harm, the drive for an inflated reputation and self-image can lead to states of greed or narcissism (Gouldner, 1960). Likewise, the benefits that may be seen from porous boundaries appear to only work for less demanding engagement, not collective action (Ekström & Shehata, 2018). Motivation by positive or negative means (though especially negative) are governed by systemic roots.

OF WAX AND WANT

Like deep, embedded taproots that we can't simply weed out, these systemic causes and stories are anchored so firmly that societies are built on them, governed by them: capitalism, consumerism, anthropocentrism and racism. They can lead to a lack of time, money, uncertainty, and other barriers that may prevent people from contributing to ecoaction efforts (Dailey, 2008). It's worth mentioning that all of "the isms" obviously play a role in nearly all problems, including the one this report is exploring. However, in an effort to keep things concise, the concepts previously highlighted will remain the focus.

The "isms": While not always considered negative, the isms refer to distinctive, oppressive, discriminatory and harmful belief, theory, ideology and/or story (Dictionary.com, 2024c). They often tend to be based in stereotypes, fear and ignorance. They include sexism, colonialism, racism, ableism, sizeism, elitism, classism, and more.

Anthropocentrism

In a philosophical sense, anthropocentrism is the belief that only humans have intrinsic value (Goralnik & Nelson, 2012). That is to say that we think, consciously or not, that we are the center of the universe; that nonhuman lives and relationships are often deemed negligible for decision making (Goralnik & Nelson, 2012). This systemic belief is directly linked to the cognitive bias of people not viewing themselves as part of the ecosystem and is a main concern of environmental philosophers (Goralnik & Nelson, 2012).

This belief posits that the planet and all its workings, the wood, the metal, the animals, the food are for our consumption (Goralnik & Nelson, 2012). This belief, wedded to capitalism, has fueled globalization. It has also been used to justify slavery and colonialism: If some people aren't considered people, thought of as "less than people", they become a resource (Ruane, 2019). Resources are for consumption: everything that is not us, is for us.

Racism

While some issues here may not pertain solely to Black, Indigenous and other non-White communities, they do disproportionately affect them (NRDC, 2023b). These communities at risk have been historically displaced and even eradicated in the search for new properties to claim, more resources to consume and labour to exploit, an act that hasn't stopped in today's age. Gentrification can displace such communities as the cost of higher end residential and commercial real estate developments becomes too much. These developments are often favoured over park/green space as well, and as such many of these spaces end up exclusionary (Anguelovski et al., 2018). Degentrification typically involves the disproportionate building or relocation of industrial developments and unwanted land uses (such as landfills) in and around communities at risk (NRDC, 2023b; see also Al-Sachit, 2023 and Anguelovski et al., 2018). These acts, dubbed Environmental Racism, undoubtedly affect how communities at risk interact with ecosystems and eco-action efforts (NRDC, 2023b; Al-Sachit, 2023).

In addition to factors that may hinder applied action, the internet is also prone to socio-economic factors that hinder access and use by communities at risk (Dailey 2008). As such, both physical and digital spaces may be rendered uninviting and exclusionary to communities at risk. These reasons are why it is so important to include the voices and efforts of equity deserving individuals in the effort to address our ecological crisis.

Capitalism

We are expected to get a job so we can afford to buy things. We are expected to buy things. Not just material goods to satisfy our basic needs. It's about capital, about accumulation and unsustainable growth (Harris & Delanty, 2023). It involves competitive markets, private property, and labour (Harris & Delanty, 2023). The cost of adopting and adapting to new technologies can become a barrier (Dailey, 2008). This not only includes technology itself, but maintenance and access (in terms of regular vs high speed internet, subscriptions, etc.) as well (Dailey, 2008).

If we don't live up to these expectations, we are considered a plague on society. So much of our time, effort and money goes to meeting these expectations that space for leisure and environmental action is limited. Sometimes, there is no allotment because capitalism has demanded everything. This is often why homelessness is considered a blight: they don't have capital. They are unable to contribute to the system, and so the system does not want them (Harnish, 2016). They are often considered "less than". Green spaces are often made less enjoyable by the addition of hostile architecture and design for this reason as well. The demands on our lives by capitalism often lead to a lack of time and money for people to engage in applied eco-action (Dailey, 2008). This may be a cause of the slacktivism feedback loop. Social good is a big driver of capitalism, but "good" is subjective.

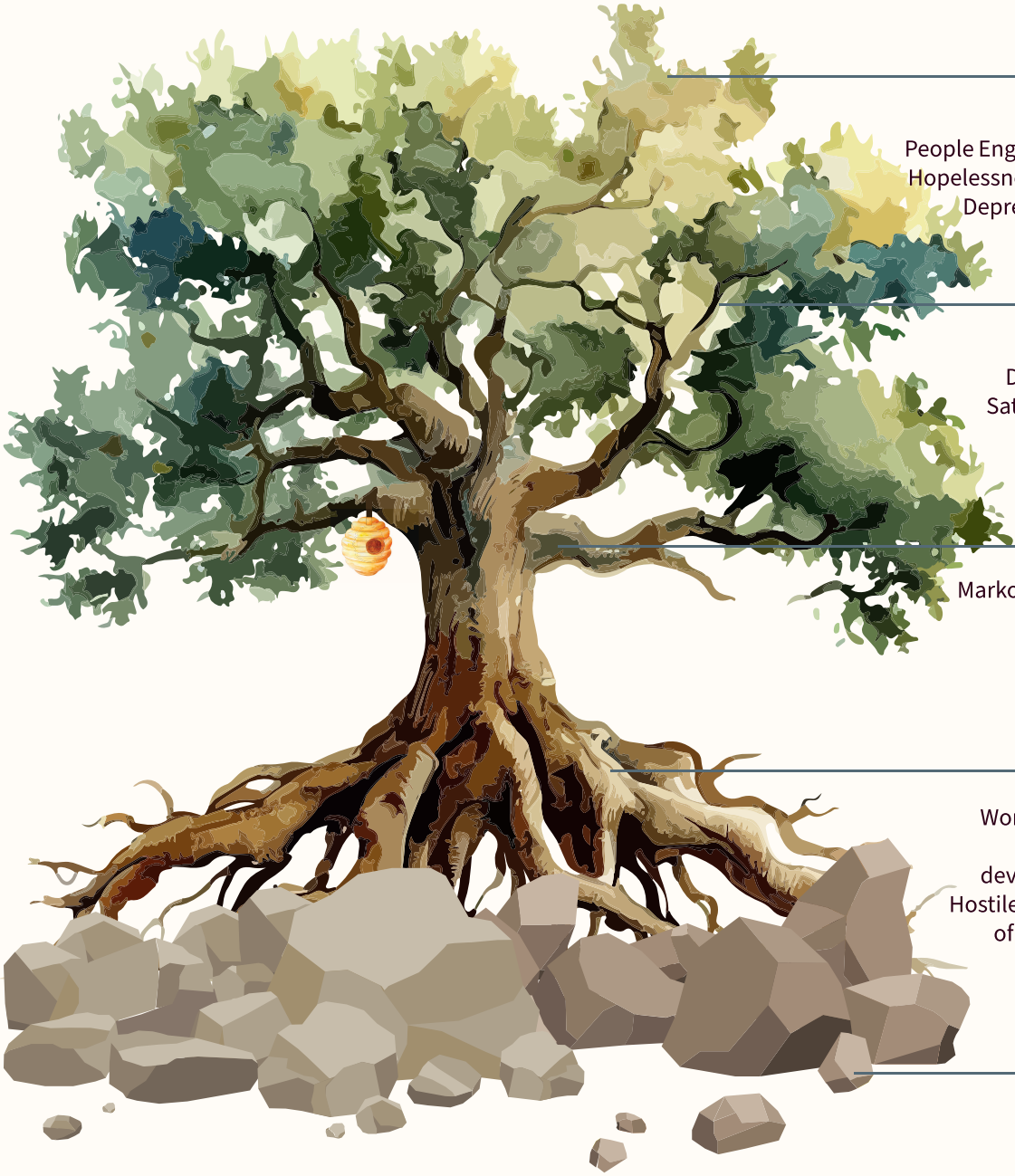
Consumerism

Both capitalism and consumerism are about ownership. Social status drives need and greed, which drives ownership which drives consumption (Zhu et al., 2019). Currently the economy is largely based on a linear model that drives anti-environment ways of consumption: we extract resources, create goods, sell goods, use goods and throw them away when we are done. In this linear system, there is a definite beginning and a finite end (as opposed to a circular economy which tries to utilize discarded goods and give them new life) (Sariatli, 2017). The "emphasis of economy over environment" further separation of the two, creating a deeply rooted feedback loop (Susuki, 2012). Conservation itself gave a foothold to Industry, arguably the biggest adversary to the environment, due to conservation's focus on management (Shutkin, 2021). This brings traditionally Western conservation more in line consumerism and separates the environment even further (Shutkin, 2021). Since our economy is based upon capitalism and consumerism, the online realm has followed suit: from shopping and promotion, to advertising and entertainment.

Honeycomb, the home of a hive, is made of wax. While being a sturdy and strong building material, it is also mouldable. This makes it an apt metaphor for transformational change: change that is not surface level, but affects the very foundations of the system. Many acts can induce temporary change, but are not adequate at getting to the root of a problem, like these systemic issues. Leverage is needed at critical points in a system in order to induce true, transformational change, to mould it from one form to another.

"We try and cover up our feelings of emptiness by consuming things…"
-Thích Nhất Hạnh, How to Connect

Arboriculture Systems Model



Events

People Not Engaging Offline, People Engaging Only Online, Feelings of Hopelessness: Inundation, Grief, Apathy, Depression, Fear, Isolation, Anxiety

Patterns

Diffusion of Responsibility, Doomscrolling, Binging, Media Saturation Overload, Conspiracy Theories, Misinformation, Disinformation

Structures

Markov Models, Porous Boundaries, Green Washing, Algorithms, Echo Chambers, Paradox of Ignorance, Media Literacy and Knowledge Management

Mental Models

Work/ Life Balance & Obligations, Corporate Preferences (for development over green spaces), Hostile Architecture, Western Norms of Gardening and Conservation, Industry and Competition

The "isms"

Capitalism, Consumerism, Anthropocentrism, Racism

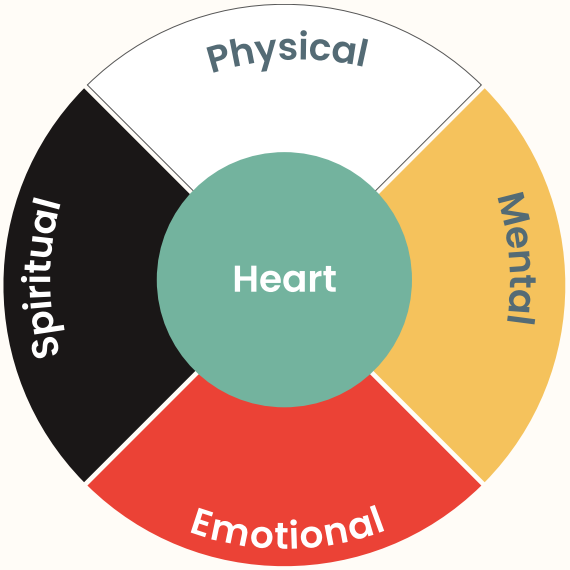
This Arboriculture Systems Model (adapted from the Tree Model (Andres, 2024)), is a robust model depicting a systems and components at works. When we see a tree, we typically focus on the foliage. However, there are branches holding up the foliage, connected to a sturdy trunk. We don't often pay attention to the roots of a tree unless they are negatively affecting our path or foundations (think of roots breaking down the concrete foundations of a house). Yet, the roots feed the foliage: the events we see are directly linked to the mental models. Furthermore, other systems may be linked in ways we aren't often aware of. Other trees may have roots entwining underground. These systemic roots not only grow deep, but may also be anchored, curling around boulders underground. Systemic legacies may try to establish themselves in a effort to spread further and/ or find stability when an attempt at change is made, like saplings rising from the roots. Smaller systems may depend on larger systems, like flowers sprouting in the shade of a tree. It's important to note that no systems model is perfect, but they can help us see the forest for the trees (Andres, 2024).

OF HEART AND HOPE

If the trends that lead to disengagement can be traced to social and cultural habits, and consumer logic that conditions individuals is promoted by Western/ settler culture, then perhaps one way to move beyond that is to look to traditions outside of the dominant Western culture. This section explores how Indigenous and Buddhist insights nurture heart and hope.

Traditionally, Western approaches treat problems as distinct and discrete things; extrapolated data and models separate from each other and separate from us. While this does make them easier to study, it does not reflect the actual nature of the world (Marchand et al., 2020). Everything is part of an ecosystem, including us. This makes Western approaches isolated and decontextualized from the land (Marchand et al., 2020).

Some Medicine Wheel teachings focus on the balance of 4 aspects: the physical, the mental, the emotional and the spiritual (Dion Simon, Maskwacis, Ermineskin Band First Nation, Treaty 6 territory, personal communication, February 27, 2024). Everyone tends to gravitate more towards one aspect, also known as a "Door", than the others (Dion Simon, personal communication, 2024; Wenger-Nabigon, 1996). For example, individuals that reside more along the physical Door, tend to rely on data and evidence, while others may reside more along the emotional Door, relying more on how and what they feel (Dion Simon, personal communication, 2024). These Doors revolve around a center known as the heart, the burning fire of the self (Dion Simon, personal communication, 2024; Wenger-Nabigon, 1996). The more balanced an individual is, the closer to the heart they are, balanced between the Doors. The more unbalanced the aspects are, the further from the heart they are (Dion Simon, personal communication, 2024). When they are unbalanced, negative counterparts of the Doors arise, known as "Rascals" (Wenger-Nabigon, 1996). People can fall victim to the Rascals, and are especially prone to the Rascals that aligns with the Door they gravitate to (Dion Simon, personal communication, 2024). When succumbed to a Rascal, an individual experiences negative states of being they create (Wenger-Nabigon, 1996). Imbalances in the physical are felt in the body, with the Rascal of apathy creating anger, dread and anxiety. The Rascal of inferiority rises from imbalances in the mental and are embodied in the mind, such as doubt, distrust and apprehension. Imbalances in the emotional manifest as things such as prejudice, contempt and guilt (Dion Simon, personal communication, 2024). The Rascal of the emotional is envy (Wenger-Nabigon, 1996). Imbalances in the spiritual can be thought of more as a disembodiment, in the form of isolation, bewilderment or desolation created from the Rascal of resentment (Dion Simon, personal communication, 2024). Fear, the "father of all Rascals" resides between the physical and spiritual doors (Wenger-Nabigon, 1996).



It is important to note that many Western analyses of Medicine Wheels tend not to include the element of sacrality, likely because of the "lack of evidence" for such an element (Wenger-Nabigon, 1996). However, it is a key component of the Medicine Wheel and should not be left out and include an acknowledgement that the written word, especially by someone who is not Indigenous, can only grant a basic understanding of the concept (Wenger-Nabigon, 1996). With this in mind, the disengagement problem can be analyzed as a lack of connection and balance between the physical, mental, emotional, and spiritual.

Resources for bridging the gap between self and other (including non-human and non-animate others) and bringing balance between the aspects of our being as described in the Medicine Wheel can also be found in an emerging field called ecodharma (Loy, 2018). Buddhist meditations often draw upon the four great elements and what they represent in regard to our bodies: Earth (solidity and softness), Wind (mobility and support), Water (fluidity and cohesion) and Fire (heat and coldness) (Sayadaw, 1998). These elements are the same elements that are outside our bodies; they are one in the same, as are we with the ecosystem (Loy, 2018). This meditation practice helps cultivate an intimate connection between our bodies and the world outside them which we depend on (Loy, 2018). We are dependent on the sun, the earth, its waters and air. We are entwined with not only other humans, but non-human ancestors too: animals, plants, fungi and bacteria.

Meditations can help deconstruct and reorient ourselves (Loy, 2018). This can help us let go of the (usually self-preoccupied) habitual patterns of thinking, helping us think, experience and relate ourselves, the world, interconnections and motivations in a different way (Loy, 2018). This can lead to an enlightenment of sorts. A common Buddhist concept is that of the bodhisattva: a being that postpones their enlightenment, vowing to save all sentient beings and help them awaken, done out of compassion (Loy, 2018). However, this implies that the awakening of a bodhisattva's awakening is not separate, but connected, to the awakening of others (Loy, 2018). There is a call for not just work on the self (spiritual practices) but for active, social practices as well. Essentially, while meditation brings personal change, it can also foster indifference, and while activism brings effort, but can also foster agitation and instability (Loy, 2018). Combining both practices may produce goal-oriented behavior that gives way to less burnout (Loy, 2018). Keeping an open mind, free from preconceived notions–known as a "beginner's mind"–can be seen as a critical component of activist work, and avoiding any burnout (Nichols, forthcoming). Yet care must be taken to not let that become ignorance. The ecological crises of the world, such as climate change and habitat loss, are massive. It is easy to see them as bigger than we are and brush them off thinking that we cannot do anything about them (Macy & Johnstone, 2012). "Not knowing" or not paying attention to the complexity of the ecological crises makes it easy to feel that we as individuals are unable to make a difference, that any effort put towards them is ineffective or wasted. **However, our actions do have "ripples of influence" even if we are unable to see or comprehend how** (Macy & Johnstone, 2012).

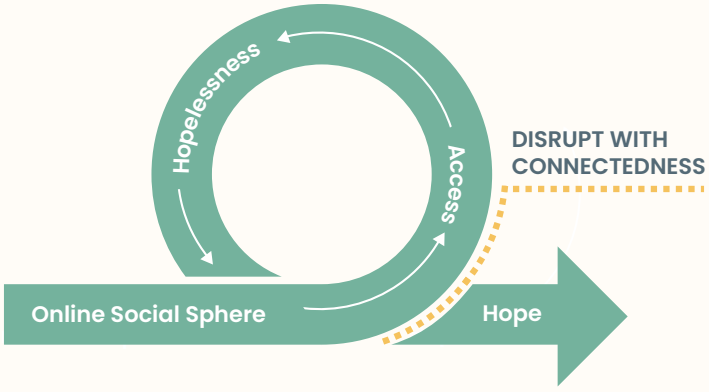
These efforts of inner work, work on the internal and the self, extending to outer work, mirrors the effort of migrating efforts online to efforts offline. Herein lies hope.

"...we see that human beings are made only of non-human elements... we see minerals, animals, plants, and other elements... If we were to remove the non-human elements, human beings would disappear."

-Thích Nhất Hạnh, How to Connect

OF SWARMS AND SOLUTIONS

People tend to consider circumstances hopeless if they themselves feel hopeless (Kelsey, 2020; see also Loy, 2018). Therefore, a simple sounding solution is that they need to feel that circumstances are not hopeless. How is this done? This paper has established that hopelessness, and the feelings associated with it, arise from feedback loops. These feedback loops reveal that the entrenchment of the social sphere in the online realm has created ample access, but that access without connectedness only maintains the feelings of hopelessness. Therefore, it seems that connectedness needs to be formed. In order to connect, we need to strategically intervene and disrupt the feedback loops that contribute to the feelings of separation and despair.



Furthermore, this paper points out that feedback loops are anchored in place by harmful ideologies and stories. Like in the tree model, the roots not only run deep, but the isms anchor the roots, the tree, in place firmly. The best way to uproot a tree and remove what's anchoring it in the ground is by leverage. That is to say, the best way to disrupt a system is by finding leverage points. Why talk about eco-action and reference uprooting a tree? Don't we want to preserve the trees? That's the don't touch mentality of Western environmentalism. We know the system is flawed; Western environmentalism has failed (Susuki, 2012). Why would we preserve the flawed system? Often, we need to unlearn in order to learn again. Changing behavior is akin to pruning the tree; it can help the tree survive and promote growth, but if there's a bigger problem with the tree, it's merely a band-aid fix. Sometimes the best way to preserve a forest is to chop down a diseased tree to prevent further loss.

The phrase "Change begins with the self" seems a bit cliche, however, it's not wrong. The big systemic problems simply cannot be solved by one person alone. They may never be changed, but group effort may help. Motivation is needed to drive change within the self, but endeavour needed to shift change into transformative change.

There are many ways of creating connectedness, of creating hope… more than can probably be thought of by a single person. Some ways may work better for one person than another. This paper claims no specific ways to create hope. Yet, there seems to be two key areas where various efforts could be applied: creating ways for online access to become connectedness, and easing the friction of migrating effort from online to offline.

To reiterate, online access is good. It has done wonders for social movements including climate change. The online realm is fantastic at sharing resources and information. **There is no argument against access, but for the need to cultivate more connectedness from the access.** Creating appropriate information and web design, as well as user interface could help prevent alienation of users (Chen et al., 2018). Circumstances that are challenging can be more meaningful and create a much better, stronger connection. The negative emotions discussed near the beginning of the paper can sometimes even be a catalyst for connection. Emotions are meant to be felt, but they aren't meant to be dwelled on to the point of self destruction (Moyer, 2023). Facing grief can be a passage into engagement and more vibrant living. Apathy and despair result from not facing those difficult feelings, running from them, pushing them away, distracting ourselves (Macy & Johnstone, 2012). **Producing and providing spaces for people to confront, express, share and be heard can be of immense value.**

The online realm isn't bad. However, action cannot stop there. It must be applied and substantiated offline. While the internet has granted some significant developments in how we interact, newer technologies don't seem to be full replacements for other forms of communication (Marlowe, 2017). This might be done by creating ways for people to feel connected and part of the ecosystem. People are part of the ecosystem, but they need to feel as part of it. From a conceptual standpoint, how information, including crises, are presented and interpreted may have an affect. Long-term problems like climate change are not typically viewed as urgent crises (Chang et al., 2022). Something as simple as anthropomorphic imagery may be beneficial. Positive anthropomorphic imagery (such as a smiling sun) is more effective for long term concerns, while negative anthropomorphic imagery (such as a crying tree) is more effective at gaining a response for sudden environmental concerns like floods (Chang et al., 2022). This anthropomorphism may let people see nature as part of their community, their ecosystem. From a physical standpoint, integration with nature may help. As mentioned, 20 hours or more per a week is spent online. Yet, only around 5 hours per a week is spent outside (DJ Case and Associates, 2024). According to Indigenous teachings of the Medicine Wheel, there must exist a balance (Dion Simon, personal communication, 2024) Action and effort cannot exist solely online. We must ask ourselves, what does the offline give us that online doesn't? What is needed to balance that?

Simply spending time amongst nature may help foster a deeper connection with it. This can be done by nature walks, hikes, bird watching, (ethically) camping, engaging in citizen science or gardening (both indoor and outdoor). Even just time spent in a garden or park/greenspace may help. This is especially so if the time spent is led by an Indigenous elder or knowledge keeper or a botanist or ecologist. Environmental organizations can partner with schools to bring students out into the wild with the help of these interpretive agents. Work can be done in order to regularize outdoor, land-based education. This may be especially important as younger generations seem to be more concerned and anxious about issues like climate change (Tyson, 2021). Including youth voices in solutions may help increase their motivation and thus applied action. To further squash the false conception that nature is "out there, away from us", we can initiate and advocate for outdoor education in urban areas closer to residential and work areas. Community gardens are a great example of this; where all generations can collaborate and learn about food production and can contribute to nutrition in food deserts and assist food security. Offline efforts can be promoted online with the encouragement of offline action.

Developing ways to recognize effort may be crucial to mobilize said efforts. Reciprocity and peer recognition create motivation which may help people avoid or work through feeling hopeless. Connectedness often arises when effort is put into something and sometimes the "easy way" isn't always the most effective way.

AREAS OF HOPE AND CONNECTION

Alberta Bee Council	Information on native bee species and resources including native wildflowers and bee friendly practices.	https://www.albertanativebeecouncil.ca/introduction-to-alberta-native-bees
Alberta Institute for Wildlife Conservation	A trusted Canadian-registered charity permitted to rescue, rehabilitate and release wildlife in need.	https://www.aiwc.ca/
Calgary Climate Hub	A volunteer-led, non-profit committed to supporting meaningful local action on climate change. Also has a calendar for events.	https://www.calgaryclimatehub.ca/
Calgary Horticultural Society	Community gardens, resources and where to find them in the city.	https://www.calhort.org/get-involved/welcome-to-community-gardens/
Canadian Rockies Youth Network	An organization by and for youth to get involved in eco-action.	https://www.experiencehowl.com/cryn
CPAWS	Canadian Parks and Wilderness Society, dedicated to safeguarding, connecting, and expanding Alberta's parks and wilderness.	https://cpaws-southernalberta.org/
Changemakers	A social platform designed by CPAWS to foster community around eco-action.	https://wearechangemakers.ca/
Ecosia	Search engine that plants trees.	https://www.ecosia.org/?c=en
Indigenous Climate Action	An Indigenous led organization dedicated to the critical inclusion of Indigenous voices into climate change solution development.	https://www.indigenousclimateaction.com/

Keepers of the Water	A collective of First Nations, concerned communities and environmental organizations coming together for the protection of air, water, land and living things in the Arctic Ocean Drainage Basin.	https://www.keepersofthewater.ca/
Miistakis Institute	Research institute founded to provide scientific evidence to those who claim evidence is needed in order to make environmentally conscious decisions. More in depth and academic, but good for those who want detailed data.	https://www.rockies.ca/
Multicultural Trail Network	Canada's first non-profit that aims to empower diverse youth facing racial and cultural discrimination, by providing them with access to the great outdoors	https://www.mtnetwork.ca/
Naapi Katoyiss Seeds and Restoration KEPA	A group with various projects including a seed bank and food security efforts grounded in the vision of a healthy environment and sustainable society that balances Kainai economy and traditions.	https://www.naapisgardenkepa.com/
Nature Canada	One of the oldest national nature conservation charities in Canada. The link below contains a report and toolkit specifically for their output Race and Nature in the City.	https://naturecanada.ca/race-and-nature-in-the-city/
Nature Conservancy of Canada	An organization dedicated to conservation research and ecosystem restoration.	https://www.natureconservancy.ca/en/

AFTERSWARM

I'd like to end with one last acknowledgement. I am a cis-presenting white individual. I am not an expert in many of the fields talked about, especially Indigenous and Buddhist ways of knowing. Systems are complex formations and I likely have not explored everything involved. This may have seemed like quite a bit of reading, but even then, it is a brief overview of many topics; no matter how honest and accurate the information I aimed to be, some information is always left behind when trying to summarize. As such, I strongly encourage you to read through the reference materials. I've come to learn that Medicine Wheels are not restricted to one Peoples, but exist for and in everyone and everything. It is not my intent to appropriate Indigenous and Buddhist knowledge or stories, but bring to light the failing of Western environmentalism. I encourage further learning on these topics from Indigenous and Buddhist scholars and mentors (and compensation for their teaching). Lastly, I want to mention that this paper does not aim to suggest definitive solutions, or exactly how to foster hope. This work, in itself, is hope.

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