Running out of time:
Public opinions on degrowth in Montréal

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ABSTRACT

Running out of time: Public opinions on growth and degrowth in Montreal

Samantha Mailhot Prévost

As every nation in the world continues its pursuit for everlasting economic growth, global temperatures are increasing at an alarming rate. For decades, scholars have warned about human impacts on the environment, cautioning us on our exhaustive use of resources and the implications of our seemingly innate need to grow economically. It has been asserted that economic growth is not sustainable, and its contraction is unavoidable due to natural limits, therefore any research on managing and prospering without growth is of great value. Degrowth has been put forth as an alternative paradigm, and as the movement is required to be democratic and collective, public opinions are crucial for its mobilization. Accordingly, public opinions on the matter need to be evaluated in order to assess the potential for implementing degrowth policies. Public opinion studies on degrowth are scarce, especially in North America. This study aims to contribute to the literature by assessing public opinions on degrowth in Montréal, by collecting data on support for 6 degrowth policy proposals (limiting trade distances and volume, creating a moratorium on new infrastructure, taxing resource use, progressive taxation, implementing a basic income and reducing work hours), and support for a societal degrowth transition. I find that the majority of respondents support 4 out of 6 policy proposals, and the majority also support a degrowth transition. This study shows Montréal to be a promising city for experimenting with degrowth politics. Establishing concrete strategies for its implementation that address public concerns could prove degrowth to be a promising avenue for achieving social-environmental sustainability.

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Keywords:

degrowth, public opinion, policy, climate change, sustainability

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LIST OF ACRONYMS AND ABBREVIATIONS

BECCS	Bioenergy with carbon capture and storage
CCS	Carbon capture and storage
CDR	Carbon dioxide removal
GDP	Gross domestic product
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
LETS	Local exchange trading system
MQDC	Mouvement Québécois pour une Décroissance Conviviale
OECD	Organization for Economic Co-operation and Development
UNFCCC	United Nations Framework Convention on Climate Change

CHAPTER 1
INTRODUCTION

1.1 A state of emergency

The current atmospheric carbon dioxide concentration is the highest it has been in three million years (Willeit et al., 2019). The science is clear: Earth's atmosphere and oceans have warmed, snow and ice volume have diminished, sea levels have risen, and the concentrations of greenhouse gases have increased (IPCC, 2013). There is ample data that confirms anthropogenic activity is altering the Earth's climate system, which is validated by a 97% consensus among scientists (Cook et al., 2013). The Intergovernmental Panel on Climate Change (IPCC), the international body for assessing the science related to climate change, projected outcomes on human health that are likely to affect the wellbeing of millions of people globally. These effects include large populations effected by malnutrition, increased mortality rates, disease and injury due to heat waves, fires, storms and droughts, increased vector-borne diseases, such as malaria and dengue fever, and many more (IPCC, 2013).

For decades, scholars have warned about human impacts on the environment, cautioning us on our exhaustive use of resources and the implications of our seemingly innate need for economic growth as individuals, societies and nations (e.g. Carson, 1962; Daly, 1991, 1996; Georgescu-Roegen, 1971, 1975; Hirsch, 1976; Meadows et al., 1972). Human activity has led to the near transgression of four out of the nine planetary boundaries (Steffen et al., 2015a) identified by Rockström et al. (2009), each of which has the potential to destabilize the Earth system and result in disastrous consequences for society. These four planetary boundaries are biodiversity loss,

damage to phosphorous and nitrogen cycles, climate change and land use. The three that remain in the 'safe operating space' are freshwater use, ocean acidification, and stratospheric ozone depletion. The boundaries of the remaining two, atmospheric aerosol loading and novel entities (materials not previously known to the Earth system) have not yet been quantified. The 2015 Paris Agreement established the international goal of limiting global temperature increase to well below 2°C above pre-industrial levels (period 1850-1900) but to aim to limit it to 1.5°C to reduce the risks and impacts of climate change (UNFCCC, 2015). However, the United Nations' Emissions Gap Report 2018 confirmed that global efforts have been inadequate thus far. The field of Ecological Economics has developed considerably over the past century, notably delivering critiques of economic growth. Researchers have determined that the 2°C threshold will likely be exceeded if growth continues, and ideas of sustainable development and green growth will not adequately address the climate crisis (e.g. Hickel & Kallis, 2019). Many have asserted that economic growth is not compatible with social and ecological sustainability (e.g. D'Alisa et al., 2015; Kallis et al., 2018; Kosoy et al., 2012; Martinez-Alier, 2009).

One concern is that environmental issues have flared into a global conversation since the early 1970s, and still the global community has not figured out how to address environmental issues adequately. Enhanced media coverage on the climate crisis is focusing on international green movements such as Extinction Rebellion, which aims to achieve radical socioeconomic change through nonviolent civil disobedience to minimize the risk of ecological collapse (Extinction Rebellion, 2019); Greta Thunberg's school strikes for climate which involves school students around the world striking from class to pressure government action in preventing further global warming and climate change (Fridays for Future, 2019; media e.g. Monbiot, 2019); and the Green New Deal, a supposed "stimulus package to jointly address climate change and income

inequality through an intersectional lens" (e.g. Mayes, 2019). There has also been media coverage on the increase in extreme natural events including heat waves, inundation, extreme precipitation and tropical cyclones/hurricanes affecting millions of people around the world (e.g. Maclean, 2019). A rise in media coverage should mean an increase in social awareness of the current environmental issues. Notably, the aforementioned movements have brought about some political discussion in Europe (e.g. see Watts, 2019), though this has not yet lead to substantial changes in the way we live.

1.2 Degrowth as a possible solution

One proposed solution to the climate crisis, environmental degradation and global inequality has received far less attention: the degrowth movement. Put forth to address such issues, the movement calls for radical dematerialization, and political and economic reorganization in order to drastically reduce resource and energy throughput (e.g. Kallis et al., 2018). It is considered 'radical' because of its unparalleled scale and the significant social, cultural and political changes it would entail (Kallis, 2017). Degrowth can be characterized by three pillars of thought (D'Alisa et al., 2014). First, it calls for the abolishment of economic growth as a social objective. Second, it calls for equitable downscaling of production and consumption that will reduce societies' material and energy throughput, as mentioned above. Lastly, degrowth does not call for solely doing less of the same, but signifies doing things differently. In other words, degrowth implies a "society with a smaller metabolism, but more importantly, a society with a metabolism which has a different structure and serves new functions" (D'Alisa et al., 2014). At a rudimentary scale, degrowth advocates for simpler, secure and more communal life (Kallis, 2011) and would make an important contribution to climate change mitigation (Büchs & Koch, 2019).

Accompanying these pillars of thought are concrete degrowth goals with related policy proposals (Cosme et al., 2017). These goals are to: (1) reduce the environmental impact of human activities through policies that reduce material and energy consumption, create incentives for local production and consumption, and promote changes in consumption patterns, etc. (e.g. tax consumption, pollution and resource use; create moratoria on new infrastructure, and resource use and extraction); (2) redistribute income and wealth both within and between countries through policies that promote a fair distribution of resources through redistributive policies of income and capital assets, promote work-sharing, create a citizen's income and salary caps, etc.; (3) to promote the transition from a materialistic to a convivial and participatory society through policies that promote downshifted lifestyles, reduce working hours, and explore the value of unpaid and informal activity.

The political and economic feasibility of a degrowth transition has been well addressed and challenged in academic literature (e.g. Büchs & Koch, 2019; Tokic, 2012; van den Bergh, 2011), whereas the social and cultural feasibility remains understudied. Among revolutionizing economic structures and changing values, a cultural revolution is needed for degrowth to gain momentum (D'Alisa et al., 2014; Latouche, 2009). The degrowth movement arose from the global North, from and for individuals who enjoy comparatively high levels of objective and subjective wellbeing (Büchs & Koch, 2019), and are concerned with the cultural desire for ever-increasing levels of income and consumption. A democratically led transition whereby individuals would both voluntarily choose, and even more, politically fight for simpler and more frugal lives is hard to imagine (Buch-Hansen & Koch, 2019). This represents a substantial cultural obstacle.

1.3 Degrowth in Québec

Yves-Marie Abraham (2019) wrote an article touching on the founding of the Québec Movement for a Convivial Degrowth (MQDC: le Mouvement Québécois pour une Décroissance Conviviale) in 2007, which is comprised of a broad range of activists, and academics. The MQDC's main objective was to introduce and promote the idea of degrowth in public discourse in Québec. They organized study groups, workshops, public lectures and seminars to fuel discussion. It is thanks to this community that Abraham was able to create and teach the first university course on degrowth in Canada, at HEC Montréal. The author advocates for producing less, sharing more, restoration and creation of the commons, and making "genuinely democratic decisions about how we should live together". Abraham gives examples of degrowth initiatives in Montreal: the Milton-Parc housing co-operative; the Bâtiment 7 local services centre; the La Remise tool library; the Champ des Possibles, a self-managed community garden, and UPop Montreal, a free People's University. Co-operatives are closely tied to degrowth as they share very similar values: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; commitment to education about the nature and benefits of co-operation; cooperation among cooperatives; and concern for the sustainable development of their communities (International Co-operative Alliance; Johanisova et al., 2015). Abraham affirms that it is necessary to multiply such initiatives, build networks, and seek support from existing government agencies where possible. With that in mind, I summarize my research objectives below.

1.4 Research objectives and thesis structure

Because degrowth has to be democratic, and public opinion plays an important political role in influencing social outcomes, popular support is crucial for its mobilization (Kallis, 2011; 2018; Xu & Li, 2018). With this in mind, this research centers on public opinions on degrowth in Montréal. Using a quantitative approach with the administration of an online survey to 385 Montréal residents, my aim is to learn about the potential for a degrowth transition in Québec and Canada. I present data on participants' socio-demographics, environmental values, support for degrowth policies and support for a degrowth transition in Canada. I also assess the effect of inviting respondents to reflect on their support for policies through a social rationality rather than their own individual rationality. This is a concept discussed by Etzioni (1988), where he introduced the I&We paradigm that separates individuals thinking and acting rationally on their own ("I") and individuals thinking and acting with their community in mind ("We"). To do this, I provide information on how the policy would impact their community or society rather than just them.

In this thesis, I begin by providing a literature review wherein I summarize critiques of economic growth, provide an in-depth definition of degrowth, and offer a review of the policy proposals and barriers and public opinions on degrowth. Further, I present a review of the determinants of environmental values, provide an introduction to the concept of social rationality, and finally I provide a brief summary on gaps in the literature. I then introduce the methodology for the thesis, including the survey sample and data collection process and a discussion of the variables. I provide a data analysis section, where I discuss the data set, my hypotheses and introduce the procedures for the statistical and qualitative analyses. The results section begins with an overview and brief discussion of the respondents' pre-existing environmental values. I then assess the overall policy support of the respondents, the effects of the social rationality statements,

the determinants of policy support, the overall support for a degrowth transition in Canada and the determinants for this support. I end the results section with a summary of open-ended answers respondents provided for not supporting policies. The third chapter of my thesis ends with a discussion, and chapter four provides conclusions.

CHAPTER 2
LITERATURE REVIEW

2.1 Background: Economic growth and sustainability

Economic growth is generally defined as an increase in the monetary values of the goods and services produced by an economy in a given period of time, typically a year (Victor, 2015). It has been critiqued almost as long as it has existed. One of the more popular examples of investigation into economic growth was Donella Meadows and colleagues in *The Limits to Growth,* in which they wrote about growth trends in world population, industrialization, pollution, food production, and resource depletion. They concluded that the biophysical limits to growth would be reached within a century if these trends are maintained (Meadows et al., 1972). The authors offered a second outcome, in which economic and ecological sustainability were to be met by altering the above trends in order to reach a 'global equilibrium' whereby every individual has equal opportunity and their basic needs met. Fifty years later, we find ourselves moving closer and closer to the former outcome, as global resource use currently follows the "collapse by 2050" scenario presented in the report (Jackson & Webster, 2016). It has become common knowledge that economic growth is also one of the main drivers for rising GHG emissions (e.g. Peters et al., 2017; Zhang et al., 2014). Human socio-economic activities have led to stark changes in the Earth system, as can be visualized in Figures 2.1 and 2.2 (taken from Steffen et al., 2015b).

As environmental degradation has accelerated, several arguments have been put forth against the idea of sustainable economic growth. One example is the inevitable depletion of non-renewable energy and material sources (Heinberg, 2010). Another example is the reliance on controversial and speculative negative emissions technologies for carbon dioxide removal (CDR)

and carbon capture and storage (CCS) (such as bioenergy with carbon capture and storage (BECCS)); technologies that are currently at "little more than a conceptual stage of development" (Anderson, 2015), and are unproven as climate mitigation strategies (Fuss et al., 2014).

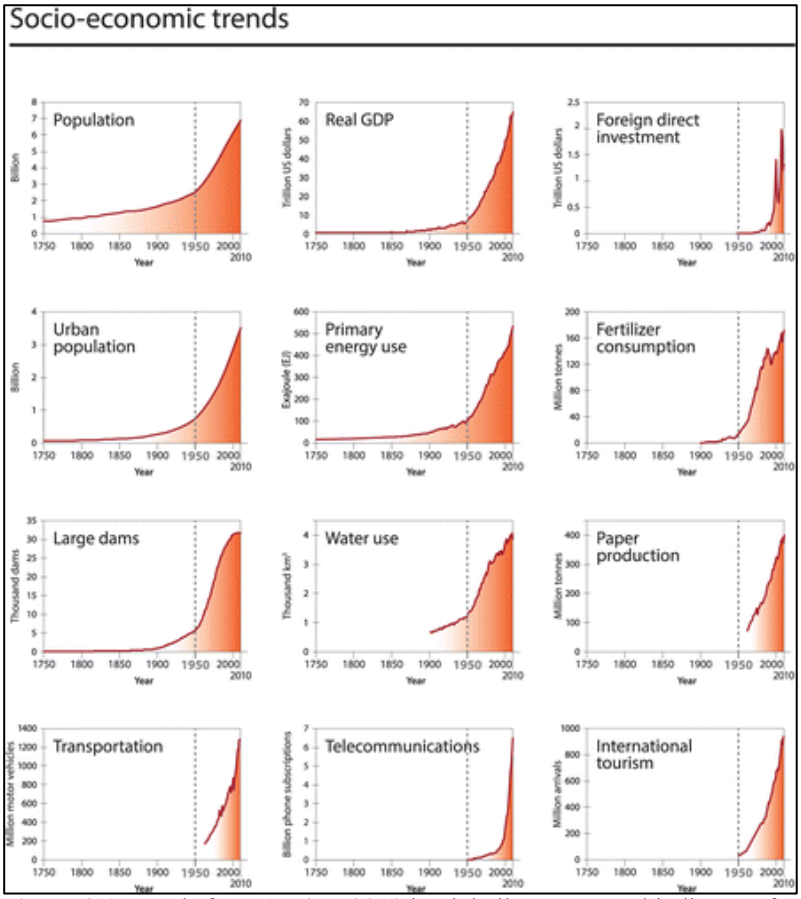

Figure 2.1 Trends from 1750 to 2010 in globally aggregated indicators for socio-economic development (Steffen et al., 2015b)

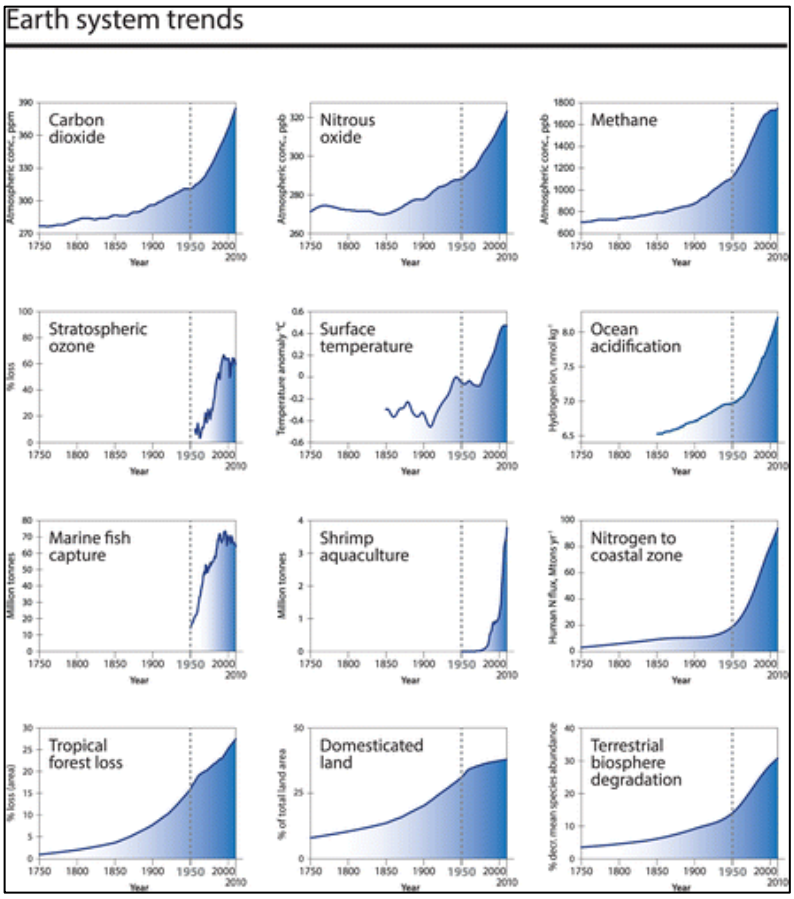

Figure 2.2 Trends from 1750 to 2010 in indicators for the structure and functioning of the Earth System (Steffen et al., 2015b)

Attempts to tackle climate change while maintaining economic growth have been presented through the use of carbon markets, as a way to help emissions reduction using cap-and-trade and carbon offset programs. These tactics involve the continued use of fossil fuels while imposing limitations. Cap-and-trade involves emissions limits and giving or selling tradable legal rights to emit, while carbon offset programs allow the investment of mitigation techniques in other countries (usually developing) in order to gain carbon credits which allow further emissions. There are several reasons to be skeptical of these solutions. Stuart et al. (2019), by following Karl Polanyi, assert that further commodification of nature is paradoxical and will only heighten risks to society and the environment. Polanyi (1944) spoke a long time ago about fictitious commodities:

our wrongful use of labour, land and money (and carbon credits) as if they were objects that were produced for sale on the market. For one, Stuart et al. (2019) argue that carbon markets only reinforce the structural causes of climate change by furthering capitalist expansion through the increase of carbon commodification rather than reducing it. Carbon markets therefore ignore the contradictions between nature and capitalism. Second, they argue that attempts to commodify carbon can result in unexpected and catastrophic outcomes, as carbon and climatic systems are still not fully understood, and that falsely assuming control over the carbon cycle will only increase risks to society. Third, carbon markets increase risks to society and hinder climate change mitigation by undermining potential policy and social alternatives that would more effectively address the issue. Lastly, by accepting capitalism as a given, the use of carbon markets as a solution simply preserve the status quo and only further, inequality, hierarchy and domination in society (Stuart et al., 2019).

There has also been widespread criticism on how growth, progress and social welfare are measured. Gross domestic product (GDP) is the monetary, market value of all final goods and services produced in a country over a period of a year (van den Bergh, 2009). GDP is reported to have several shortcomings such as: interpreting every expense as positive even if it is welfare-reducing (Kubiszewski et al., 2013; Talberth et al., 2007); failing to measure social welfare and capture the lack of satisfaction of basic needs (e.g. food, water, shelter); failing to recognize the value of informal activities and services outside the market (e.g. subsistence agriculture, child care); and lack of accounting for environmental degradation and the depletion of natural resources (van den Bergh, 2009). Concerned with these issues, van den Bergh (2011) put forth that GDP, "a systemic piece of misinformation", acts as a barrier to good policies. In other words, it is in fact hindering social progress. Moreover, scholars have addressed other ways that our current capitalist

growth paradigm has failed us. Not only has it been unsuccessful in eradicating hunger, poverty and global inequality (Büchs & Koch, 2019), it is responsible for financial and social inequality, environmental degradation, and environmental injustice (unequal allocation of environmental hazards and environmental racism) (Natale et al., 2016). Meanwhile, Büchs & Koch (2019) find the Global North continues to enjoy comparatively higher levels of both objective and subjective wellbeing than the Global South.

Economic growth remains one of the main goals for every nation (United Nations, 2019), despite evidence that continued economic growth is not sustainable (e.g. Jackson, 2009). This is evidence that has been researched, reported and ignored by politicians and world leaders (Daly, 2013). If there are countless problems associated with growth, why does it preoccupy so many? It is argued that differences in views on the matter lead people to be unsure about the relationship of growth and the environment (Drews, Antal & van den Bergh, 2018), and therefore unaware of the critical situation at hand. Büchs and Koch (2019) elaborate on the stabilizing role that growth has played for modern societies by providing employment, rising wages, public services, representative democracy, the rule of law and current legal, financial, labour market, education, research, and welfare systems. Notably, the authors discuss how economic growth is "very deeply anchored in people's minds, bodies and identities" and has influenced ways of thinking about rights, justice, freedom, private property, and individual responsibility. Economic growth is also seen as being linked to wellbeing by the majority of politicians and the population (Büchs & Koch, 2019). Growth is additionally seen as being crucial to escape recessions and realize progress (Antal and van den Bergh, 2016). For these, and many other reasons, the pursuit for growth continues. The Sustainable Development Agenda of the United Nations (2020) states:

Sustainable development has been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. For sustainable development to be achieved, it is crucial to harmonize three core elements: economic growth, social inclusion and environmental protection. These elements are interconnected and all are crucial for the well-being of individuals and societies.

There have been several approaches presented to sustainably maintain growth in recent decades. Presently, green growth is the widely accepted solution to the climate crisis, notably because it has been advertised as a win-win scenario maintaining both economic growth and ecological integrity (Antal & van den Bergh, 2016). Green growth can be defined as "economic growth accompanied by a reduction of a society's throughput" (Kallis et al., 2018), throughput being the materials and energy a society extracts, processes, transports and distributes, to consume and return back to the environment as waste (Daly, 1996).

Many scholars argue that growth cannot be maintained on our finite planet, and that growth scenarios represent a dangerous and uncertain mitigation tactic and that the current growth-based paradigm is not compatible with environmental sustainability (e.g. Martinez-Alier, 2009). It has been argued that economic contraction is unavoidable due to natural limits (Jackson 2009, Kallis et al. 2012), therefore any research on managing and prospering without growth is of great value. Many seem to believe that growth is a part of human nature, but Kallis (2018) illustriously counters this idea in writing: children and trees only grow "up" to a point, and perpetual growth does not exist in nature. Either by choice or by necessity, there are several societies that are not growth oriented that have existed throughout history and continue to exist today (Kallis et al., 2018). The authors put forth a series of "peripheral niches" around the world that can inform alternatives to growth-based development through the "revaluation and recuperation of non-Western traditions".

One example they discuss is the idea of "buen vivir" (living well), which originated from South America as an alternative to conventional ideas about development. Through cultural traditions and concepts among indigenous groups, "buen vivir" signifies the prioritization of ecological balance and community wellbeing (Gudynas, 2015; Kallis et al., 2018). With many other examples, the idea that alternatives to growth are not achievable can be countered.

2.3 Degrowth

To address climate change and all other issues associated with economic growth, degrowth has been proposed as an alternative to the current growth paradigm. Degrowth is the translation of the French word 'décroissance' which was first used in 1972 by French intellectual André Gorz, with a focus on resource limits, the impossibility of growth in a finite world and the need to relate economics to the biosphere (Kallis, Demaria & D'Alisa, 2015). From there, 'décroissance' became an activist slogan in 2001 when a movement formed in France from protests for car-free cities, food cooperatives and campaigns against advertising (and more). This phase of 'décroissance' is characterized as by critiques of 'sustainable development' (Kallis, Demaria & D'Alisa, 2015). Ideas of degrowth spread and gained interest, which led to the eventual organization of international conferences (Kallis, Demaria & D'Alisa, 2015). The English term 'degrowth' was officially adopted at the first Degrowth conference in Paris in 2008, which marked the beginning of degrowth as an international research area (Demaria et al., 2013). Today, degrowth is a concept debated in academia and is taught at universities all around the world (Kallis, Demaria & D'Alisa, 2015). While degrowth is stated as being "rich in its meanings and [not embracing] one single philosophical current" (Demaria et al., 2013), it is commonly defined as "an equitable downscaling of production and consumption that increases human well-being and enhances ecological

conditions at the local and global level, in the short and long term" (Schneider, Kallis & Martinez-Alier, 2010). Research in the field of degrowth involves covering many different aspects through several disciplines like ecological economics, economics, political science, history, anthropology and technology studies, creating a holistic approach to the proposed paradigm shift (Kallis et al., 2018). While there exist different visions of degrowth, the literature presented here mainly focuses on the vision put forth by Kallis and colleagues.

At the core of the degrowth movement today are numerous interconnected ideas and beliefs about how to make the world a better place for all living beings. Degrowth represents an end to the exploitation upon which growth is dependent. To acquire the necessary surplus for investment and growth, governments and capitalists exploit individuals around the world by, say, not paying them the real value of their work. Kallis (2018) puts forth that a vision of an egalitarian and classless degrowth society, whereby a socially sustainable downscaling of throughput would be possible through coupled equality and sharing. This would entail the creation of institutions and norms that ensure no individual or group can excessively accumulate wealth or power (Kallis, 2018). A degrowth economy would therefore be considerably different through changes in power structures and levels of equality. Namely, Kallis (2018) argues that the hierarchy of work that sustains the economy would be inverted, where unpaid care work would be valued, and co-operatives or not-for-profits would be the dominant producers as opposed to privately owned firms. This would entail a reduction of production for profit and opportunities for accumulation. Kallis (2018), among other authors (e.g. Stuart et al., 2019), relatedly advocate for a decommodification of land, labour and value. Vail (2010) states that decommodification is any political, social, or cultural process that reduces the scope and influence of the market in everyday life, and that it would insulate non-market spheres from market encroachments; increase the

provision of public goods and expand social protection; promote democratic control over the market by creating economic circuits grounded in a logic predicated on social needs rather than profit; and undermine market hegemony by revealing the market's true social costs and consequences.

Degrowth is concerned with replacing heteronomy, a condition of being ruled or governed by others (e.g. the state), with autonomy, the ability to rule ourselves independently and consciously (Castoriadis, 1987). Relatedly, Deriu (2015a) discusses capitalism as a subset of the growth-based society, reviewing the work of psychoanalyst Bruno Bettelheim (1991) which illustrates how addiction to material comforts has been perpetuated by consumer culture and technology. This is rooted in the popular belief that technology can and will solve the current socio-ecological crises we face, a reliability which in turn leaves individuals feeling powerless and deeply obstructs autonomy (Deriu, 2015). Degrowth aspires to move away from the idea of vital economic growth and aims to rebuild societies that are self-instituted and self-regulated (Latouche, 2009). These ideas tie into Castoriadis' (1979) notion of depoliticization linked with modern societies in that important decision making is no longer collective but instead left for experts, in turn undermining autonomy. This deprivation of involvement in the political arena has led degrowth to a call for direct democracy, the direct participation of citizens in decision-making. Castoriadis states: "To decide means to decide for oneself. To decide who is to decide, already is not quite deciding for oneself. The only total form of democracy is therefore direct democracy." Direct democracy requires that all economic, political and other structures of society be based on local, concrete collectives; that citizens be physically present for decision-making; and that citizens be closely familiar with the issues at hand (i.e. through daily experience). Direct democracy would

allow for community involvement through total political participation of individuals, rather than external authorities making decisions for them (Castoriadis, 1979).

Further, Deriu (2015b) draws on work from Ivan Illich (1973) in examining the role of conviviality in degrowth; broadly encompassing a transition from our dependence on industrially-produced tools that are made to break and perpetuate said demand, to tools that individuals can easily learn to use and fix, thus resulting in freedom and autonomy. Conviviality additionally allows space for the development of personal relationships and social bonding. Briefly revisiting capitalism, Andreucci and McDonough (2015) connect it to degrowth by elaborating on capitalism's growth dynamic, whereby expansion and competition for money, labour, raw materials and markets continuously feed into each other. Moreover, the authors explore the cultural and political aspects of capitalism, pointing out how 'new needs and limitless wants are stimulated through marketing', and that there exists a dominant logic of continuous accumulation. With the knowledge of growth being incompatible with social and ecological sustainability, it is therefore argued that degrowth is incompatible with capitalism (Andreucci & McDonough, 2015). As a response, the degrowth movement calls for dematerialization, a term signifying a "tremendous reduction in the quantity of materials used to serve the production and consumption needs of our planet", which is intended to address environmental issues at their source (Lorek, 2015). Correspondingly, degrowth involves more localized production, whereby, for example, food production and consumption occur in the same local area (Kallis, 2018).

Other core degrowth ideas include care, happiness and simplicity. Care involves everyday work of individuals maintaining welfare for themselves and for those around them through devotion to sustenance, reproduction and contentment of human relationships (D'Alisa, Deriu & Demaria, 2015). While care work is said to be fundamental in the support of mental, physical and

relational integrity of every human being, it has been undervalued for years because it is not considered productive labour, the only labour which is valued in capitalist societies (D'Alisa, Deriu & Demaria, 2015). The growth imperative under capitalism therefore restricts the time individuals are able to commit to themselves, their family and friends, and civil and political activities (D'Alisa, Deriu & Demaria, 2015). Considering that the above elements of care increase happiness and subjective well-being, scholars advocate to centralize care and redistribute the necessary work across gender and class, which would ultimately influence a reduction of working hours and less devotion to the economic sphere (D'Alisa, Deriu & Demaria, 2015). Additionally, it has been found that reductions in average working times are likely to reduce an economy's environmental impacts (Pullinger, 2014). Connected degrowth principles are sharing and commons, or "making the commons" (Kallis, 2018), which can generally be defined as different forms of shared material and immaterial wealth (Akbulut, 2019a). This involves sharing of work, public space, living space, resources and expertise, as well as rules, rights and duties that entail pooling and governing shared resources with egalitarian direct democratic processes (Kallis, 2018). In other words, the commons represent a system of self-governance and processes of shared stewardship about things a community possesses and manages together (Helfrich & Bollier, 2015).

If a successful degrowth transition were to lead to drastic reductions in consumption, Sekulova (2015) argues that this would not necessarily have a negative effect on subjective well-being. Firstly, drawing on Easterlin (2003), non-monetary domains such as health, social capital, relational goods, marital status, tend to be more valuable for happiness than monetary ones such as material conditions or level of disposable income. Also, Easterlin (1974) found a happiness-income paradox (now known as the Easterlin paradox), which showed a lack of association between income and happiness over time through national comparisons among countries. It is

important to note that this would only have a positive outcome if it involved all of the world's population and not only small portions of the population surrounded by others who are wealthy, resembling an economic crisis. If done collectively, individuals would adapt and grow accustomed to material conditions as they tend to, and no longer engage in social comparison (Sekulova, 2015). This conscious minimization of wasteful and resource-intensive consumption can be referred to as voluntary simplicity, which also represents a reimagination of 'the good life' (Alexander, 2015b). This means seeking non-materialistic sources of satisfaction and meaning, like more time with family, community or social engagements, political participation, spiritual exploration, relaxation etc. Albeit, this shift in cultural values may be difficult in societies dominated by materialistic principles, and though degrowth calls for a voluntary transition, it may end up being imposed through economic recession or collapse (Alexander, 2015b). While a degrowth paradigm has never been globally realized, it is important to note that whichever pathway is chosen will inevitably be complex and challenging.

2.4 Proposals of degrowth

Various proposed actions have been put forth for how degrowth transitions could be conceived around the world. Rigon (2017) notes that the urgency for change means it will need to occur within the existing institutions of society, while greater institutional change can be carried out along the way. The author also argues that policies will vary by scale and level of radicalism, that some may explicitly acknowledge degrowth principles while others may be designed with different intentions but still contribute to degrowth, and that many policies will only make sense in certain contexts. Under the degrowth lens, Cosme et al. (2017) identified three broad degrowth goals: (1) reduce the environmental impact of human activities, (2) redistribute income and wealth

both within and between countries, and (3) promote the transition from a materialistic to a convivial and participatory society. These goals are discussed in sections 2.4.1, 2.4.2 and 2.4.3, respectively. The majority of these proposals have a national focus of implementation, followed by local, and international. Further, the majority present a top-down approach and require direct control by governments, which highly contradicts the degrowth discourse of voluntary and democratic change (Cosme et al., 2017). The authors also found that degrowth academic literature is more focused on social equity than on environmental sustainability.

2.4.1 Reduce the environmental impact of human activities

Cosme et al. (2017) found the most common proposals to reduce the environmental impacts of human activities were to reduce material and energy consumption, create incentives for local production and consumption, and promote changes in consumption patterns (Table 2.1). One of the greater changes a degrowth transition requires is a new economy. This encompasses ecologically-bounded economic activity in order to comply with the ecological limits of Earth, a stable and resilient economy, equality, and work as a part of participation in the life of society (Jackson, 2015). Policies and institutional changes that could aid the economic transition include: the abolishment and substitution of GDP as an indicator of human and ecological well-being; work-sharing; a universal income or guaranteed public services; a redirection of public investments from the private sector to the public, and from infrastructure and activities that increase productivity to expenditures that green the economy and reclaim the commons; and environmental limits and taxes to finance low-income groups (Kallis, 2018).

Table 2.1 Analysis of degrowth proposals for Goal 1: Reduce the environmental impact of human activities (Cosme et al., 2017)

Topic	Degrowth proposal
Consumption	Promote changes in consumption patterns Tax consumption Limit/regulate advertising Decrease the number of appliances and volume of goods used or consumed per household
Ecological conservation	Promote the restoration of ecosystems Finance funds and projects for the conservation of biodiversity Promote the use of local sources of water (rainwater, greywater) to reduce dependence on large infrastructure and improve the quality of freshwater ecosystems
Infrastructure	Redirect investments away from infrastructure in fast and car-based models of transport to slow-mode ones Create a moratorium on new infrastructure (e.g. nuclear plants, highways, dams)
Pollution	Put caps on CO2 emissions, tradable or non-tradable Tax environmental externalities Certify organic farming including CO2 emission reduction goals Reduce waste generation
Production	Reduce production (large-scale, resource intensive) Promote organic farming/sustainable agriculture Introduce simpler technologies Create regulatory bans for very harmful activities/technologies (e.g. nuclear energy) Make more green investments Promote eco-efficiency
Resource use	Put caps on resource use and extraction (tradable or non-tradable) Tax the extraction of resources at origin Reduce energy consumption Reduce material consumption Create a moratorium on resource use and extraction Make commitments to leave resources in the ground Tax resource use Promote the use of local sources of rainwater and greywater Remove harmful subsidies for resource extraction Invest in more renewable energy Promote the compact city form of urban planning
Trade	Promote strong social and environmental provisions in trade agreements Limit trade distances and volume Create incentives for local production and consumption Reduce the number of scientific conferences Regulate the tourism industry Promote voluntary reductions in commerce and trade

2.4.2 Redistribute income and wealth both within and between countries

Cosme et al. (2017) found the most common proposals to redistribute income and wealth both within and between countries were to promote community currencies, non-monetary exchange systems and alternative credit institutions, promote a fair distribution of resources through redistributive policies of income and capital assets, promote work-sharing, create a citizen's income and salary caps (Table 2.2). Institutions in a degrowth transition would guarantee minimum health and economic security to all, and limit environmental degradation (Raventós, 2007). These, and all other proposed shifts to move toward a degrowth paradigm, could be made acceptable, successful and rewarding through the implementation of Serge Latouche's call for a "decolonization of the imaginary" (Latouche, 2009), which can be defined as "an active process of liberating thought, desires and institutions from the logic of growth, productivism and accumulation for accumulation's sake" (Kallis, 2011). This call is based on the work of Cornelius Castoriadis (1987) which critiques the emergence of the idea that the "unlimited growth of production and of the productive forces is in fact the central objective of human existence". Latouche (2015) refers to this decolonization of the imaginary as a detoxification and a process of de-Westernizing, and as a cultural revolution in relation to exiting the economy and changing values.

Table 2.2 Analysis of degrowth proposals for Goal 2: Redistribute income and wealth both within and between countries (Cosme et al., 2017)

Topic	Degrowth proposal
Access to goods and services	Create a basic/citizen's income Promote community currencies, non-monetary exchange systems, and alternative credit institutions Improve social security and investment in public goods to guarantee equal access to goods and services, and thereby protect people from poverty and exclusion Decrease unemployment Turn banking into a public service Create a job guarantee Promote the recognition and management of common goods Eliminate debt-based money
Equity	Promote a fair redistribution of resources through redistributive policies of income and capital assets Implement redistributive taxation schemes Promote the shift of costs from labour to capital Encourage the breaking up of large corporations to avoid monopolies Encourage the reform of corporate charters and promote new ownership patterns Encourage the breaking up and decentralisation of banks and financial institutions Create salary caps Tax international capital movement Tighten the control on tax havens
Global governance	Put a price on environmental and social externalities Prepare for long-term non-growth after the period of growth for developing countries Establish common but differentiated responsibilities of developed and developing countries
Socioeconomic opportunities	Promote work-sharing and job-sharing Create more employment in key sectors Provide sufficient work opportunities Encourage small, local enterprises

2.4.3 Promote the transition from a materialistic to a convivial and participatory society

Cosme et al. (2017) found the most common proposals to promote the transition from a materialistic to a convivial and participatory society were to promote downshifted lifestyles, reduce working hours, and explore the value of unpaid and informal activity (Table 2.3).

Table 2.3 Analysis of degrowth proposals for Goal 3: Promote the transition from a materialistic to a convivial and participatory society (Cosme et al., 2017)

Topic	Degrowth proposal
Community building, education and value change	Create funds to finance low economic cost, high welfare public investments Promote a value change Invest in the restoration and strengthening of local communities Strengthen common possession regimes and customary institutions through their formal recognition by external actors Introduce and incentivise education on ecological/social limits and sustainability in various educational and training establishments Promote the preservation of ancient knowledge, language, and techniques
Democracy and participation	Decentralise and deepen democratic institutions Promote alternative political systems and capabilities to provide them Create caps on political and electoral spending to allow equal participation chances Promote regeneration of fundamental democratic institutions to incorporate degrowth-related spatial, temporal, and value dimensions
Free time	Promote shared living spaces (with shared chores) Reduce working hours
Voluntary simplicity and downshifting	Promote frugal, downshifted lifestyles Explore the value of unpaid and informal activity Devise new measures to track improvements in social welfare

There exist grassroots initiatives that embody the cultural shift representative of degrowth that are aside from institutional changes. For instance, back-to-the-landers are people who choose to move from the city to the countryside to pursue agrarian or artisan lifestyles without prior experience, as a way to go against materialist mainstream culture (Calvário & Otero, 2015). Their aim is to transition their lifestyles toward ecological sustainability but adopting simpler, self-sufficient, autonomous, and close-to-nature ways of living (Calvário & Otero, 2015). These lifestyles are often connected by organic small-scale farming, relocalization of production and consumption, alternative economies and networks, all of which are necessary changes for a degrowth transition. Community currencies are suggested as unconventional mediums of exchange (e.g. LETS (Local Exchange Trading System), time banks, barter market currencies, and

convertible local currencies) (Dittmer, 2015). This strategy can be seen as intentionally leaving growth-based society while also engaging in community-building, advancing alternative values, and facilitating alternative livelihoods (Dittmer, 2015). A similar proposal associated with degrowth values is a shift to cooperative organizational structures, defined by the International Co-operative Alliance as 'autonomous associations of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise' (Johanisova, Suriñach Padilla & Parry, 2015). ewdsx

There also exist several proposals to address happiness in a degrowth transition. Firstly, the reduction of work hours is considered here due to findings of increased happiness and life-satisfaction associated with part-time work. This is referred to as work-sharing, and more deeply represents an increase of free time and space devoted to non-monetary, reciprocal, communal and other activities that one considers meaningful (Sekulova, 2015). Second, the recommendation of basic and maximum income is revisited, whereby income inequality would be reduced and subjective-well-being could improve due to the associated "decline in rivalry" (Sekulova, 2015). These two policies could aid in eliminating poverty without relying on growth (i.e. redistributing rather than growing), by being guaranteed, unconditional and universal (Alexander, 2015a). Degrowth also advocates for a reduction in car-dependence and other fast transport modes for various reasons including, the fact that spending hours in a motorized vehicle has a negative effect on happiness; traffic congestion and associated environmental degradation. This could be possible if individuals shifted to public transit use and chose work placements based on proximity (Sekulova, 2015). Latouche's decolonization of the imaginary would additionally have a positive effect on happiness by shifting materialistic values to intrinsic ones such as altruism, which are associated with well-being (Sekulova, 2015). These changes greatly challenge the status quo and

would fundamentally alter the life of most people in the global North. However, as D'Alisa et al. (2015) plainly put it, this would ideally be a voluntary transition – a 'planned economic contraction' – but it may end up being a transition imposed on people by way of recession or even collapse, an idea that is revisited below.

2.5 Addressing barriers to degrowth

> [...] legal, political and economic structures will never reflect a post-growth ethics of macro-economic sufficiency until a post-consumerist ethics of micro-economics sufficiency is embraced and mainstreamed at the cultural level.
>
> — Samuel Alexander, 2013

The propositions for degrowth come with many obstacles. Institutionally speaking, Büchs and Koch (2019) describe a growth 'lock in' and state that a transition to degrowth would require fundamental social, economic, political, cultural and technological changes, which are difficult to achieve through political means. One of the more substantial discussions about the feasibility of degrowth is whether the transition can occur within capitalism. Akbulut (2019b) discusses the imperative of economic growth as more than an economic and social quest for economic gain, but also as a major component in "securing and reproducing social support/consent for existing political-economic structures that systematically create and perpetuate inequality." The author discusses the important role of the nation-state and the Gramscian concept of hegemony in perpetuating the growth imperative. Through material and ideological practices, hegemony is realized by modern states through efforts to obtain societal consent, accompanied by coercion, to secure their claim to rule (Abkulut, 2019b). Hegemony is realized through the state's self-

representation as “the bearer and deliverer of society’s collective interest”, whereby its existence and rule is justified. This representation of unity in turn allows for the neglect of internal class-based distributional conflicts and does so without threatening the status of the upper class (Akbulut, 2019b). Therefore, Akbulut discusses two challenges for the politics of degrowth that have not been widely addressed in the literature: that there are likely interrelated political and economic incentives to maintain the growth imperative, grounded in state hegemony; and that growth is deeply ingrained as a collective goal in state-society relations which may be difficult to disregard. Moreover, these interdependent challenges prove even more difficult because the majority of degrowth proposals require active intervention and/or involvement of the state (Abkulut, 2019b), as seen above. Kallis et al. (2018) warn that due to these established interests and power relations, a degrowth transition is politically unlikely.

Degrowth requires an ecological-material and political break, as well as a cultural-symbolic one (Akbulut, 2019b). As a Western idea, degrowth proposes the decrease in income and material comfort for the global North. The idea of having less money and possessions, and having to ‘lower’ their comfort level is seen as a sacrifice, which represents a significant psychological barrier to supporting degrowth (Abdallah & Thompson, 2008). Some concerns surrounding the possible negative wellbeing implications from the decrease of material living standards of a degrowth transition are discussed by Büchs and Koch (2019). They address concerns about happiness and life satisfaction, considering that degrowth would challenge people’s mindsets, identities and life goals. This includes, for instance, ideas of justice, freedom, private property, individual responsibility, social progress, personal status and success through careers, rising income and consumption, etc. Essentially, these individualistic ideals would need to shift as degrowth signifies an enhancement of community values, equality and sharing across the board.

Büchs and Koch bring forth the Easterlin paradox which concludes that happiness does not depend on (rising) GDP per capita, and suggest the possibility that people could adapt their preferences to lower material living standards in the longer term if prospects for future improvements are regarded as very low.

Büchs and Koch also address concerns for health and life expectancy, which are negatively impacted specifically during short-term recessions (they give examples mental health deterioration, increases in smoking, alcohol consumption and suicide in places like Russia and Eastern Europe). Though recessions are not comparable to degrowth, they find that how the decreases in resources would impact life expectancy remains unclear. While the goal is for the transition is to not be experienced as welfare loss, there is skepticism of the likelihood of individuals both voluntarily choosing, and more so, politically fighting for simpler and more frugal lives, especially when these individuals come from cultures that seek ever-higher levels of income and consumption (Kallis, 2011; Hamilton & Denniss, 2005). Several researchers address the necessary distinction between needs and luxuries for addressing wellbeing under a degrowth transition (e.g. Koch, Buch-Hansen & Fritz, 2017; Büchs & Koch, 2019). This is a significant (Western) cultural obstacle that needs to be overcome.

In the same realm of thought, Buch-Hansen and Koch (2019) discuss the limited popular support for caps on wealth and/or income. They suggest it may be because the proposals are not fully defined yet and therefore are hard to envision and implement. They also assert that any of these proposals would be met with strong opposition from wealthy individuals. Further, the authors discuss arguments against caps; whereby emigration of high-skilled employees would increase, and the caps would likely lead to capital flight. Moreover, Hennighausen and Heinemann (2014) found the importance of focusing on fairness for voter support of tax reforms.

There have been expressed concerns that economic contraction would lead to unemployment and inequality, and social conflict inherent in rapid societal change (Büchs & Koch, 2019), which would be opposed by the poor. The aforementioned proposals for work-sharing, basic income and job guarantee have been conceived to address these concerns, though it does not help that growth and wellbeing are currently being regarded as strongly coupled by the majority of politicians and the population. With this in mind, it should be acknowledged that degrowth is strongly committed to promoting well-being and quality of life (Natale et al., 2016), and that degrowth can maintain or even improve human wellbeing (Büchs & Koch, 2019). Public opinion is among the numerous barriers to the degrowth movement and needs to be further understood if there is to be any progress toward sustainable human existence.

In areas with a representative democracy, like Canada, the public elects like-minded representatives with the expectation that they will reflect and deliver what it wants in policy, and follow preferences as they change (Wlezien & Soroka, 2016). The degrowth movement needs to be democratic and collective, and is therefore completely dependent on public support. Accordingly, it is extremely important to evaluate public opinion on the subject, as well as the factors that influence it, in order to assess the potential for implementing degrowth policies. Not only does political choice play an important role in influencing social outcomes, the feasibility of policy implementation is dependent on these attitudes and the willingness to accept change (Drews et al., 2018). A report based on 45,435 respondents around the world found a global median of 67% saying they expect that reducing the effects of climate change will require people to make major changes in their lifestyles, though they did not specify in which ways (Stokes, Wike & Carle, 2015). A 2016 study by Bernauer and McGrath found that many respondents prefer to be uninvolved actors in climate policy and remain disengaged in mitigating emissions, but rather

support top-down active climate policy. The authors noted that ambitious climate policy is infeasible without strong public support because it will inevitably affect most citizens. It is therefore difficult to envision what to expect in terms of opinions on lifestyle changes that degrowth proposes. Aside from policy, social movements have been extremely important in pushing degrowth ideas into public debate. For example, degrowth as a social movement in France only emerged from protests for car-free cities, food cooperatives and anti-advertising (Demaria et al., 2013).

2.6 Public opinions on the term degrowth

While there has been research conducted about public opinions on associated topics of degrowth, there has not yet been a study looking at the public opinions of what degrowth would entail, and the willingness for what it proposes. There have been some studies done on initial perceptions of the term *degrowth*. Several arguments against the use of the term have been presented. For example, Drews and Antal (2016) state that initial exposure to a sociopolitical concept creates bias in later phases of political thinking, information processing, opinions and decisions, and add that negative snap judgements can create a very unfavorable starting position for the degrowth argument in the debate about the paradigm of economic growth. The authors explain that most average people will view economic growth as something good, connecting it to positive ideas such as prosperity, employment development, economic and social improvement, higher wages and well-being; while the term degrowth may infer crisis, recession, lower salaries and job losses. On the other hand, several arguments in favor of the term have also been presented. For example, the use of a provocative slogan raises attention as mainstream politicians continue to ignore the unsustainability of growth, while less provocative terms may not firmly stand against

the current paradigm (Daly, 2013; Drews & Antal, 2016). Because imaging a different future is essential to the movement, *degrowth* clearly opposes the current economic system and criticizes "the automatic association of growth with better" (D'Alisa et al., 2015; Drews & Antal, 2016).

2.7 Public opinions on growth versus the environment

Much of the research on public opinions on the growth-versus-environment debate has not included the word *degrowth* in the survey process precisely because it has been found that initial public perceptions of the term are important in forming opinions about the subject. Studies have found that the majority of respondents favored the happy medium, green growth (Drews & Reese, 2018; Drews & van den Bergh, 2016; Kaplowitz et al., 2011). While green growth as a post-growth scenario would also require a social transition, it would be far closer to a business-as-usual scenario for much of the world population. Nevertheless, it currently lacks the necessary technological innovation (Ančić & Domazet, 2015).

Degrowth depends on "widening and deepening of the process of democratization", which is reliant on the "existence and formation of specific value orientations" (Ančić & Domazet, 2015). Accordingly, in their study of 18 European countries, Ančić and Domazet (2015) used several indicators assessing value orientation (e.g. personal willingness to make a material sacrifice in order to protect the environment), pro-environmental behavior intentions, and attitudes on the tradeoff of economic growth and the environment. They found that respondents are not very willing to make personal material sacrifice, and that pro-environmental behavior is focused more on low-impact actions for reducing emissions, such as recycling, rather than high-impact actions like living car-free (see Wynes & Nicholas, 2017). The authors also found that on average, only 27.6% of respondents agree that economic growth harms the environment. These findings indicate

that public knowledge about economic growth and its consequences is inadequate, and may be related to the lack of concern for the current global crises.

While excluding the term degrowth but incorporating the rationale of degrowth conceptualization, very few similar studies have been conducted to assess public opinions on the growth-versus-environment debate, namely in Europe, the United States and China. A study by Xu and Li (2018) found that in the United states, 60.5% of people regard economic growth as a priority, while in China, 46.5% regard the environment as a priority, noting that environmental degradation is a serious problem in China. In a study representative of the Spanish population, Drews & van den Bergh (2016) found that the majority of respondents believe that economic growth allows for job creation, life satisfaction, public services and economic stability. Moreover, two-thirds of respondents believe that economic growth in rich countries may stop at some point in the future, while one-third believe it will be never-ending. In the same study, when choosing a position regarding the relationship between economic growth and the environment, more than one-third of respondents support ignoring or stopping economic growth, while the rest favor the prioritization of economic growth or green growth (Drews & van den Bergh, 2016).

Noting that economic growth is primarily questioned in rich, industrialized countries, Drews et al. (2018) studied data collected from large multinational survey projects in Europe and the United States. The authors looked at whether people see the relationship between environmental protection and economic growth as compatible or contradictory. They reported only 27% of respondents perceiving the two as incompatible, responding positively to the statement "Economic growth always harms the environment", while the majority of respondents who view the two as contradictory also believe that environmental protection contributes to economic growth. A separate study by Drews et al. (2019) found evidence suggesting that people do

prioritize environmental protection over growth, but this finding should be cautioned due to similar attitudinal inconsistencies and limited understanding of key concepts and issues. The authors suggest that public opinions may be considerably unstable and more easily influenced by mediums such as communication.

2.8 Public opinions on degrowth-related policies

Many researchers have also looked at public opinions on some degrowth policy proposals individually, though not linking the policy to degrowth in their studies. It is important to note that these policy considerations are directed toward high income countries. While limiting this review to the policies looked at in this study, the proposals to limit trade, ban new infrastructure and individually tax resource use are relatively new, therefore I am unaware of any existing literature pertaining to public opinions on these policies.

The implementation of a basic income has been a topic of discussion for economists, politicians, academics and the general public all over the world for many years, but still, it remains a topic of debate (Raventós, 2007). Concerns of technical, financial and ethical viability are met with concerns for justice, poverty and inequality (Raventós, 2007). Some research has shown relatively high levels of support, though varying across countries (e.g. Parolin & Siöland, 2020; Roosma & van Oorschot, 2020). Parolin and Siöland (2020) found that individuals with left political ideology and those in countries where social spending is low are more likely to support it. Roosma and van Oorschot (2020) similarly found individuals on the political left to be more likely to support basic income, as well as younger individuals, those who are in a more vulnerable socio-economy position and those who are egalitarian.

Hennighausen and Heinemann (2014) looked at support for progressive taxation and found the majority to approve such a system. The approval was largely based on the individual's fairness considerations and beliefs in the role of effort for economic success (i.e. that people need to "deserve" or "earn" any income they receive), as well as their position in the income distribution. Reimers (2009) also found their participants to favor a progressive tax regime. The author found that support for progressive taxation is affected by the way the scenario is framed (i.e. in terms of income retained versus tax paid), and by describing the amount of the tax in percentages versus amounts. People preferred the percentages of income.

Public opinions on the reduction of work hours vary highly. For instance, those with higher incomes have been found to prefer a reduction in workload, likely due to a more secure standard of living, while the opposite is true for those with lower incomes who likely cannot afford a decrease in income (Stier & Lewin-Epstein, 2003). However, those motivated by a desire for high incomes have been found to want more hours (Reynolds, 2004). Additional factors that impact support for a reduction of work hours include age, education, number of hours worked per week, occupation, where older workers, those with a higher education, and those who work more hours per week are likely to be overworked and prefer a reduction in hours (Golden & Gebreselassie, 2007).

2.9 Determinants of environmental values

Most public opinion studies are accompanied by their socio-demographic determinants. In order to understand public opinion on a subject, it is helpful to assess the factors that influence individual opinions. Doing so can identify potential openings or obstacles to achieving social change. As degrowth is by definition, a pursuit of sustainability (both social and environmental),

it could be thought of as an environmental value in itself. Below are the potential socio-demographic factors that could have an effect on support for degrowth.

2.9.1 Age

Many researchers have found that environmental values to decline with age (e.g. Franzen & Meyer, 2010; Hawcroft & Milfont, 2010), potentially because of recent increases in environmental education, changing norms in concern for the environment (Whitmarsh, 2011). A separate argument postulates that younger people are less integrated in the dominant social order, which is sometimes seen as threatened by environmental policies that require changing values and behavior, therefore it is logical for younger people to support environmental reform (Van Liere & Dunlap, 1980). This would mean age should have a negative effect on policy support, independent of environmental values. Other researchers have found age to either have a positive effect or mixed effects on environmental attitudes (e.g. Franzen & Vogl, 2013; Shen & Saijo, 2008; Wiernik et al., 2013, Xu & Li, 2018). One reason for this could be that younger people have been found to have more faith in technological advancement as the answer to environmental issues, and therefore feel no urgency to change (Benn, 2004).

2.9.2 Education

Educational attainment has consistently been found to have a positive effect on environmental concern (e.g. Dunlap et al., 2000; Ejelöv & Nilsson, 2020; Franzen & Meyer, 2010; Franzen & Vogl 2013; Tomaselli et al., 2019, Xu & Li, 2018), also increases choice of environment over economic progress (Dietz, Stern & Guagnano, 1998), and increases the view that excessive attention is given to economic growth (Drews & van den Bergh, 2016).

2.9.3 Income

Income has been shown to have a positive effect on environmental values (e.g. Franzen & Meyer, 2010; Franzen & Vogl 2013; Shen & Saijo, 2008; Tomaselli et al., 2019), suggesting the two are not independent of each other. One possible reason for this is discussed by Van Liere an Dunlap (1980), which draws on Maslow's (1970) hierarchy of needs, whereby upper and middle classes are able to achieve their basic needs and are therefore free to put their energy toward other issues, like concerning themselves with the state of the environment. Another interesting argument is made by Morrison et al. (1972) and discussed by Van Liere an Dunlap (1980) who state "the middle and upper classes are more likely to have experienced pleasant residential, work, and recreational environments, and consequently are more concerned about the deterioration of the physical environment". Effects of income on concern for the environment have also been mixed, negative or non-significant (Dunlap et al., 2000; Ejelöv & Nilsson, 2020, Xu & Li, 2018). One of the main arguments put forth here is that because the lower class is typically at the frontline of poor environmental conditions, be it living and/or working in highly polluted areas, having access to poor recreational facilities (Buttel & Flinn, 1978), or suffering disproportionately from the adverse effects of climate change (Islam & Winkel, 2017), they are expected to be concerned with the environment. Moreover, when speaking on the environmentalism of the poor, Martinez-Alier (2014) states that "in the many resource extraction and waste disposal conflicts in history and today, the poor are often on the side of the preservation of nature against business firms and the state". The author adds that people will act when the environment is a source of livelihood, and wealthier people have in general lost their sense of the environment as such.

2.9.4 Employment status

Employment status has been found to be almost irrelevant to environmental concern (Franzen & Meyer, 2010; Shen & Saijo, 2008; Torgler & García-Valiñas, 2007), while some researchers have not even included the variable in their analyses (e.g. Franzen & Vogl 2013).

2.9.5 Gender

Women have been consistently found to have greater environmental values (e.g. Franzen & Meyer, 2010; Franzen & Vogl, 2013; Torgler & García-Valiñas, 2007), potentially due to "traditional gender socialization, cultural norms, the women's roles as caregivers and nurturers" (Torgler & García-Valiñas, 2007).

2.9.6 Political orientation

Left-wing political orientation has consistently been shown to positively correspond with: environmental values (e.g. Dunlap et al., 2000; Tomaselli et al., 2019); belief in the limits to growth (Drews & van den Bergh, 2016); indifference about growth (Drews & van den Bergh, 2017; and support for climate and energy policies (Mildenberger et al., 2017). Dunlap (1975) puts forth three possible reasons for the division when noting the conservative pro-business stance, the greater opposition to "big government", and suspicion of drastic change, stating that conservatives will oppose environmental policies because: "(1) the costs involved, they are generally opposed by business and industry (2) they often entail an extension of governmental activities and control over the private sector of society, and (3) they often call for drastic and very innovative action".

2.9 Social rationality

Etzioni (1988) discusses the role of social collectivities (e.g. local communities, ethnic groups, and social movements) as major decision-making units that provide the context in which individual decisions are made. The author states that the qualities of most decision-making and deliberation — the collection of information, its processing, the drawing of inferences, and formation of judgements — are deeply affected and can be explained to a significant extent by collective processes and structures (institutions and organizations). The role of social collectivities is compared to the role of individuals in neoclassical economics, whereby individuals are assumed to be the decision makers, independent of historical and societal factors. The neoclassical paradigm is described here as utilitarian and rationalistic-individualistic. Instead, another paradigm has been put forth by Etzioni, the I&We paradigm: It sees individuals as able to act rationally and on their own, advancing their self or "I", but their ability to do so is deeply affected by how well they are anchored within a sound community and sustained by a firm moral and emotive personal underpinning — a community they perceive as theirs, as a "We", rather than an imposed, restraining "they". Etzioni parallels subjects studied individually and one at a time, to studying the direction a fish swims after isolating one from its school; the individual must "perform the assigned cognitive tasks and render decisions without the cues they typically draw on — those provided by the social collectivities of which they are members". By using a survey, respondents are isolated and only have the opportunity to think as individuals. Relatedly, Dietz, Fitzgerald & Shwom (2005) critique the use of surveys in relation to environmental values, explaining that the influence of values on decision making depends on a decision context that allows for reflection, and that the context of a survey does not encourage said reflection. While values can be defined in

several different ways, Dietz et al. say that we tend to use them in three senses in everyday language: what something is worth, opinions about that worth, and moral principles. Values are important to consider here, as they are argued to influence individual decisions, that inevitably shape individual, and ultimately group behavior (Dietz et al., 2005). Relatedly, Vatn (2006) discusses the role of institutions in the formation and articulation of value; the author defines institutions as the conventions, norms and legal rules of a society, that provide expectations, stability and meaning essential to human existence and coordination, and regularize life, support values and protect and produce interests. Preferences and values can be articulated through, for example, markets, voting, and different forms of deliberative institutions like consensus conferences and citizens' juries, which in turn assert the role of the individual while also fostering social rationality (Vatn, 2006). With the ultimate goal of implementing viable degrowth-related policies, the role of institutions should be considered as they "define the conventions, norms and legal rules that structure relationships between people concerning their access to and use of environmental resources" (Vatn, 2006).

2.10 Gaps in knowledge

As the term degrowth has only recently emerged, there are very few studies on the public opinions of degrowth, and these are limited in scale, locations and cultures researched. Moreover, existing studies look at public opinions on economic growth, prosperity, and their relation to the environment, or on degrowth related policies individually, but they do not look at public opinions on degrowth itself (as a movement). By integrating several degrowth policy proposals and the idea of a degrowth transition in Canada, this study aims to find a more holistic understanding of public opinions on degrowth, specifically in Montréal.

CHAPTER 3
MANUSCRIPT

3.1 Introduction

The current atmospheric carbon dioxide concentration is unprecedented over the last three million years (Willeit et al., 2019). The science is clear: Earth's atmosphere and oceans have warmed, snow and ice volume have diminished, sea levels have risen, and the concentrations of greenhouse gases have increased (IPCC, 2013). The Intergovernmental Panel on Climate Change (IPCC), the international body for assessing the science related to climate change, has projected outcomes concerning human health that could affect the status of millions of people through increases in malnutrition, increased deaths, disease and injury due to heat waves, fires, storms and droughts, increased vector-borne diseases, and more (IPCC, 2013). The 2015 Paris Agreement established the international goal of limiting global temperature increase to well below 2°C above pre-industrial levels (period 1850-1900) and to aim for 1.5°C to reduce the risks and impacts of climate change (UNFCCC, 2015). However, the United Nations' Emissions Gap Report 2018 confirmed that global efforts to decrease emissions have been inadequate thus far.

For decades, scholars have warned about human impacts on the environment, cautioning us on our exhaustive use of resources and the implications of our seemingly innate need to grow as individuals, societies and nations (e.g. Carson, 1962; Daly, 1991, 1996; Georgescu-Roegen, 1971, 1975; Hirsch, 1976; Meadows et al., 1972). As the quest for growth continues, many still face poverty and inequality. The field of Ecological Economics has developed considerably over the past century, notably delivering critiques of economic growth. Researchers have argued that the 2°C threshold will likely be exceeded if growth continues, and that ideas of sustainable

development and green growth will not adequately address the climate crisis (e.g. Hickel & Kallis, 2019). Many have asserted that economic growth is not compatible with social and ecological sustainability (e.g. D'Alisa et al., 2015; Kallis et al., 2018; Kosoy et al., 2012; Martinez-Alier, 2009). One of the more popular examples of investigation into economic growth was Donella Meadows and colleagues in *The Limits to Growth*, in which they wrote about growth trends in world population, industrialization, pollution, food production, and resource depletion. They concluded that the biophysical limits to growth would be reached within a century if these trends are maintained (Meadows et al., 1972). The authors offered a second outcome, in which economic and ecological sustainability were to be met by altering the above trends in order to reach a 'global equilibrium' whereby every individual has equal opportunity and their basic needs are met. Fifty years later, we find ourselves moving closer and closer to the former outcome, as current global resource use follows the "collapse by 2050" scenario presented in the report (Jackson & Webster, 2016). Human socio-economic activities have led to stark changes in the Earth system (Steffen et al., 2015b), meaning that economic growth is one of the main drivers for rising emissions (e.g. Peters et al., 2017; Zhang et al., 2014). Economic growth remains one of the main goals for every nation (United Nations, 2019), despite evidence that continued economic growth is not a sustainable development trajectory (e.g. Jackson, 2009), as it would perpetuate dependence on fossil fuels, extractivism and exploitation. It has been argued that economic contraction is unavoidable due to natural limits, therefore any research on managing and prospering without growth is of great value.

To address climate change and many other issues associated with growth, degrowth has been proposed as an alternative to the current growth paradigm. While degrowth is stated as being "rich in its meanings and [not embracing] one single philosophical current" (Demaria et al., 2013),

it is commonly defined as "an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level, in the short and long term" (Schneider, Kallis & Martinez-Alier, 2010). At the core of the degrowth movement are numerous interconnected ideas and beliefs about how to make the world a better place for all living beings. In their review, Cosme et al. (2017) identified 3 concrete degrowth goals with related policy proposals. The first goal they describe is to reduce the environmental impact of human activities through policies that reduce material and energy consumption, create incentives for local production and consumption, and promote changes in consumption patterns, etc. (e.g. tax consumption, pollution and resource use; create moratoria on new infrastructure, and resource use and extraction). The second degrowth goal is to redistribute income and wealth both within and between countries through policies that promote community currencies, non-monetary exchange systems and alternative credit institutions, promote a fair distribution of resources through redistributive policies of income and capital assets, promote work-sharing, and create a citizen's income and salary caps. The third goal is to promote the transition from a materialistic to a convivial and participatory society through policies that promote downshifted lifestyles, reduce working hours, and explore the value of unpaid and informal activity.

The political and economic feasibility of a degrowth transition has been well addressed and challenged in academic literature (e.g. Büchs & Koch, 2019; Tokic, 2012; van den Bergh, 2011), whereas the social and cultural feasibility has been addressed much less. Among shifting economic goals and changing values, a cultural revolution is needed for degrowth to gain momentum (D'Alisa et al., 2014; Latouche, 2009). The degrowth movement arose from the global North, from and for individuals who enjoy comparatively high levels of objective and subjective wellbeing (Büchs & Koch, 2019), and are concerned with their culture's desire for ever-higher levels of

income and consumption. A democratically led transition whereby individuals would both voluntarily choose, and even more, politically fight for simpler and more frugal lives is hard to imagine (Buch-Hansen & Koch, 2019), thus representing a substantial cultural obstacle.

In areas with a representative democracy, like Canada, the public elects like-minded representatives with the expectation that they will reflect and deliver what it wants in policy and follow preferences as they change (Wlezien & Soroka, 2016). The degrowth movement needs to be democratic and collective and is therefore completely dependent on public support. Accordingly, it is extremely important to evaluate public opinion on the subject, as well as the factors that influence it, in order to assess the potential for implementing degrowth policies. Not only does political choice play an important role in influencing social outcomes, the feasibility of policy implementation is dependent on these attitudes and the willingness to accept change (Drews et al., 2018).

Public opinions on degrowth have scarcely been researched. Much of the associated literature has been identified in a 'growth versus environment' debate (e.g. Drews & van den Bergh, 2016; Tomaselli et al., 2019; Xu & Li, 2018). Findings show that economic growth is largely perceived as positive (Tomaselli et al., 2019), that many people view economic growth and environmental protection as compatible (Drews et al., 2018), and few people support ignoring or stopping economic growth (Drews & van den Bergh, 2016). Contradictory views, attitudinal inconsistencies and limited understanding of key concepts and issues have been found in several studies (e.g. Drews et al., 2018; Drews et al., 2019; Tomaselli et al., 2019)

Separately, many have conducted public opinion studies on single policy proposals. For example, some research has shown relatively high levels of support for the implementation of a basic income (e.g. Parolin & Siöland, 2020; Roosma & van Oorschot, 2020). Hennighausen and

Heinemann (2014) looked at support for progressive taxation and found the majority of their respondents to approve such a system. Public opinions on the reduction of work hours vary highly. For instance, those with higher incomes have been found to prefer a reduction in workload, likely due to a more secure standard of living, while the opposite is true for those with lower incomes who likely cannot afford a decrease in income (Stier & Lewin-Epstein, 2003). Policy support has largely been found to be higher among younger people, the more highly educated, the political left, and those with high environmental values (e.g. Golden & Gebreselassie, 2007; Mildenberger et al., 2017; Parolin & Siöland, 2020; Roosma & van Oorschot, 2020; Van Liere & Dunlap, 1980). However, Ančić and Domazet (2015) found that respondents are not very willing to make personal material sacrifice, and that pro-environmental behavior is focused more on low-impact actions for reducing emissions, such as recycling, rather than high-impact actions like living car-free (see Wynes & Nicholas, 2017).

Higher environmental values have consistently been associated with women (e.g. Franzen & Meyer, 2010; Franzen & Vogl, 2013; Torgler & García-Valiñas, 2007), younger people (e.g. Franzen & Meyer, 2010; Hawcroft & Milfont, 2010), the more highly educated (e.g. Dunlap et al., 2000; Ejelöv & Nilsson, 2020; Franzen & Meyer, 2010; Franzen & Vogl 2013; Tomaselli et al., 2019, Xu & Li, 2018), those with higher incomes (e.g. Franzen & Meyer, 2010; Franzen & Vogl 2013; Shen & Saijo, 2008; Tomaselli et al., 2019), and left-wing political orientation (e.g. Dunlap et al., 2000; Tomaselli et al., 2019).

Economic growth is seen as being linked to wellbeing by the majority of politicians and the population (Büchs & Koch, 2019). Some concerns surrounding the possible negative wellbeing implications from the decrease of material living standards of a degrowth transition are discussed by Büchs and Koch (2019). They address concerns about happiness and life satisfaction,

considering that degrowth would challenge people's mindsets, identities and life goals. This includes, for instance, ideas of justice, freedom, private property, individual responsibility, social progress, personal status and success through careers, and rising income and consumption. Essentially, these individualistic ideals would need to shift as degrowth signifies an enhancement of community values, equality and sharing across the board. Several researchers address the necessary distinction between needs and luxuries for addressing wellbeing under a degrowth transition (e.g. Koch, Buch-Hansen & Fritz, 2017; Büchs & Koch, 2019).

The concept of social rationality is brought in for the policy support section of this study. It was conceptualized by Etzioni (1988), who put forth the I&We paradigm: It sees individuals as able to act rationally and on their own, advancing their self or "I", but their ability to do so is deeply affected by how well they are anchored within a sound community and sustained by a firm moral and emotive personal underpinning — a community they perceive as theirs, as a "We", rather than an imposed, restraining "they". As such, reflecting on the implications of one's actions – in this context, on other beings and the environment – through a social rationality 'lens' has the potential to alter initial, individualistic thoughts or opinions.

Degrowth has a presence in Québec. Yves-Marie Abraham (2019) wrote an article touching on the founding of the Québec Movement for a Convivial Degrowth (MQDC: le Mouvement Québécois pour une Décroissance Conviviale) in 2007, of which he was a part of. The MQDC is comprised of a broad range of activists and academics, and its main objective upon formation was to introduce and promote the idea of degrowth in public discourse in Québec through organized study groups, workshops, public lectures and seminars to fuel discussion. It is thanks to this community that Abraham was able to create and teach the first university course on degrowth in Canada, at HEC Montréal, making the degrowth movement in Québec both a social and academic

one. Since then, degrowth has gained some traction in the province by hosting the 2012 Degrowth Conference of the Americas through several Montréal universities, along with degrowth festivals in 2018 and the launch of 3 videos on a Radio-Canada channel by a journalist group called “Rad”, looking at ideas of degrowth. While not necessarily associated with degrowth per say, Montréal is home to many degrowth-oriented projects, including a plan for a complementary currency (a sort of local basic income), co-operative projects such as le Bâtiment 7 in Pointe St-Charles, the tool library in Villeray, collective repair shops, community gardens, and Eco-villages outside of Montréal. Co-operatives are closely tied to degrowth as they share very similar values: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; commitment to education about the nature and benefits of co-operation; cooperation among cooperatives; and concern for the sustainable development of their communities (International Co-operative Alliance; Johanisova et al., 2015). So, Montréal and Québec are fertile ground for degrowth, but a movement has yet to truly form and affect substantial change.

As the term degrowth has only recently emerged, there are very few studies on the public opinions of degrowth, and these are limited in scale, locations and cultures researched. Moreover, existing studies look at public opinions on economic growth, prosperity, and their relation to the environment, or on degrowth related policies individually, but they do not look at public opinions on degrowth itself (as a movement). By integrating several degrowth policy proposals and the idea of a degrowth transition in Canada, this study aims to find a more holistic view of public opinions on degrowth and contribute to existing literature.

With the aim of assessing public support for degrowth in Montréal through the use of an online survey, section 3.2 presents the methodology used for the study, including the survey

sample and data collection process and a discussion of the variables. In section 3.3, I provide a data analysis section, where I discuss the data set, hypotheses and introduce the procedures for the statistical and qualitative analyses. The results section begins with an overview and brief discussion of the respondents' pre-existing environmental values. I then assess the overall policy support of the respondents, the effects of social rationality statements, the determinants of policy support, the overall support for a degrowth transition in Canada and the determinants for this support. Lastly in the results section, I provide a summary of open-ended answers respondents provided for not supporting policies. Finally, I provide a discussion and conclusion.

3.2 Methodology

3.2.1 Survey sample and data collection

The survey questionnaire was developed in French and English to allow accessibility for all Montréal participants, and was completed by 385 Montréal residents over the age of 18. The survey was implemented by Dynata, a global online market research firm. The final data were collected in March 2020. The average survey completion time was 11 minutes. Participants completed questions separated into 4 modules (see Appendix A for the full questionnaire):

- Module 1: Socio-demographics
- Module 2: Environmental values
- Module 3: Support for degrowth policy proposals
- Module 4: Support for a degrowth transition in Canada

The administration of a survey was chosen in order to produce large amounts of data in a short amount of time, in comparison to other methods like interviews or focus groups. Surveys or

opinion polls are the dominant method used by politicians, media organizations, interest groups, and academic researchers to assess the public will and political views of the mass public, explains Berinsky (2017). Notably, the technically correct way to draw a sample that is representative of a population is through a process of simple random sampling, where each individual is chosen by chance and each has an equal chance of being included, however this is near impossible to achieve (Berinsky, 2017). The findings later presented in this study are thus not statistically representative of the Montréal population due to Dynata's nonprobability opt-in panel that inherently excludes people who are not using the internet, making the sample non-random. Much of online research is conducted using nonprobability samples (Berinsky, 2017), however, valuable information can nevertheless be extracted.

3.2.3 Independent variables

3.2.3.1 Module 1

To examine individual-level variation in public opinions regarding degrowth-related policy implementation I used two sets of explanatory variables: socio-demographic variables and environmental values. Module 1 included the standard demographic variables used in similar studies, including age, income, educational attainment and political orientation (e.g. Drews & van den Bergh, 2016; Tomaselli et al., 2019). I did not include gender as a variable, but rather represented gender roles through time used for housework, including activities like preparing meals, washing dishes, cleaning house, and washing laundry (Rochette, 2016). While gender has been shown to affect environmental values, I chose to proxy it because time-use seemed more relevant when considering policy support. I also included a variable of participants' time used to commute/travel per week. These variables are listed as primary activities by the American Time

Use Survey, and were included in this study as they pertain to the policy proposals included in the survey, which will be further discussed below. Table 3.1 reports the descriptive statistics of the socio-demographic characteristics of survey respondents and of the Montréal population. The distributions of the participants' time use regarding travel and housework can be visualized in Figures 3.1 and 3.2.

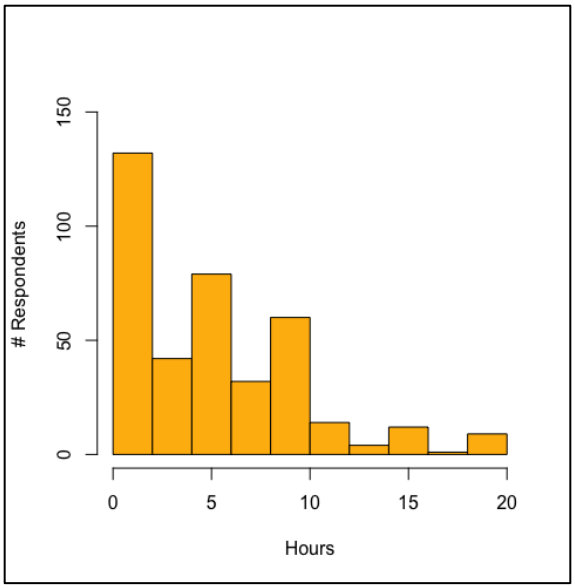

Figure 3.1 Hours/week spent traveling

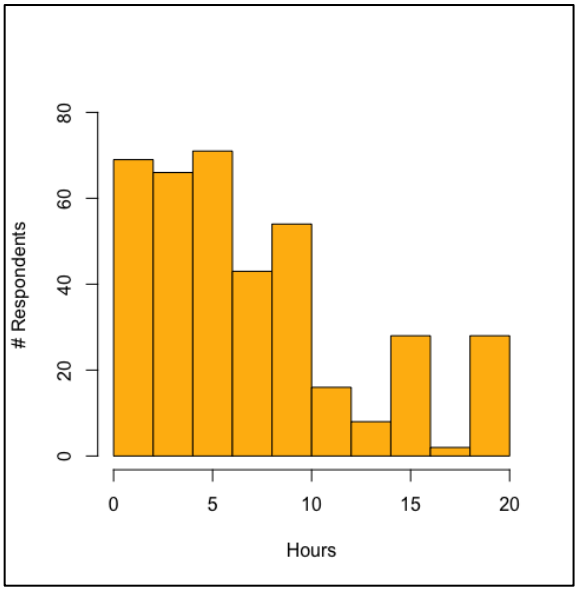

Figure 3.2 Hours/week spent doing housework

Table 3.1 Sociodemographic characteristics of survey respondents and of the Montréal population

Survey respondents	**N**	**Mean (SD) or Valid %**	**Montréal population**	**%**
Age			Age[a]	
18 to 24	35	9.1%	18 to 24	8.0%
25 to 34	77	20.0%	25 to 34	13.4%
35 to 44	86	22.3%	35 to 44	13.9%
45 to 54	92	23.9%	45 to 54	14.2%
Over 55	95	24.7%	Over 55	29.5%
Household income			Household income	
Under $29,999	49	12.7%	Under $29,999	22.6%
$30,000 to $59,999	84	21.8%	$30,000 to $59,999	33.6%
$60,000 to $89,999	71	18.4%	$60,000 to $89,999	21.6%
$90,000 to $119,999	66	17.1%	$90,000 to $119,999	10.8%
$120,000 to 149,999	66	17.1%	$120,000 to 149,999	6.2%
Over $150,000	49	12.7%	Over $150,000	5.2%
Educational attainment			Educational attainment[b]	
High school diploma	56	14.5%	High school diploma	21.7%
Some CEGEP or university	48	12.5%	Some CEGEP or university	--
CEGEP or technical school certificate	108	28.1%	CEGEP or technical school certificate	17.5%
Undergraduate degree	99	25.7%	Undergraduate degree	15.9%
Graduate degree	74	19.2%	Graduate degree	6.6%
Employment status			Labour force status[c]	
Not working	98	25.5%	In the labour force	65.9%
Working part-time	48	12.5%	Employed	92.5%
Working full-time	239	62%	Unemployed	0.07%
			Not in the labour force	34.0%
Political orientation			% of vote by political party[d]	
Far-left	17	4.4%	Conservative Party	9.4%
Center-left	83	21.6%	Liberal Party	41.4%
Center	201	52.2%	New Democratic Party (NDP)	11.4%
Center-right	71	18.4%	Bloc Québécois	31.0%
Far-right	13	3.4%	Green Party	5.2%
			Other	1.3%
Average hours per week spent:			Average hours per week spent:	
Traveling / commuting		5.5 (4.7)	Traveling / commuting	--
Doing housework		7.48 (5.4)	Doing housework	--

[a] Data excludes Canadians 18 years old or less. Source: Statistics Canada, 2016 Census Profile.
[b] The educational categories used in this study do not fully correspond those of Statistics Canada. Source: Statistics Canada, 2016 Census.
[c] The employment status categories used in this study do not fully correspond those of Statistics Canada. Source: Statistics Canada, 2016 Census.
[d] 2019 federal elections data. The political orientation categories in this study do not correspond to those of Elections Canada. Source: https://enr.elections.ca/MajorCentres.aspx?lang=e

3.2.3.2 Module 2

As the second set of explanatory variables, Module 2 included a series of attitudinal statements in order to gauge the pre-existing attitudes and environmental values of the sample. This module consisted of 6 Likert-type statements on a scale from 1-5. The first inquired about respondents' concern for climate change on a scale from 'Not at all concerned' to 'Extremely concerned', a variable that has been used in most studies looking environmental values (e.g. Leiserowitz, 2006; Geiger & Swim, 2016). The following four statements were taken from La Trobe and Acott (2000) and were put on a scale from Strongly disagree (1) to Strongly agree (5). They read:

- A change in basic attitudes and values is necessary in order to solve environmental problems.
- Technology can overcome any environmental problems.
- Natural resources should be used primarily to provide for basic needs rather than material wealth.
- Humans are presently interfering too much with the natural environment.

The last statement was inspired by Drews and van den Bergh (2016), which was put on the above Likert scale and read:

- The highest priority should be given to protecting the environment, even if it hurts the economy.

In order to avoid redundant information by using each of these variables, I created an index of environmental values to be used as a single predictor variable in the regression analysis. First, I reversed the order of the scale for the statement "Technology can overcome any environmental problems" to make it match the same logic as the other statements, then, I averaged each

participant's response so that they were left with one single number on a scale from 1-5 representing their environmental values.

3.2.3.3 Exclusion of variables from regression analysis

To avoid information redundancy through the inclusion of environmental values in the regression models, three variables were excluded from analysis. First, educational attainment has consistently been found to have a positive effect on environmental concern (e.g. Dunlap et al., 2000; Ejelöv & Nilsson, 2020; Franzen & Meyer, 2010; Franzen & Vogl 2013; Tomaselli et al., 2019, Xu & Li, 2018). Educational attainment also increases choice of environment over economic progress (Dietz, Stern & Guagnano, 1998), and increases the view that excessive attention is given to economic growth (Drews & van den Bergh, 2016). Therefore, education should have no effect on policy support independent of environmental values and was excluded in analysis.

Second, employment status has been found to be almost irrelevant to environmental concern (Franzen & Meyer, 2010; Shen & Saijo, 2008; Torgler & García-Valiñas, 2007), while some researchers have not included the variable in their analyses at all (e.g. Franzen & Vogl 2013). With this, I excluded employment status from my analysis and consider respondents' income representative of their economic situation.

Third, left-wing political orientation has consistently been shown to positively correspond with: high environmental values (e.g. Dunlap et al., 2000; Tomaselli et al., 2019); belief in the limits to growth (Drews & van den Bergh, 2016); indifference about growth (Drews & van den Bergh, 2017; and support for climate and energy policies (Mildenberger et al., 2017). Dunlap (1975) puts forth three possible reasons for the division when noting the conservative pro-business stance, the greater opposition to "big government", and suspicion of drastic change, stating that conservatives will oppose environmental policies because: "(1) the costs involved, they are

generally opposed by business and industry, (2) they often entail an extension of governmental activities and control over the private sector of society, and (3) they often call for drastic and very innovative action". Therefore, political orientation should have no effect on policy support independent of environmental values and was excluded in analysis. Finally, the independent variables included in analysis were age, income, time used for traveling, time used for housework and environmental values.

3.2.3 Dependent variables

In an effort to encapsulate some of the main goals of degrowth, I returned to Cosme et al.'s (2017) analysis of degrowth proposals and chose 6 to act as dependent variables for this study. In Module 3, participants were asked whether they would support the implementation of such a policy. The 6 policy proposals are to:

(1) limit trade distances and volume;

(2) create a moratorium on new infrastructure (e.g. nuclear plants, highways, dams);

(3) tax resource use;

(4) implement redistributive taxation schemes (I referred to this proposal as progressive taxation);

(5) create a basic/citizen's income; and

(6) reduce working hours.

Cosme et al. (2017) found that the majority of degrowth proposals published in academic literature are focused at the national level and follow a top-down approach, therefore each proposal I selected was from these categories, with the exception of one having an international focus: limiting trade.

I included this proposal because I was interested in seeing whether respondents would be reluctant to give up some of the goods they consume from elsewhere in the world.

As part of the survey questionnaire, participants were asked whether or not they would support the implementation of a policy. For 4 out of the 6 policies, each of the participants who said they would not support it was prompted with a follow-up question that included a statement intended to facilitate a social rationality within the participant's logic. The follow-up statements I wrote shared facts about the implications each policy has on other beings (human or non-human) and on the natural environment. This was done to encourage participants to reflect on the effects of their decision-making. They were then asked again whether they support the policy, bearing in mind what they had just read. These statements are summarized in Table 3.2. As put forth by Etzioni (1988), surveys are not the best way to elicit a social rationality due to the isolation of respondents and the sole requirement of thinking as an individual. A more fitting approach to of capturing social rationality is the use of focus groups, allowing participants to deliberate issues as a collective. If participants still did not support the policy, they were asked why not.

In Module 4, respondents were asked whether they had heard of degrowth and understood what it entails. If respondents answered yes, they were asked whether they would support a degrowth transition in Canada. If respondents answered no, they were given a commonly used definition of degrowth (see Appendix A), and then asked whether they would support the transition. Each of these binary variables were used as the response variables in the regression analysis detailed below. Lastly, if participants did not support the policy proposal or a degrowth transition in Canada, they were prompted with an open-ended question, asking them why they did not support them.

Table 3.2 Social rationality statements included in follow up questions for policy support

Policy proposal	Social rationality statement
Limit trade distances and volume	*In September 2019, Canada imported $50 billion and exported $50 billion worth of goods and services. Some of the major results of the international trade we support through our consumption habits include greenhouse gas emissions from increased economic activity and transportation, pollution, degrading natural resources, etc.*
Create a moratorium on new infrastructure	*Some of the major results of oil sands projects and pipelines include violation of Indigenous rights, greenhouse gas emissions, waste management issues, pipeline leaks and ruptures, decreased air quality, risks to wildlife, population displacement, water contamination, etc.*
Tax resource use	*Some of the major results of our energy consumption include climate change due to greenhouse gas emissions, air pollution, forest destruction, ecosystem degradation, unequal access to energy, health impacts from air pollution, population displacement, dam failures, etc.*
Create a basic income	*While a universal basic income would lead some people to earn less money, it would also alleviate those in poverty by ensuring that everyone's basic human needs (i.e. supply of clean water, food, housing) are met.*

3.3 Data analysis

3.3.1 Dataset

The dataset was exported from Dynata in the form of a raw Excel file, and imported into RStudio software to carry out data analysis. Dynata was responsible for performing data quality checks, whereby surveys from respondents who answered too quickly ("speeders"), and surveys with nonsensical feedback on open-ended questions were removed and replaced. Each survey was given a unique code by Dynata, and I numerically coded the responses to allow for statistical analysis. The numerical codes are summarized in Table 3.3.

Table 3.3 Numerical coding for the different modules of the survey

	Independent variables
Module 1 Sociodemographics	Income: Under $29,999 = 1; $30,000 to $59,999 = 2; $60,000 to $89,999 = 3; $90,000 to $119,999 = 4; $120,000 to 149,999 = 6; Over $150,000 = 7 Education: High school diploma = 1; Some CEGEP or university = 2; CEGEP or technical school certificate = 3; Undergraduate degree = 4; Graduate degree = 5 Employment status: Not working = 1; Working part-time = 2; Working full-time = 3 Political orientation: Far-left = 1; Center-left = 2; Center = 3; Center-right = 4; Far-right = 5
Module 2 Environmental Attitudes	Not at all concerned = 1; Somewhat unconcerned = 2; Neutral = 3; Somewhat concerned = 4; Extremely concerned = 5 Strongly disagree = 1; Disagree = 2; Neutral = 3; Agree = 4; Strongly agree = 5
	Dependent variables
Module 3 Support for policy proposals	Yes = 1; No = 0
Module 4 Support for degrowth	Yes = 1; No = 0

During analysis, the ordinal variables were treated as continuous; a recommendation discussed by Pasta (2009) and Williams (2019). In similar situations, the main concern that is usually expressed is the assumption that ordinal categories are equally spaced, or more precisely, that they have interval-level measurement with linear effects (Williams, 2019). In their analyses, Pasta established that the modelling results are "remarkably insensitive to the spacing of an ordinal variable except in the most extreme cases" and Williams confirmed that "it will often be ok to treat an ordinal variable as though it had linear effects".

3.3.2 Statistical analysis

Using the RStudio software, I carried out descriptive statistics, correlational analyses, regression analyses and production of graphics. In order to assess the potential effect of

sociodemographic variables and environmental values on support for policy proposals, I performed logistic regression, a mathematical modeling approach that can be used to describe the relationship of several independent variables to a dichotomous dependent variable (Kleinbaum & Klein, 2002). To compute this, I used the `glm` (generalized linear model) function in R. The structure of a GLM includes a response variable *y* and *k* predictors, and we use this to understand how the mean of *y* varies as the values of the predictors change (Fox & Weisberg, 2011). Explained by Fox and Weisberg, a GLM consists of three components:

1. A *random component*, which specifies the conditional distribution of the response variable given the predictors. For my models, the binomial distribution was used, as the response variables (support for policy proposals) had binomial response options (yes/no).
2. The predictors in a GLM are translated into a set of k regressor variables, $\mathbf{x} = (x_1, \ldots, x_k)$. In a GLM, the response depends on the predictors only through a linear function of the regressors, called the *linear predictor*,

$$\eta(\mathbf{x}) = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k$$

3. The *link function* translates from the scale of the mean response to the scale of the linear predictor. For my models, I used the default link of the binomial family, the logit link,

$$\log_e \frac{\mu}{1-\mu}$$

The equation for logistic regression can therefore be written as

$$\log_e \left[\frac{\hat{\mu}\,(\mathrm{x})}{1-\hat{\mu}\,(\mathrm{x})}\right] = \beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k \qquad (3.3)$$

where $\log_e \left[\frac{\hat{\mu}\,(x)}{1-\hat{\mu}\,(x)}\right]$ denotes the expected value of the predictor variable *y* (whether or not respondents support the policy proposal), β_k denotes the parameters, and x_k denotes the explanatory variables (socio-demographics and environmental values).

While there is no agreed upon index of goodness of fit in logistic regression, several exist and are referred to as pseudo-R^2 s, as analogs of R^2 used in ordinary least-squares regression (Cohen et al., 2003). R^2 denotes the coefficient of determination, the proportion of the total sample variability around *y* that is explained by the predictors (Cohen et al., 2003). To calculate the coefficient of determination for each of my models, I used McFadden's (1974) pseudo-R^2,

$$R^2_{MF} = 1 - \frac{LL(Full)}{LL(Null)} \tag{3.4}$$

where LL(Full) denotes the full-model log-likelihood (or the residual deviance) and LL(Null) denotes the intercept-only log-likelihood (or the null deviance) (Smith & McKenna, 2013).

To test whether the inclusion of social rationality had a statistically significant effect on the responses of support for policy proposals, I employed the Chi-squared Test of Independence, whereby two random variables *x* (support for the policy proposal before the inclusion of social rationality) and *y* (support for the policy proposal after) are called independent if the probability distribution of one variable is not affected by the presence of another (Yau, 2020). Yau explains the equation written as

$$\mathcal{X}^2 = \sum_{i,j} \frac{(f_{ij} - e_{ij})^2}{e_{ij}} \tag{3.2}$$

where f_{ij} denotes the observed frequencies belonging to both *i*-th category of *x* and *j*-th category of *y*, e_{ij} denotes the corresponding expected frequencies if *x* and *y* are independent.

3.3.3 Hypotheses

3.3.3.1 Valuation of the environment and the economy

To inform the research topic of public opinions on degrowth in Montréal, there are several secondary questions I would like to answer. Acknowledging that I am the first researcher to address this topic in Montréal, I can only draw on literature from elsewhere in the world which itself is very limited. My first research objective is to assess how respondents weigh the environment versus the economy, an objective that is informed by Drews et al. (2018), who found that in most countries, people prioritize environmental protection over the economy, as well as Drews and van den Bergh (2016) and Tomaselli et al. (2019), who similarly looked at this topic found that the majority of respondents were against growth at all costs. Tomaselli et al. (2019) specifically researched Canadian public opinion and found their respondents to hold strong environmental values. I therefore hypothesize:

H1: Respondents weigh the environment over the economy.

3.3.3.2 General support for degrowth policy proposals

Considering the above, I return to the debate about well-being and degrowth in Büchs & Koch's 2019 article, where they argue that the high levels of objective and subjective well-being that Western countries enjoy need to be maintained if degrowth is to gain support. As mentioned, the authors discuss the limited support for wealth and income caps and maintain that these proposals would be met with strong opposition from the wealthy. On the other hand, the concerns for unemployment, inequality and social conflict for the rapid societal change that degrowth would bring would likely lead to opposition from the poor. However, because Montréal is a part of Canada, a wealthy and industrialized Annex I country (see the UNFCCC's Parties & Observers,

2019), I speculate the majority of respondents will be more concerned with their wellbeing. While some may value the environment over the economy and support the idea of protecting the environment, it has been found that some people are unwilling to make material sacrifices in order to protect the environment (Ančić & Domaze, 2015). I therefore hypothesize:

H2: Respondents will have mixed support for degrowth policy proposals.

3.3.3.3 Effect of social rationality

Recalling the role of social collectivities in decision-making and the I&We paradigm discussed by Etzioni (1988), the insertion of the social rationality statements above was an attempt to facilitate a social rationality instead of an individualistic one within respondents when considering policy support. By doing this through follow up questions for respondents who do not support degrowth policies, I hypothesize:

H3: Respondents successfully reflecting through a social rationality shift their decision from not supporting the degrowth policy proposal to supporting it.

3.3.3.4 Determinants of opinions on degrowth policy proposals

3.3.3.4.1 Age

In order to assess potential statistical relationships between socio-demographics and support for degrowth policies, the following variables were included in the regression analysis and hypothesized to have an effect. Many researchers have found that environmental values to decline with age (e.g. Franzen & Meyer, 2010; Hawcroft & Milfont, 2010), potentially because of recent increases in environmental education, changing norms in concern for the environment (Whitmarsh, 2011). This shows that age should have a negative effect on policy support *through* environmental values. A separate argument postulates that younger people are less integrated in the dominant

social order, which is sometimes seen as threatened by environmental policies that require changing values and behavior, therefore it is logical for younger people to support environmental reform (Van Liere & Dunlap, 1980). This would mean age should have a negative effect on policy support, independent of environmental values. Other researchers have found age to either have a positive effect or mixed effects (e.g. Franzen & Vogl, 2013; Shen & Saijo, 2008; Wiernik et al., 2013, Xu & Li, 2018). One reason for this could be that younger people have been found to have more faith in technological advancement as the answer to environmental issues, and therefore feel no urgency to change (Benn, 2004). As the future of young people seems increasingly bleak, I hypothesize:

H4: Age has a negative effect on degrowth policy support.

3.3.3.4.2 Income

Income has been shown to have a positive effect on environmental values (e.g. Franzen & Meyer, 2010; Franzen & Vogl 2013; Shen & Saijo, 2008; Tomaselli et al., 2019), suggesting they are not independent of each other. One possible reason for this is discussed by Van Liere an Dunlap (1980), which draws on Maslow's (1970) hierarchy of needs, whereby upper and middle classes are able to achieve their basic needs and are therefore free to put their energy toward other issues, like concerning themselves with the state of the environment. Another interesting argument is made by Morrison et al. (1972) and discussed by Van Liere an Dunlap (1980) who state "the middle and upper classes are more likely to have experienced pleasant residential, work, and recreational environments, and consequently are more concerned about the deterioration of the physical environment". Effects of income on concern for the environment have also been mixed, negative or non-significant (Dunlap et al., 2000; Ejelöv & Nilsson, 2020, Xu & Li, 2018). One of the main arguments put forth here is that because the lower class is typically at the frontline of

poor environmental conditions, be it living and/or working in highly polluted areas, having access to poor recreational facilities (Buttel & Flinn, 1978), or suffering disproportionately from the adverse effects of climate change (Islam & Winkel, 2017), they are expected to be concerned with the environment. Moreover, when speaking on the environmentalism of the poor, Martinez-Alier (2014) states that "in the many resource extraction and waste disposal conflicts in history and today, the poor are often on the side of the preservation of nature against business firms and the state". The author adds that people will act when the environment is a source of livelihood, and wealthier people have in general lost their sense of the environment as such.

When hypothesizing the effect of income on each degrowth policy proposal included in this study, there are reasons to suspect the effect to be different for different policies. When considering a policy that would limit trade, individuals with higher incomes may not be affected by an increase prices of imported goods simply because they can afford it. However, Wall and Heslop (1986) found that Canadians with higher incomes were most negative about Canadian-made products versus the quality of imports, and "consumers with higher incomes demand higher quality goods with higher prices" when considering imported goods (Bekkers et al., 2012). Therefore, those with higher incomes may be against limiting trade.

When considering a policy that would implement a moratorium on new infrastructure (e.g. oil sand projects and affiliated pipelines, nuclear power plants, highways and dams), individuals with higher incomes, for example, could be financially invested in infrastructure projects (Cain, 2018), or could realize that the moratorium would lead to a decrease in consumption (Schneider, 2010), which they could be against. Lower income individuals could realize that the decrease in supply would mean and increase in price, leading them to not support the policy.

When considering a policy that would tax resource use, higher income individuals could react negatively because they have been found to consume more resources (e.g. Kalmykova et al., 2016). Lower income individuals should react negatively because they simply cannot afford an increase in price.

When considering a policy that would implement progressive taxation, or a redistribution of income from the rich to the poor, those with higher incomes should react negatively because it would mean a decrease in their income, while individuals with lower incomes should support the taxation because they would benefit financially (Hennighausen & Heinemann, 2014). In their study, Hennighausen and Heinemann (2014) found income to have a negative effect on support for progressive taxation.

The effects of income on support for a basic income, should be similar for the proposal for progressive taxation, as it too would mean a distribution of income from rich to poor (Raventós, 2007). It has already been found that income has a negative effect on support for a basic income (e.g. Parolin & Siöland, 2020).

Lastly, when considering a policy that would reduce working hours, those with higher incomes have been found to prefer a reduction in workload, likely due to a more secure standard of living, while the opposite is true for those with lower incomes who likely cannot afford a decrease in income (Stier & Lewin-Epstein, 2003). However, those motivated by a desire for high incomes want more hours (Reynolds, 2004), therefore even those with high incomes could be against this policy.

All this to say, income has an effect on policy support independent of its relationship with environmental values. Considering Montréal as part of an Annex I country and that degrowth

policies will more harshly impact those with higher incomes thereby theoretically negatively affecting their wellbeing, I hypothesize:

H5: Income has a negative effect on degrowth policy support.

3.3.3.4.3 Time used for travel/commuting

A 2018 study by the Communauté métropolitaine de Montréal showed that two thirds of Greater Montréal residents still commute by car. While commute distance, transport resources, residential context and economic status are the main predictors of commuting by car, if the effects of these variables are controlled in analysis, attitudes and willingness to act to protect the environment were found to increase likelihood of switching from car-use (Clark et al., 2016). Another study found willingness to avoid cars to be negatively influenced by age and education (Tobler et al., 2012). The authors suggest this could be due to lower mobility of elderly people, and qualified jobs often requiring more traveling to meetings or commuting, respectively. Moreover, car use has been linked to time saving, comfort and convenience (Kent, 2015). With these factors in mind, the time used for commuting variable I included in the survey could affect policy support differently. For instance, participants who spend a lot of time commuting should, in theory, be against taxing resource use, as this would increase their cost of travel, while the same participants could be in favor of reducing work hours as it could lead to a reduction in travel time and therefore cost. Therefore, I can only hypothesize that:

H6: Hours spent commuting/travelling has a mixed effect on degrowth policy support.

3.3.3.4.4 Time used for housework

In Rochette's (2016) gender-based analysis of climate policies in Canada and Québec, she found that "there is still a gendered division of labour in the household as women are still in

majority doing the grocery shopping, food preparation and household chores such as laundry and cleaning, childrearing and caregiving for the elderly" (Institute de la Statistique du Québec, 2013). Other researchers around the world have also come to similar conclusions about gender as a determinant for who is doing the housework (e.g. Bianchi & Milkie, 2010; D'Alisa & Cattaneo, 2013; Kuss & Neumarker, 2018; Sayer, 2005, 2016). Housework is considered unpaid work that generates a contribution to society and social well-being and is simultaneously placed in the 'leisure' category in economic contexts, as it is not associated with income generation (Kuss & Neumarker, 2018). While reinterpreting the usual work-leisure dichotomy into two stages, one between paid and unpaid time and another between unpaid work and leisure, Kuss and Neumarker (2018) created a revised economic model of labour supply to explore how a basic income would affect the time allocated to these activities. While acknowledging that gender-based time use choices are highly influenced by social norms and cultural values (Anxo et al., 2011), the authors show that with the introduction of a basic income, people would be able to invest more of their time to unpaid activities, be it unpaid work or leisure. On that note, D'Alisa and Cattaneo importantly state that "this part of [unpaid] work remains outside the market, but it is necessary to structure and maintain households, human relationships and communities and providing sustenance and care". Thus, the degrowth policy proposals I have included in this survey should, in theory, be affected by the amount of time one allocates to housework, because a degrowth transition would mean an increase in free time. However, when the policies are introduced separately, this variable may have a different effect on support, because time will be affected differently by each of them. More hours spent on housework should have a positive effect on support for basic income but may have a negative effect on support for limiting trade because limited access to products may increase the time needed to find them, or taxing resource use

because housework requires energy, for example. Those who spend more time on housework may be in favor of reducing work hours because it would mean more free time to spend on other necessary unpaid activities or leisure. With this in mind, I hypothesize:

H7: Hours spent doing housework has a mixed effect on degrowth policy support.

3.3.3.4.5 Environmental values

Environmental values have been found to have a positive effect on support for a degrowth oriented GDP growth rate (Drews & van den Bergh, 2016), and a positive effect on choosing the environment over the economy (Xu & Li, 2018), for example. Seeing as though degrowth embodies a quest for environmental (and social) sustainability, one can expect that:

H8: Environmental values have a positive effect on degrowth policy support.

3.3.3.5 Support for a degrowth transition in Canada

Lastly, respondents were asked whether they would support a degrowth transition in Canada, whether they already knew what degrowth was or they were supplied with a commonly used definition. To my knowledge, this has not yet been researched, therefore, based on the findings mentioned above, I hypothesize:

H9: Respondents do not support the idea of a degrowth transition in Canada.

3.3.3.6 Determinants of support for a degrowth transition in Canada

Based on the literature presented above, I expect the independent variables age, income, time used for traveling, time used for doing housework and environmental values, to have the same effects on support for a degrowth transition in Canada as they do on degrowth policy support.

3.3.4 Qualitative analysis

Each respondent that did not support the implementation of a degrowth policy proposal or a degrowth transition in Canada, with or without the inclusion of the social rationality statements, was given the opportunity to provide qualitative answers in an open-ended question. If they did not support the policy or transition, they were simply asked "why not?". These responses were then organized into categories I made, which I thought best summarized the feedback. An overview of the response categories is provided along with quotes in the section below and is explored in the Discussion and Conclusion section.

3.4 Results

3.4.1 Environmental values

Respondents appeared to hold strong environmental values by revealing a high degree of agreement on several themes (Table 3.4). Firstly, 81% of respondents reported that they are concerned about climate change (see item 1 in Table 3.4). Secondly, 86% agreed that a change in basic attitudes and values is necessary in order to solve environmental problems and 81% agreed that humans are presently interfering too much with the natural environment (see items 2 and 5 in Table 3.4), indicating the belief that change is needed to adequately address environmental issues. Third, only 32% agreed that technology can overcome any environmental problems, while 32% were neutral and 37% disagreed with the statement (see item 3 in Table 3.4), indicating mixed feelings but a general lack of faith in technology. Fourth, the majority of respondents (78%) agreed that natural resources should be used primarily to provide for basic needs rather than material wealth (see item 4 in Table 3.4) Lastly, a slight majority (64%) agreed that the highest priority

should be given to protecting the environment, even if it hurts the economy (see item 6 in Table 3.4). These findings support the hypothesis that respondents weigh the environment over the economy.

Table 3.4 Descriptive statistics for attitudinal statements

Item	% Distribution					Mean	SD
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree		
1. How concerned are you about climate change?[a]	21.8	3.4	14.0	43.1	37.7	4.11	0.89
2. A change in basic attitudes and values is necessary in order to solve environmental problems.	0.8	1.6	11.9	42.9	42.9	4.25	0.78
3. Technology can overcome any environmental problems.	7.5	29.1	31.9	24.2	7.3	2.94	1.06
4. Natural resources should be used primarily to provide for basic needs rather than material wealth.	1.0	5.7	21.6	43.6	28.1	3.91	0.9
5. Humans are presently interfering too much with the natural environment.	0.3	5.7	13.2	42.3	38.4	4.12	0.86
6. The highest priority should be given to protecting the environment, even if it hurts the economy.	2.3	9.1	24.9	40.5	23.1	3.72	0.99

[a] Scale coding for Item 1: Not at all concerned = 1, Somewhat unconcerned = 2, Neutral = 3, Somewhat concerned = 4, Extremely concerned = 5.

3.4.2 Support for degrowth policy proposals

The majority of respondents said they would support the implementation of degrowth policy proposals, with one exception of one policy (Table 3.5). Despite the large majority of respondents reporting strong environmental values, support for specific policies was considerably weaker. First, 209 respondents (54%) said they would support a policy that would limit trade distances and volume. Second, 242 (63%) said they would support a moratorium on new

infrastructure. Third, 146 (38%) said they would support the implementation of a tax on resource use. Fourth, 204 (53%) said they would support progressive taxation. Fifth, 242 (63%) said they would support a basic income. Lastly, 289 (75%) said they would support a reduction of work hours. These distributions can be visualized in Figure 3.3. These findings support hypothesis 2, that respondents have mixed support for degrowth policy proposals.

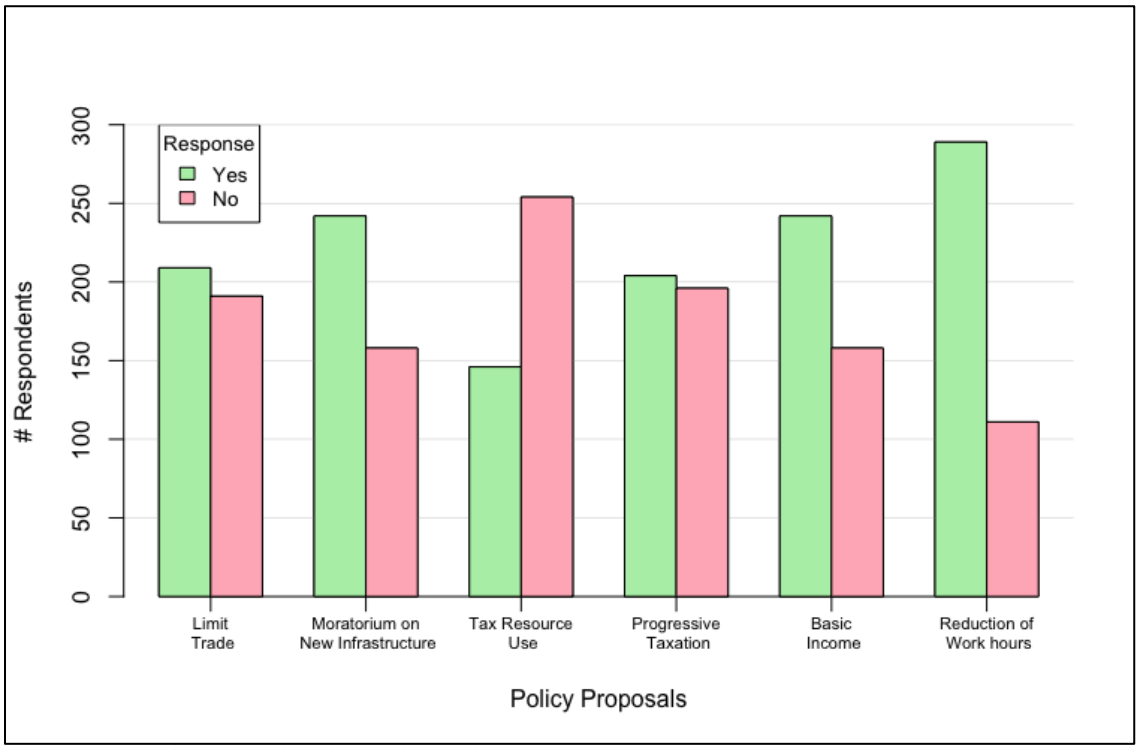

Figure 3.3 Respondent support for policy implementation (n=385)

Table 3.5 Summary of respondent support for degrowth policy proposals

		R^a	F	%	R^b	F	%	Valid %
1.Limit trade distances and volume	Valid:	1 Yes	209	54.3	1 Yes	56	14.5	31.8
		2 No	176	45.7	2 No	120	31.2	68.2
		Total:	385	100.0	Total:	176	45.7	100.0
	Missing:					209	54.3	
	Total:					385	100.0	
2. Moratorium on new infrastructure	Valid:	1 Yes	242	62.9	1 Yes	47	12.2	32.9
		2 No	143	37.1	2 No	96	24.9	67.1
		Total:	385	100.0	Total:	143	37.1	100.0
	Missing:					242	62.9	
	Total:					385	100.0	
3. Tax resource use	Valid:	1 Yes	146	37.9	1 Yes	50	13.0	20.9
		2 No	239	62.1	2 No	189	49.1	79.1
		Total:	385	100.0	Total:	239	62.1	100.0
	Missing:					146	37.9	
	Total:					385	100.0	
4. Progressive taxation	Valid:	1 Yes	204	53.0	N/A	N/A	N/A	N/A
		2 No	181	47.0				
		Total:	385	100.0				
5. Basic income	Valid:	1 Yes	242	62.9	1 Yes	28	7.3	19.6
		2 No	143	37.1	2 No	115	29.9	80.4
		Total:	385	100.0	Total:	143	37.1	100.0
	Missing:					242	62.9	
	Total:					385	100.0	
6. Reduction of work hours	Valid:	1 Yes	289	75.1	N/A	N/A	N/A	N/A
		2 No	96	24.9				
		Total:	385	100.0				

Notes: R = Response. F = Frequency. "Valid" signifies the active participants in a particular question.
[a] Base question (i.e. would you support the implantation of x policy)
[b] Follow-up question for those who answered 'No' to R^a (brings in social rationality and asks again)

3.4.3 Effects of social rationality

The effects of social rationality on respondent support for degrowth policy proposals are summarized in the R^b column of Table 3.5 and can be visualized in Figure 3.4. Of the 176 respondents who initially said they would not support a policy that limited trade distances and volume, 58 respondents changed their answer to 'Yes' after the incorporation of the social

rationality statement, marking a 15pp increase in total support for the policy. Of the 143 respondents who said they would not support a policy that would create a moratorium on new infrastructure, 47 respondents changed their answer, marking a 12pp increase in total support for the policy. Of the 239 respondents who said they would not support the implementation of a tax on resource use, 52 respondents changed their answer, increasing the total support for the policy by 13pp. Of the 143 respondents who said they would not support the implementation of a basic income, 28 respondents changed their answer, shifting the total support for the policy by 7pp. Interestingly, the shift for basic income is notably smaller than the shift for other policies. I suspect this is because basic income is the only policy of the 4 that would directly impact respondents' income.

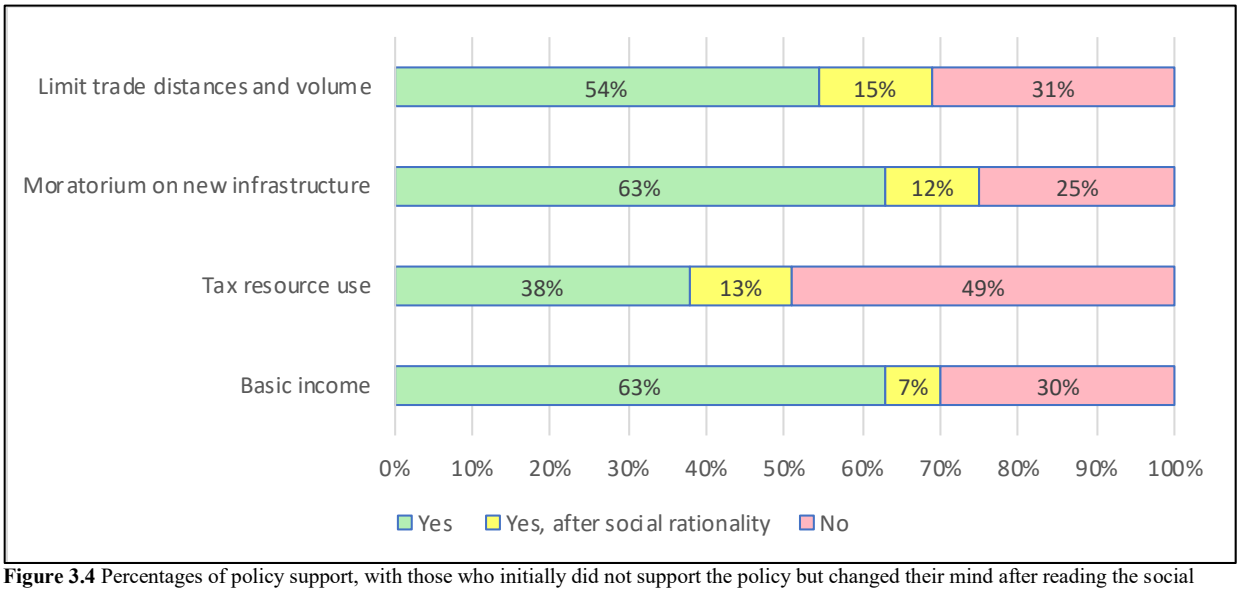

Figure 3.4 Percentages of policy support, with those who initially did not support the policy but changed their mind after reading the social rationality statements shown in yellow

I performed the Chi-squared Test of Independence to see if the shift in responses from before and after the incorporation of the social rationality statements was statistically significant. As seen in Table 3.6, the X^2 values for limiting trade, creating a moratorium on new infrastructure

and taxing resource use, are significant at the 1% level and significant at the 5% level for the basic income policy proposal.

Table 3.6 Chi-squared testing results for the effect of incorporating social rationality statements

	X^2
Limit trade distances and volume	16.60***
Create a moratorium on new infrastructure	12.83***
Tax resource use	12.63***
Create a basic income	4.249**

Note: * p < 0.1; ** p < 0.05; *** p < 0.01.

These findings support hypothesis 3, that after reading the social rationality statements, some respondents shift their decision from not supporting the degrowth policy proposal to supporting it. It is important to note that the social rationality statements could have been written differently, and thus have the potential to have even stronger effects. This could be an important finding for policy makers and politicians, as some individuals *can* be swayed to change their opinions on certain policy proposals when asked to reflect through a social rationality than an individual one.

3.4.4 Determinants of degrowth policy support

To assess the relationships between the independent and dependent variables, I conducted several logistic regression analyses in order to understand which individual characteristics might explain degrowth policy support (Table 3.7). The 6 models include the same set of independent variables. Each model was tested for multicollinearity using the variance inflation factor function in R and no multicollinearity was detected.

Each model indicates that respondents who are older are less likely to support the policy. With the exception of that for infrastructure moratoria, this effect is statistically significant; the non-significance of the age variable in the moratorium model is likely due to the small sample

size. This finding therefore supports hypothesis 4, that age has a negative effect on degrowth policy support. Respondents who have a higher income are less likely to support progressive taxation, a basic income and the reduction of work hours, at a statistically significant level. It should be noted that the income variable was nearing significance for the moratorium on new infrastructure model, indicating that respondents with higher incomes were less likely to support the policy. The income variable was also nearing significance for the tax resource use model, showing that respondents with higher incomes were more likely to support the policy. These findings therefore do not support hypothesis 5, that income has a negative effect on degrowth policy support. Time used for traveling and doing housework were not significant predictors in any model, therefore providing no evidence to support hypotheses 6 and 7, that these variables have a mixed effect on degrowth policy support. Each of the models indicates that respondents with higher environmental values are more likely to support the policy proposal, at a highly statistically significant level, providing evidence to support hypothesis 8, that environmental values have a positive effect on degrowth policy support.

Table 3.7 Logistic regression analyses of degrowth policy support

	Limit trade	Moratorium on new infrastructure	Tax resource use	Progressive taxation	Basic income	Reduction of work hours
Age	**- 0.0158***	-0.0102	**-0.0143***	**-0.0142***	**-0.0186****	**-0.0275*****
Income	0.0329	-0.1140	0.1015	**-0.1351****	**-0.2189*****	**-0.1322***
Hours travelling	0.0110	0.0056	0.0027	-0.0000	0.0251	0.0179
Hours housework	-0.0220	0.0195	-0.0242	0.0030	0.0176	0.0137
Environmental values	**1.5582*****	**2.0363*****	**1.0193*****	**0.6215*****	**0.7777*****	**0.5607*****
Psuedo-R^2	0.124	0.187	0.066	0.038	0.072	0.056

Notes: * p < 0.1; ** p < 0.05; *** p < 0.01.

The pseudo-R^2 values show that not a lot of variance is explained by the models above; the Limit trade model capturing 12.4% of variance, the Moratorium on new infrastructure model capturing 18.7%, the Tax resource use model capturing 6.6%, the Progressive taxation model capturing 3.8%, the Basic income model capturing 7.2%, and the Reduction of work hours model capturing 5.6%. According to Heeringa, West and Berglund (2017), studies involving human populations often find their best regression models to only explain 20%-40% of variance. The small sample size in this study is likely the cause for the low pseudo-R^2 values, however they are consistent with values found in similar studies (e.g. Ančić & Domazet, 2015; Drews & van den Bergh, 2016; Xu & Li, 2018).

3.4.5 Support for a degrowth transition in Canada

Table 3.8 summarizes respondent support for a degrowth transition in Canada. Overall, the majority of respondents (65%) said they would support a transition to degrowth in Canada (see items 2 and 3 in Table 3.8). Of the 385 respondents, 108 (or 28%) had heard of degrowth and understand what it entails, while 277 (79%) had not. Of the 108 respondents who had heard of degrowth, 64 (59%) said they would support a degrowth transition in Canada, while 44 (41%) said they would not. Of the 277 who had not heard of degrowth, 184 (66%) said they would support a degrowth transition after being supplied a definition, while 93 (34%) said they would not. See Figure 3.5 for a visual representation. These findings do not support

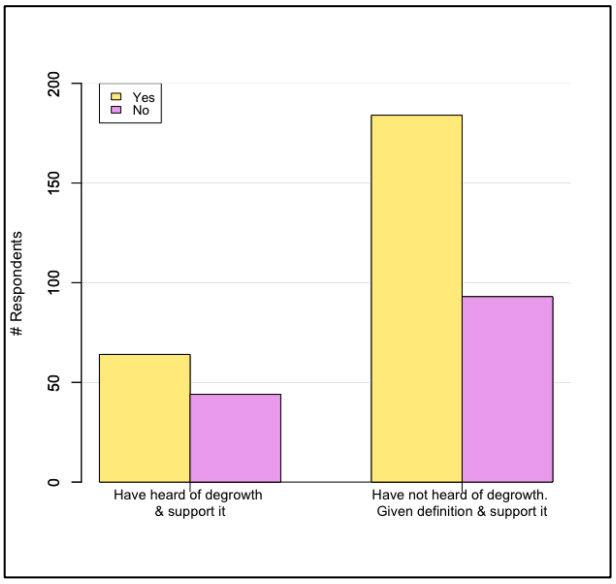

Figure 3.5 Respondent support for a transition to degrowth in Canada
(n = 108 & 277)

hypothesis 9, because the majority of respondents do support the idea of a degrowth transition in Canada.

Table 3.8 Summary of respondent support for a degrowth transition in Canada

		Response	Frequency	%	Valid %
1.Heard of and understand degrowth	Valid:	1 Yes	108	28.1	
		2 No	277	71.9	
		Total:	385	100.0	
	Missing:				
	Total:				
2. Heard of degrowth and would support a degrowth transition in Canada	Valid:	1 Yes	64	16.6	59.3
		2 No	44	11.4	40.7
		Total:	108	28.1	100.0
	Missing:		277	71.9	
	Total:		385	100.0	
3. Given a definition of degrowth and would support a degrowth transition in Canada	Valid:	1 Yes	184	47.8	66.4
		2 No	93	24.2	33.6
		Total:	277	71.9	100.0
	Missing:		108	28.1	
	Total:		385	100.0	

3.4.6 Determinants of support for a degrowth transition in Canada

Next, I looked at the effects of the independent variables on support for a degrowth transition in Canada (Table 3.9). Each model was tested for multicollinearity using the variance inflation factor function in R and no multicollinearity was detected.

Of the respondents who have already heard of and understand degrowth, those who spend more time travelling are more likely to support a degrowth transition in Canada. Of the respondents who had not heard of degrowth and were provided a definition, the model shows that those who are older are less likely to support a degrowth transition in Canada. It should also be noted that the

income variable was nearing significance in the second model, indicating that those with higher incomes are also less likely to support a transition. Both models indicate that respondents who hold stronger environmental values are more likely to support a degrowth transition in Canada.

Table 3.9 Logistic regression analyses of support for a degrowth transition in Canada

	Had heard of & support degrowth	Had not heard of degrowth; definition provided & support degrowth
Age	-0.0039	**-0.0290*** **
Income	-0.0847	-0.1368
Hours travelling	**0.0905***	-0.0247
Hours housework	0.0122	0.0251
Environmental values	**1.0566*** **	**0.9905*** **
Pseudo-R^2	0.084	0.090

Notes: *p < 0.1; ** p < 0.05; *** p < 0.01.

3.4.7 Respondent reasoning for not supporting degrowth policy proposals

Respondents who said they would not support the degrowth policy proposals discussed above were given an open-ended question asking why they would not support them. Based on these responses, I formulated general categories to summarize the findings. This section therefore introduces some of the main barriers to implementing degrowth policies.

3.4.7.1 Limit trade distances and volume

Of the 120 respondents (31.2% of all respondents) who did not support limiting trade distances and volume, the most frequently given reason for opposing the policy was about needing or wanting access to foreign products. For example, one person said: “Il y a des domaines économiques où le Canada doit importer pour subvenir à ses besoins”, meaning there are certain

domains that necessitate imported products. It seems as though there is fear behind this policy proposal, that international trade would be completely cut off, which would not be the case. Next, some respondents thought the policy would not do anything to help climate change/environmental issues. One person said: "I think there must be another more creative way to combat the issue. And Canada is not a major polluter on the world scale". Gifford (2011) describes spatial discounting of environmental issues as a barrier to climate action, where "individuals believe that environmental conditions are worse in places other than their own". It should be noted that Canada is ranked 11th in top emitting regions (Government of Canada, 2016). On the other hand, one person thought the policy could aid in reducing Canadian emissions, but it would not likely address environmental issues overall, stating "Cutting foreign trade might reduce our carbon emissions, but there is no promise it will reduce anyone else's". This kind of mentality is very present in the literature, where perceived inequity is used as justification for nonaction (e.g. Gifford, 2011). Interestingly, one respondent stated:

> "La contribution du transport international aux GES ne me semble pas si importante par rapport à la consommation d'énergie des ménages et entreprises, trafic routier, etc. Il faut mettre l'accent sur un remplacement des technologies actuelles(utilisant GES) par des technologies vertes(solaire, éolien, stockage, etc.) plutôt que la diminution des activités qui les utilisent."

Translated, this respondent believes that emissions from energy consumption in households and businesses, and road traffic are larger contributors to emissions, and that focus should be made on replacing current technologies with green technologies, as opposed to reducing the actual activity. This is consistent with green growth theory, which has been challenged by many as an effective route to combating environmental issues (e.g. Antal & van den Bergh, 2014; Jackson, 2009; Kallis,

2018). Another reason given for not supporting the policy was that limiting trade would hurt the economy; one person stated: “Very bad for economy even products manufactured in Canada need imported raw materials”. More generally, respondents repeatedly stated things like “the economy is essential (translated)”, “Economy impact, maintain competition”, “Fair trade is important”. One person said: “I think the world economy and world peace depends on strong trade relationships that benefit both parties equally”. Another said “Economy in my lifetime trumps over climate for the future generation”, all in all indicating that many are concerned with Canada maintaining economic integrity. A handful of respondents said they would be against the increase in product prices brought by limiting trade, indicating that income is a barrier to supporting this policy. Generally, the remaining respondents did not have a reason for opposing the policy, did not understand the question, or simply did not think it was necessary.

3.4.7.2 Create a moratorium on new infrastructure

Of the 96 (24.9%) respondents who said they would not support the implementation of a moratorium on new infrastructure, the most frequent response was, in one way or another, that we need fossil fuels and new infrastructure, and that we should exploit the resources we have in Canada. One person said “at the time being the world needs oil, until someone comes up with a better alternative”. One person thought that without exploiting our resources, we would succumb to an archaic way of life, stating “vaut mieux exploiter une richesse naturel que de respecter un mode de vie a[r]chaique”. Many people were also concerned that policy would have a negative impact on the economy and Canadian lives, with statements such as “can’t sacrifice economy” and “things that would improve the lives of Canadians should not be held back by politics”, indicating that some simply favor economic progress over environmental stability. A few respondents believe the policy would not change anything, saying things like “Cela ne servirait à rien”, or it would

serve no purpose; “I am not sure about the benefits”; “no need”; and “would not solve the problem”, indicating that some respondents do not understand the social and environmental impacts that new infrastructure brings. Several respondents said they did not know why they were against the policy. 2 respondents believe that technology will have to be the solution, stating for example “because the world is getting more populated. It's up to technology to have us pollute less”. Several respondents did not understand the question, for example stating things like “it is destroying wildlife”; “it is not environmentally friendly”; and “Because it destroys environment and kills all types of animals”. Many responses were put into an ‘other’ category, mainly including nonsensical answers, those with no interest or no comment, and a select few with interesting responses that could not be put into the above categories. One example is “La terre est foutue, nous ne pouvons rien y faire”, meaning the Earth is done for and there is nothing we can do, indicating the belief that it will be impossible to reverse anthropogenic impacts on the planet. One person said “The Indiginous peoples were already paid billions in the past so enough is enough”, referring to my social rationality statement explaining that oil sands and pipelines often violate Indigenous rights. It is interesting that this was the one factor that deterred the respondent from supporting the policy, perhaps because the respondent simply does not care about the impacts new infrastructure has on others.

3.4.7.3 Tax resource use

Of the 189 (49.1%) respondents who said they would not support the implementation of a tax on resource use, the majority said it was due to financial reasons like they are already taxed heavily in Québec and Canada and pay too much, for example, stating “in Quebec we already pay a lot of taxes, income tax and sales tax is the highest in Canada. They should be taxing the companies who have more money not the consumers. Lower income families will be highly

affected by this tax". Additionally, many said they would not be able to afford the increase. One person simply said "I am not a rich person", and another said "I feel like we are already being taxed plenty and adding such other taxes would create a lot of unrest amongst the lower and middle economic classes". Several respondents said that the government or large energy companies should be the ones to pay for example, one person saying "Governments should provide and implement changes at their cost. Not on the citizens", and another saying "It is not to us to pay in taxes. Those taxes should come from those who don't pay enough taxes like the banks and the big companies". Several respondents also thought the policy was unnecessary or not a solution, by simply stating "I don't think it's necessary" or "Taxing stuff is too simplistic a solution". Some thought that because hydroelectricity is a primary energy source in Québec, there should not be a tax. For example: "Being from Quebec our electricity comes from renewable hydro and wind sources these two do not overly contribute to greenhouse gases in their use" and "Where I live electricity is a renewable source by water and therefore very environmentally friendly compared to nuclear plants or gas". A few respondents said resource use is a necessity; stating things like "It's part of life and would add to household expenses", "these provide basic survival, and the poor already can't afford it", and "Pourquoi ajouter des taxes a des source essential", meaning why add taxes to essential resources. A handful believed the tax money would not be used properly by the government, by writing "I don't believe this is a solution but more money grab by the government" and "government wastes enough of our money. It would not go towards the stated goals". Others did not understand the question, did not have any reasoning, thought it would be too complicated, and that renewable energy should be developed instead.

3.4.7.4 Progressive taxation

Of the 181 (47.0%) respondents who said they would not support the implementation of progressive taxation, the most frequent response was that people earn their money and it should not be taken away and high wages create competition and motivation. For example, one respondent wrote “C’est injuste pour ceux qui travaillent plus que d’autres / qui ont fait de plus longues student et donc méritent un salaire plus élevé”, meaning it is unfair for those who work harder than others and who went to school, as they deserve higher incomes. The second most frequent answer was that they are already taxed enough. Several said the money would not be used properly by the government, by saying things like “Because it would never go where it should” and “Don’t trust elected representatives. Enough corruption is already around”. Several said that this resembled communism and they did not want that. One response read “parce que je ne veux pas me retrouver dans une forme de gouvernement socialiste voire communiste”, meaning the respondent did not want to be under a socialist or communist government. Several said that people would leave and go somewhere they are not taxed, for example: “goodbye to people trying to better themselves by working hard and trying to succeed in life. Socialism would destroy our wonderful country”. Several simply thought that 100% taxation was too much. A few thought it was unrealistic or it would be too difficult to put in place. Many did not understand the question and/or the concept and wanted more information, for example: “I would need more information, this sounds strange. While on paper it sounds ok, in reality not so much”, and many simply did not like the idea.

3.4.7.5 Basic income

Of the 115 (29.9%) respondents who said they would not support the implementation of a basic income, the most frequent response was revolving around ideas that people who work harder deserve more money, people should be able to keep the money they earn, and basic income would

encourage laziness. Examples include “[Education] and hard work are to pay off and not support the lazy”; “A chacun son argent”, meaning to each his own money; and “Chacun doit travailler rien de gratuit dans la vie”, meaning everyone has to work in life because nothing is free. Many said this resembled communism or Marxism and they were against that, that it would not be possible to implement, that inequality has and will always exist, or that people would abuse the system. A few said there is already help in place for the poor, or that the government should be responsible, for example: “let social welfare and other government programs take care of poverty. That's what our taxes are for”. Several respondents provided nonsensical answers, did not understand the question and/or concept, or were simply against the idea.

3.4.7.6 Reduce work hours

Of the 96 (24.9%) respondents who said they would not support the implementation of a policy that would reduce work hours, the most frequent response was that they could not afford a decrease in income or that they wanted to work more to earn more. One person said “Evidemment j'aime l'idée de travailler moins mais pas de réduire mon salaire”, meaning they like the idea of working less but not reducing their income. Someone else similarly said “More leisure time does not benefit me if I am making less money. Several respondents thought it would destabilize the economy; one saying “L'econnomie ne peut pas avancer si les personnes ne travaillent pas”, meaning the economy cannot move forward if people are not working, and another saying “The country would not benefit from less hours”. Several said that people should be able to choose whether or not to work less, for example: “I believe people should be able to choose the amount of hours they wish to work, especially if they are paid by the hour”. Several respondents thought that a 5-day work week is normal, and that people are fully capable of doing this, one person saying, “Because the current work day of five days a week is sufficient, productive, and leaves

space for rest on the weekends of two days". Others thought the policy proposal was not realistic, had no interest in it, no reason for opposing it, or did not understand the purpose and/or concept.

3.4.7.7 Summary

The most common reasons given by respondents for opposing these degrowth policy proposals was that some of these policies would have negative impacts on the economy, would negatively affect their personal economic situations (i.e. income, economic stability), would be unfair, or would not solve social and environmental issues. Less commonly used responses included distrust in the government, anti-communistic ideals, that the government should be responsible for handling and paying for the issues associated with the policies, and that the policies are unrealistic and would be very hard to implement. More specific to Québec, many respondents were opposed to some of these policies because of the current high tax rate in the province and because the primary energy source in the province is hydroelectricity, a "renewable" resource that can be sustainably used. These responses to the open-ended questions provide important insight as to the barriers to garnering support for degrowth policies in Canada. These results can be used by degrowth advocates to tailor communications strategies specifically to help assuage people's concerns about the potential negative impacts of degrowth economies for example.

3.4.8 Respondent reasoning for not supporting a degrowth transition in Canada

Respondents were given an open-ended question asking why they would not support the implementation of a degrowth transition in Canada. Of the 44 respondents (11.4% of total) who had heard of and understand degrowth and said they would not support a transition, the most frequently used reason was because they thought it would hurt the economy, it would lower the

quality of life or that economic growth is a good thing. One person said “Parce que c'est pas favorable à l'économie du pays”, meaning it would not be favorable for the country’s economy. Several respondents were simply against it, saying it was unnecessary or they were not interested. Others said they did not know why they would not support the transition, they thought it was utopic, they were against socialism, or admitted they did not fully understand what degrowth was.

Of the 93 respondents (24.2% of total) who were supplied a definition of degrowth and said they would not support a transition; the most frequent response was without explanation and that they were simply against it. The next most frequent answer was centered how it would hurt the economy, that economic growth is necessary and good, that it would lower the quality of life and that they were against government control/communism. Responses included, “Because I do not think that we need to sacrifice our economic system to protect the environment”; “would kill the economy”; “Because my parents lived through communism and this definition resembles it. I believe that people should be allowed to reach individual potentials without governmental restrictions”; and “I think that sounds anti-capitalist and capitalism has done well for us in creating prosperity”. Many said it is too complicated and it would be impossible to implement, saying things like “wishful thinking”; “won’t work”; “nice in theory, but hardly applicable”; and “parce que c'est trop de changement. c'est vraiment utopique et ca fait joli sur le papier mais n'est pas réalisable dans la vrai vie”, meaning it would be too much of a change, that it is very utopic, and that it is nice on paper but not applicable in real life. Several respondents did not understand the concept and/or definition, shown through responses like: “complicated to understand”; “Sorry, but I didn't really understand your definition - it's too lengthy for me to comprehend”; “I do not really understand the principle and I do not think that the population is ready to make these changes at this time”; and “Je ne comprend pas trop ce quoi cela impliquerait même en ayant lu ce texte.. Il

faudrait que j'en sache plus à ce sujet, mais je n'ai pas entendu parler de ça", meaning they did not understand the implications of degrowth by reading the definition, that they would need to know more on the subject, and that they had never heard of it before. Several respondents simply said they were unsure why they would not support the transition.

To summarize, in both groups, many people were concerned about the negative implications degrowth would have on the economy, many thought a degrowth transition is unrealistic and not applicable, many were simply against the idea, not providing more detail, and several respondents did not fully understand what the transition would entail.

3.5 Discussion and conclusion

This study is aimed at capturing an overview of people's support for degrowth policy proposals and support for a degrowth transition. Support for degrowth could be seen as an environmental value in itself, as degrowth is by definition, a pursuit of sustainability (both social and environmental). By asking respondents about their environmental values prior to their support for degrowth, I was able to capture a sense of their pre-existing attitudes. As expected, respondents displayed strong environmental values as summarized in Table 3.5. This finding is in line with the study by Tomaselli et al. (2019) with similar results, finding Canadians to hold strong environmental values. As mentioned, some research has shown that people are unlikely to make personal material sacrifice in order to protect the environment, and that pro-environmental behavior is focused more on low-impact actions for reducing emissions (Ančić & Domazet, 2015). This could be the reason for the mixed support for degrowth policy proposals: after the inclusion of the social rationality statements, the majority of respondents support limiting trade distances and volume (69% yes), creating a moratorium on new infrastructure (75%), creating a basic income

(70%), and reducing work hours (75%), while support for taxing resource use (51%) and implementing a progressive taxation system (53%) is lower.

As there are no studies looking at public opinions on policies that would limit trade, I can only discuss the reasoning behind not supporting the policy given by respondents in this study. If a policy was put in place that would limit trade distances and volume, people would lose access to certain products or the prices of those products would increase. People are accustomed to having relatively easy access to the things they want and the idea of losing this privilege deterred some respondents from supporting the policy. Other reasons for not supporting the policy included the opinion that it would not solve environmental issues or that it would hurt the economy. This could be because of the way I explained the possible implications of the policy in the questionnaire, in that it did not clearly outline the positive effects it would have on the environment. Interestingly, of those who responded with concern for the economy, they reported being more in agreeance with prioritizing the environment over the economy in the environmental values module (mean value of 3.8 where 5 = strongly agree). This could indicate that people are more willing to live sustainable lifestyles in theory than in practice. Concern for negative impacts on the economy indicates that some respondents simply care more for the integrity of the province's/country's economy than for the environment, signifying a noteworthy barrier for the advancement of degrowth. Aside from these reasons, 54% said they would support the policy, indicating that they likely understand the environmental and economic implications that would come from continuing to trade as usual.

There is also no existing public opinion literature on the policy proposal of banning new infrastructure. A moratorium on new infrastructure like oil sand projects and affiliated pipelines would only slightly impact people's lifestyles in that there would be less of that resource at some point. As such, it could be that the 75% of respondents who said they would support the policy

most likely weighed the benefits for the environment over the minor impacts the policy would have on their lives. The rest of the sample generally believes that fossil fuels and new infrastructure are completely necessary, that the policy would have a negative impact on the economy, or that it would not solve environmental issues. The opinion that new infrastructure is necessary could indicate the idea that fossil fuels are not harmful, or that there are no possible alternatives. Again, there are some who are simply more concerned with the economy than the environment. However, respondents concerned with the effects of this policy on the economy similarly said they prioritized the environment over the economy in Module 1 (average 3.7 where 5 = strongly agree). This shows a disparity between self-reported environmental values and policy support.

Support for creating a basic income was quite high, at 70% approval, likely demonstrating high concerns for justice, poverty and inequality as discussed by Raventós (2007). This high degree of support could also indicate that respondents do not fully understand the implications of a basic income. The respondents who did not support the policy proposal were mainly concerned with fairness, arguing that people should be able to keep the money they earn; laziness and lack of motivation in others; and the policy's resemblance to communism. Apprehensions about a declining work ethic and deservingness of the income have been previously found (e.g. Roosma & Van Oorschot, 2020; Van Oorschot, 1998), however the point of a basic income is to benefit all individuals, even those "undeserving". With more research, a basic income could prove to be a favorable policy in Montréal, Québec, or even Canada.

The proposal for a reduction of work hours was highly supported, with 75% of respondents saying they would back the policy. These respondents are likely in comfortable economic situations, being able to afford a decrease in income in favor of more free time, and/or could have too big of a workload, as discussed by Stier and Lewin-Epstein (2003). The respondents who were

against the policy were reportedly unable to afford a decrease in income, were concerned that it would have negative impacts on the economy or were content with their current workload and weekly work hours. The inability to afford a decrease in income from working time reduction was also found by Stier and Lewin-Epstein (2003). Several said that people should be given the option to reduce their workload, rather than it being mandatory. With the majority of respondents saying they would support a reduction in work hours, it would likely be a favorable policy to introduce in Montréal, even more so if it were optional.

As for taxing resource use, only 51% of respondents supported this policy proposal. The portion in favor of the policy likely understand the implications of resource use on the environment. The portion against the policy, however, can largely be explained by its geographical context. Québec residents pay comparatively higher taxes (income, consumption) than the other provinces in Canada (Government of Canada, 2020; Revenu Québec, 2020). While both the province and country are taxed at lower rates than other (mostly European) countries (OECD, 2019), inter-provincial comparison is presumably where Québec residents foster their frustration with tax rates. Accordingly, of the 49% of respondents who were against this policy, a large portion said this was due to financial reasons, such as being heavily taxed in Québec and not being able to afford another tax. Additionally, as Québec's electricity is mostly generated using ("renewable") hydroelectricity (Canada Energy Regulator, 2020), several respondents felt there was no need to be concerned with the province's energy use. Other respondents said governments or large corporations should be the ones to take a financial hit, arguing that they do not pay enough taxes. This is reflective of Bernauer and McGrath's (2016) finding that many prefer to be uninvolved actors in climate policy and rather be disengaged in mitigating emissions. Some respondents said that the money would not be used properly by the government, importantly signaling distrust in

the government, an issue that has similarly been found amongst Canadians by the Angus Reid Institute (2019). Taxing resource use does not seem to be a favorable place to start for politicians in Montréal or Québec.

Progressive taxation was also not popular among respondents, with only 53% favoring the policy. Similar to those who supported the implementation of a basic income, it could be that this portion of respondents had concerns for justice, poverty and inequality. The definition of progressive taxation given to respondents did not include the environmental implications of higher incomes, therefore it is unlikely that many respondents made the association. Of the respondents who were against the policy, the main reasons had to do with fairness, whereby people should get to keep the money they earn; already being taxed heavily; distrust in the government; and the policy being too communistic/socialistic. Hennighausen and Heinemann (2014) similarly found that support was based on fairness perceptions and beliefs in the role of effort for economic success. This speaks to the role of framing progressive taxation in an equitable way. Several respondents were against the policy because they thought a 100% tax was too much. This response is likely due to the wording and framing of the definition of progressive taxation. Had it been written differently, it may have not deterred the respondents who gave this answer – as previously mentioned, Reimers (2009) found that support for progressive taxation was affected by the way the scenario was framed. I suspect the responses to this question were highly affected by the way it was written, and therefore may not truly reflect opinions.

Support for each policy except the moratorium on new infrastructure is likely to be higher among younger individuals. The lack of statistical significance here is likely due to the small sample size. These findings were expected, as younger people are more likely to support environmental reform due to being less integrated in the dominant social order (Van Liere &

Dunlap, 1980). Support for progressive taxation, basic income and a reduction of work hours is likely to be higher among individuals with lower incomes. Again, noting that the income variables were nearing significance for the moratorium and tax resource use models, the lack of significance is again likely due to the sample size. In regard to the significant findings, the negative effect of income was expected, as degrowth policies would impact individuals with higher incomes more harshly. For progressive taxation and basic income, those with higher incomes were likely against the policies because they would lead to a decrease in income. Buch-Hansen and Koch (2019) suggest it may be because the proposals are not fully defined yet and therefore are hard to envision and implement. The negative effect of income on supporting progressive taxation (Hennighausen & Heinemann, 2014) and basic income (Parolin & Siöland, 2020) has already been found. As for a reduction of working hours, it is likely that individuals with higher incomes are against this policy because they are accustomed to their lifestyle and are motivated by the desire for higher incomes brought by working more (Reynolds, 2004).

Surprisingly, time spent traveling and time spent doing housework were not significant variables in any model. Notably, these variables have not been used in other studies, therefore I can only speculate as to why they had no effect. I expected mixed effects from both variables on policy support. Two thirds portion of Greater Montréal residents still commute by car (Communauté Métropolitaine de Montréal, 2018), likely due to time saving, comfort and convenience (Kent, 2015). Those traveling a lot would be negatively impacted by a ban on new infrastructure and a tax on resource use, evidently leaving to an increase in prices on petrol and energy use, and travel cost. There could be negative impacts associated with progressive taxation and basic income, as a reduction in income would lead to a smaller travel budget. Those traveling a lot could be positively impacted by a reduction in work hours, if it meant traveling to work one

less day a week. As for time used for housework, a gendered variable where women still do the majority of housework (e.g. Rochette, 2016), I was expecting mixed effects as well. Specifically, I was expecting a positive effect on support for basic income, because people would be able to invest more of their time to unpaid activities, be it unpaid work or leisure (Anxo et al., 2011). It is possible that the sample size was too small to capture the effect of these variables, or that they simply do not have an effect at all.

Support for each policy is likely to be higher among those with higher environmental values. These findings were expected, as environmental values have been found to have a positive effect on choosing the environment over the economy (e.g. Xu & Li, 2018). This indicates that individuals with higher environmental values are more willing to make sacrifices for the environment and are more concerned with justice and equality.

The relative increases in policy support brought by reading social rationality statements is important to explore. By informing respondents of the implications of certain anthropogenic activities on other beings and on the environment, some were successfully able to consider these implications, rather than solely reflect on how they would be affected as individuals. After reading the social rationality statements for the policy proposals of limiting trade, banning new infrastructure, taxing resource use, and creating a basic income, there was a 15pp, 12pp, 13pp, and 7pp increase in policy support, respectively. Instead of being concerned with, say, their finances or the economy, it is probable that these respondents recognized that there are bigger issues at hand such as environmental degradation, poverty and inequality. Recall Etzioni's (1988) description of the role of individuals in neoclassical economics, where individuals are assumed to be decision makers independent of societal factors, versus his proposed I&We paradigm, where individuals are able to act rationally on their own but this ability can be highly affected by a community or

group which they are a part of. Individuals can rationalize as themselves or as part of a community. The aim of the social rationality statements included in this study was to examine whether or not the reflection as part of a community/group would have participants initially against a policy change their minds. While this is only a small section of this thesis, it brings forth valuable information. It is possible to change people's opinions by providing information and having them consider how their decisions may affect others.

In addition to exploring public opinions on degrowth policy proposals, a few questions were included to garner information on opinions about a degrowth transition in Canada. Notably, only 28% of respondents reportedly had heard of and understand what degrowth entails. This speaks to the lack of traction degrowth has had outside of academia and activism (see Weiss & Cattaneo, 2017). Of this portion, 59% said they would be in favor of a degrowth transition, indicating that many people see the value in sustainable societies, which could be achieved by monumental lifestyle changes and downscaling of the economy. Of the portion who did not support the idea of a degrowth transition, the main reported concerns were about negative impacts to the economy, lowered quality of life, that it was utopic, while many respondents provided no reasoning. Those who had never heard of degrowth (72%) were supplied a commonly used definition and asked whether they would support a transition. Of this portion, 66% said they would be in favor. Those who were against the idea were similarly concerned with negative impacts to the economy, lowered quality of life, and believing it would be impossible to implement, as well as government control. Many respondents were simply against the idea and supplied no reasoning. It would therefore be of great value to put forth concrete strategies for a degrowth transition that delineate how these concerns would be addressed when inquiring about public opinions.

Interestingly, individuals who spend more time traveling are more likely to support a degrowth transition, among those who have already heard of degrowth. One can expect that an increase in amount of time travelling indicates an increase in time working, be it paid or unpaid (e.g. housework, household errands). This finding could illustrate that people would appreciate the decrease in necessary travel brought by degrowth, through a reduction of work hours, incentives for local production and consumption, or the promotion of decreases in consumption patterns. As for those who were supplied with a definition of degrowth, the likelihood of support for a degrowth transition decreased with age. This ties in with the argument that older people are more integrated in the dominant social order (Van Liere & Dunlap, 1980), leading them to be unsupportive of a paradigm that would potentially threaten it. As expected, individuals with higher environmental values are more likely to support a degrowth transition, whether they have heard of it or not. Considering that degrowth stands for environmental sustainability (among other things), it is natural that those who care for the environment want to make changes in order to protect it.

Concerns with economic impacts and lowered quality of life through degrowth clearly speak to the perceived ties between economic growth and wellbeing (see Büchs & Koch, 2019). Many people have been made to believe that economic growth is indisputably positive and are therefore against anything that poses a threat to it and their lifestyles. The political and economic challenges a degrowth transition would face are immense and they have received a lot of attention in the literature. Really, the transition does seem utopic as long as it is only being fought for by a minority of people. Degrowth will only be possible as a completely democratic process (e.g. Buch-Hansen, 2018, Cattaneo et al., 2012).

Several limitations can be identified in this study. The small sample size was due to both budgetary and timescale constraints. Moreover, the findings presented are not representative of the

Montréal population due to Dynata's nonprobability opt-in panel that inherently excludes people who are not using the internet, making the sample non-random. Further, the limited number of survey questions aimed at capturing environmental values was also restricted by budget limitations, therefore potentially not adequately reflecting the full scope of respondents' environmental values. A rather important limitation to this study design is the online survey's limited ability to capture the collective rationality of the respondents. A more appropriate methodology for this portion of the study would have been conducting a focus group, whereby deliberation and collective processes could have facilitated a social rationality. A focus group, being a group interview in which interviews can speak to and interact with one another, allows participants to probe one another's reasons for holding a particular view, which can sometimes lead to them qualifying or modifying their response (Bryman & Bell, 2016). A focus group setting would have allowed respondents to discuss each of their positions within the social system and allow others to understand possible implications of a policy that they had not thought of themselves. As individuals with different cultural and socioeconomic backgrounds would be affected differently by each policy, a focus group would be ideal for facilitating a shift from an individual rationality to a social one. Further, the definitions used to explain policy proposals could certainly act as limitations, as responses would most likely vary if they were explained differently. For example, the use of the word "moratorium" may have confused people who did not fully understand what it meant, as several respondents misunderstood the question/definition. Instead, I could have introduced the policy as a "ban on new infrastructure". Likewise, the inclusion of the possibility of being taxed 100% in a progressive taxation scheme seemed to deter several respondents from supporting the policy. The 100% taxation scenario could have been more clearly defined to include incomes only above a certain (extremely high) amount. Several respondents

were also confused by this definition. Similarly, different wording used for the social rationality statements may have led to more respondents changing their opinions on a policy. The definition used for degrowth also caused some confusion among participants. Overall, definitions could have been made simpler and clearer.

Future research on this topic should try to overcome these limitations to the extent possible, as wording and framing has been found to be important in public opinion surveys on policy support (Reimers, 2009). This area of research would benefit from further studies with larger samples covering a larger geographic area, assessments of public opinions on additional degrowth policy proposals, and an in-depth investigation on whether the public, as a whole, is interested in degrowth. Researchers specifically interested in the effects of social rationality on public opinion should conduct qualitative research using methods like focus groups, to allow for deliberation between participants, as well as interviews to gather more in-depth information on public opinions. Further exploration of public concerns about degrowth policies and reasoning for not supporting them would bring forth valuable information for policymakers.

In conclusion, this study found that there exists public support for degrowth and degrowth policies in Montréal, demonstrating that many people care about social justice and the environment. Concerns about fairness, trust and negative impacts on the economy need to be addressed in order to garner further support. In Québec specifically it should be noted that any form of taxation policies would likely not receive much support due to current provincial tax rates. While some believe degrowth to be unrealistic, establishing concrete strategies for its implementation that address public concerns could prove degrowth to be a promising avenue for achieving social-environmental sustainability.

CHAPTER 4
CONCLUSIONS

As we approach (and will likely exceed) global temperature targets that were set in the 2015 Paris Agreement due to inadequate efforts to mitigate climate change (United Nations, 2018), countless people continue to live in unfavorable conditions that are likely to worsen as the environment deteriorates (IPCC, 2018). Scientists have warned for many years that anthropogenic activity is harming the environment and that economic growth is not sustainable (e.g. Carson, 1962; Daly, 1991, 1996; Georgescu-Roegen, 1971, 1975; Hirsch, 1976; Meadows et al., 1972). Degrowth, a suggested alternative paradigm to capitalism, has been brought forth as a potential pathway to environmental and social sustainability. By reducing the environmental impact of human activities, redistributing income and wealth both within and between countries, and promoting a transition from a materialistic to a convivial and participatory society (Cosme et al., 2017), degrowth could be an ideal solution to the world's current state of emergency. The political and economic feasibility of a degrowth transition has been well addressed and challenged in academic literature (e.g. Büchs & Koch, 2019; Tokic, 2012; van den Bergh, 2011), however this study is interested in social and cultural feasibility. Democratic agreement is fundamental for degrowth to take place (Kallis, 2018), therefore public opinion studies on the topic are crucial for understanding both the more favorable aspects and the social barriers of the movement. Specifically, in representative democracies, public opinion is a driver of policymaking in that the public elects those who will reflect what it wants policy-wise (Wlezien & Soroka, 2016), and the

feasibility of policy implementation is dependent on societal attitudes and the willingness to accept change (Drews et al., 2018).

In this study, I explored policy support for 6 degrowth proposals: limiting trade distances and volume, creating a moratorium on new infrastructure, taxing resource use, progressive taxation, creating a basic income, and reducing work hours. I looked at socio-demographic determinants of policy support, the effects of social rationality, support for a degrowth transition in Canada, and socio-demographic determinants of support for the transition. I found that the majority of respondents supported 4 out of 6 policy proposals, with a minority support for taxing resource use and progressive taxation. This finding demonstrates that many people care about social justice and the state of the environment, and would likely support policies that address such issues.

The main reasons provided for not supporting the policies included personal financial concerns, the fear that they would negatively impact the economy, concerns with fairness, distrust in the government, that they are unrealistic to implement, or that they are simply not necessary. As the majority of electricity in Québec is generated through hydropower, many respondents seemed content with its sustainability. Importantly, Québec is highly taxed compared to the other Canadian provinces, therefore respondents felt more strongly against the ideas of increased taxation, both for income and resource use. Taxation policies will likely not garner much support in Montréal and should therefore be avoided until necessary. Moreover, the framing of policy proposals has proven to be very important. Proposals should ensure that issues of fairness and trust be addressed, specifically income related policies, because those with higher incomes are less likely to support progressive taxation schemes and a basic income due to these concerns. Policy proposals should

also include detailed explanations of potential effects to the economy, as well as plans to manage the effects.

With the goal of having respondents consider the implications of their actions (or policy support), the inclusion of social rationality statements for those who disapproved of a policy proposal successfully engaged some participants and lead to them altering their decision. Considering that surveys are not a recommended method for studying collective ways of thinking (Etzioni, 1988), alternative methods like focus groups would likely lead to greater facilitation of social rationality and thus a more collective understanding of issues such as social and environmental sustainability. Therefore, it would likely be effective to bring groups of people together from different communities in Montréal in order to discuss current social-environmental issues like climate change, poverty and unequal access to resources, and identify the ways in which addressing them would be most acceptable.

As older individuals are less likely to support degrowth policies, it would be worthwhile to conduct further research on their specific concerns and reasoning. If it is a case of being more integrated and invested in the dominant social order (Van Liere & Dunlap, 1980), perhaps education is the best course of action here because environmental values have been found to decline with age (e.g. Franzen & Meyer, 2010; Hawcroft & Milfont, 2010), but increase with educational attainment (e.g. Dunlap et al., 2000; Ejelöv & Nilsson, 2020; Franzen & Meyer, 2010; Franzen & Vogl 2013; Tomaselli et al., 2019, Xu & Li, 2018). Relatedly, since environmental values consistently indicated higher likelihood of policy support in this study, it is clear that increased education and effective communication of current issues are necessary to achieve sustainability goals.

Further, I found that the majority of respondents would support a degrowth transition in Canada, while those who are against the idea gave no reason, expressed concerns about negative impacts on the economy, or believed it to be unrealistic. Again, plans for implementation need to be clearly laid out, including concrete strategies to address public concerns.

The methodological choices for this study came with limitations. The nonprobability opt-in panel used for participant recruitment means that the findings presented in this study are not fully representative of the Montréal population. The small sample size and limited number of survey questions (resulting in a limited number of variables) was due to budget limitations. The use of a survey questionnaire meant a limited ability to study the effects of social rationality as respondents reflected on their answers on their own as individuals – a more appropriate method for this topic is the use of focus groups, where individuals can deliberate ideas together. Further, framing and word choice affected respondents' opinions, by confusing them, being unclear or even deterring them from supporting degrowth. Definitions and explanations should be made clear and simple in future research. Next, this study had a focus on those who are against degrowth; it would be worthwhile to conduct research examining the ideological profiles of people with these opinions (e.g. anti-socialists, capitalists) to understand the moral underpinnings and implications of these views. Also, another interesting point of view to engage with would be why people *do* support degrowth, as it could prove helpful to understand how and why people think differently about the social and environmental issues addressed by degrowth.

Degrowth largely remains a theoretical paradigm, sought after by a faction of individuals around the world with hope for a sustainable and equitable society which virtually eliminates its impact on the environment. As the global community has taken little to no concrete measures to

drastically cut GHG emissions, reduce environmental degradation or address social inequality, degrowth is becoming an increasingly important vision for change that should be further explored.

REFERENCES

CER – Provincial and Territorial Energy Profiles - Quebec. (n.d.). Retrieved July 11, 2020, from https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/qc-eng.html

Montreal 2012 | degrowth.info. (n.d.). Retrieved June 19, 2020, from https://www.degrowth.info/en/conferences/montreal-2012/

9.2.5 Provincial and territorial income tax - Canada.ca. (n.d.). Retrieved July 3, 2020, from https://www.canada.ca/en/financial-consumer-agency/services/financial-toolkit/taxes-quebec/taxes-quebec-2/6.html

Revenu Québec - Basic Rules for Applying the GST/HST and QST. (n.d.). Retrieved July 3, 2020, from https://www.revenuquebec.ca/en/businesses/consumption-taxes/gsthst-and-qst/basic-rules-for-applying-the-gsthst-and-qst/

Trust in Government: Canadians wary of politicians and their intentions - Angus Reid Institute. (n.d.). Retrieved July 3, 2020, from http://angusreid.org/views-of-politicians/

Economic Growth - United Nations Sustainable Development. (2019). Retrieved May 11, 2019, from https://www.un.org/sustainabledevelopment/economic-growth/

Montréal. (n.d.). Retrieved July 29, 2019, from http://www.stat.gouv.qc.ca/statistiques/profils/region_06/region_06_00_an.htm

Parties & Observers. (2019). Retrieved May 30, 2019, from https://unfccc.int/parties-observers

Emissions Gap Report 2018. (2018). Retrieved from http://www.un.org/Depts/Cartographic/english/htmain.htm

Extinction Rebellion. (2019). Retrieved May 11, 2019, from https://rebellion.earth/

Cooperative identity, values & principles | ICA. (2018). Retrieved August 1, 2019, from https://www.ica.coop/en/cooperatives/cooperative-identity#cooperative-principles

FridaysForFuture. (2019). Retrieved May 11, 2019, from https://www.fridaysforfuture.org/

Definition - Research & Degrowth (R&D). (n.d.). Retrieved May 31, 2019, from https://degrowth.org/definition-2/

Election Night Results - Major Centres. (n.d.). Retrieved August 29, 2020, from https://enr.elections.ca/MajorCentres.aspx?lang=e

Census Profile, 2016 Census - Montréal [Census metropolitan area], Quebec and Canada [Country]. (n.d.). Retrieved August 29, 2020, from https://www12.statcan.gc.ca/census-recensement/2016/dppd/prof/details/page.cfm?Lang=E&Geo1=CMACA&Code1=462&Geo2=PR&Code2=01&SearchText=montreal&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0

The Sustainable Development Agenda – United Nations Sustainable Development. (n.d.). Retrieved September 1, 2020, from https://www.un.org/sustainabledevelopment/development-agenda-retired/

Abdallah, S., & Thompson, S. (2008). Psychological barriers to de-growth: values mediate the relationship between well-being and income. In *Proceedings of the First International Conference on Economic De-Growth for Ecological Sustainability and Social Equity*.

Abraham, Y.-M. (2019, April). Décroissance: How the degrowth movement is blooming in Quebec. *Briarpatch Magazine*.

Akbulut, B. (2019a). Les communs comme stratégie de décroissance. *Nouveaux Cahiers Du Socialisme* , *21*, 158–162. Retrieved from https://www.erudit.org/en/journals/ncs/2019-n21-ncs04538/90591ac.pdf

Akbulut, B. (2019b). The 'state' of degrowth: Economic growth and the making of state hegemony in Turkey. *Environment and Planning E: Nature and Space*, *2*(3), 513–527. https://doi.org/10.1177/2514848619835135

Alexander, S. (2013). Voluntary Simplicity and the Social Reconstruction of Law: Degrowth from the Grassroots Up. *Environmental Values*, *22*(2), 287–308. https://doi.org/10.3197/096327113X13581561725356

Alexander, S. (2015a). Basic and Maximum Income. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Alexander, S. (2015b). Simplicity. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Ančić, B., & Domazet, M. (2015). Potential for degrowth: Attitudes and behaviours across 18 European countries. *Teorija In Praksa*, *52*, *3*. Retrieved from http://leipzig.degrowth.org/en/

Anderson, K. (2015). Duality in climate science. *Nature Geoscience*, *8*(12), 898–900. https://doi.org/10.1038/ngeo2559

Andreucci, D., & McDonoough, T. (2015). Capitalism. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*.

Antal, M., & Van Den Bergh, J. C. J. M. (2016). Green growth and climate change: conceptual and empirical considerations. *Climate Policy*, *16*(2), 165–177. https://doi.org/10.1080/14693062.2014.992003

Anxo, D., Mencarini, L., Pailhé, A., Solaz, A., Tanturri, M. L., & Flood, L. (2011). Gender Differences in Time Use over the Life Course in France, Italy, Sweden, and the US. *Feminist Economics*, *17*(3), 159–195. https://doi.org/10.1080/13545701.2011.582822

Baker, R., Groves, R. M., & Krosnick, J. (2010). Research Synthesis AAPOR Report on Online Panels. *Public Opinion Quarterly*, *74*(4), 711–781. https://doi.org/10.1093/poq/nfq048

Bekkers, E., Francois, J., & Manchin, M. (2012). Import prices, income, and inequality. *European Economic Review*, *56*(4), 848–869. https://doi.org/10.1016/j.euroecorev.2012.02.005

Benn, J. (2004). Consumer education between "consumership" and citizenship: experiences from studies of young people. *International Journal of Consumer Studies*, *28*(2), 108–116. https://doi.org/10.1111/j.1470-6431.2003.00364.x

Berinsky, A. J. (2017). Measuring Public Opinion with Surveys. *Annual Review of Political Science*, *20*(1), 309–329. https://doi.org/10.1146/annurev-polisci-101513-113724

Bernauer, T., & McGrath, L. F. (2016). Simple reframing unlikely to boost public support for climate policy. *Nature Climate Change*, *6*(7), 680–683. https://doi.org/10.1038/nclimate2948

Bettelheim, B. (1991). *The Informed Heart*. Penguin Books.

Bryman, A., & Bell, E. (2016). *Social Research Methods* (Fourth Can). Oxford University Press.

Buch-Hansen, H., & Koch, M. (2019). Degrowth through income and wealth caps? *Ecological Economics*, *160*, 264–271. https://doi.org/10.1016/J.ECOLECON.2019.03.001

Büchs, M., & Koch, M. (2019). Challenges for the degrowth transition: The debate about wellbeing. *Futures*, *105*, 155–165. https://doi.org/10.1016/J.FUTURES.2018.09.002

Buttel, F. H., & Flinn, W. L. (1978). Social Class and Mass Environmental Beliefs. *Environment and Behavior*, *10*(3), 433–450. https://doi.org/10.1177/0013916578103008

Cain, T. (2018, September 24). How do the wealthy stay that way? They don't invest like the rest. *The Globe and Mail*.

Calvário, R., & Otero, I. (2015). Back-to-the-Landers. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Carson, R. (1962). *Silent Sprint*. Houghton Mifflin Company.

Castoriadis, C. (1979). *Le contenu du socialisme* (Seuil). Paris.

Castoriadis, C. (1987). *The imaginary institution of society*. Polity Press.

Cattaneo, C., DAlisa, G., Kallis, G., & Zografos, C. (2012). Degrowth futures and democracy. *Futures*, *44*, 1–9. https://doi.org/10.1016/j.futures.2012.03.012

Clark, B., Chatterjee, K., & Melia, S. (2016). Changes to commute mode: The role of life events, spatial context and environmental attitude. *Transportation Research Part A: Policy and Practice*, *89*, 89–105. https://doi.org/10.1016/j.tra.2016.05.005

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd ed.). Lawrence Erlbaum Associates.

Communauté métropolitaine de Montréal. (2018). *Déplacements domicile-travail dans le Grand Montréal : faible progression du transport durable depuis 2001*. Retrieved from https://cmm.qc.ca/communiques/deplacements-domicile-travail-dans-le-grand-montreal-faible-progression-du-transport-durable-depuis-2001/

Cook, J., Nuccitelli, D., Green, S. A., Richardson, M., Winkler, B., Painting, R., … Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, *8*(2), 024024. https://doi.org/10.1088/1748-9326/8/2/024024

Cosme, I., Santos, R., & O'Neill, D. W. (2017). Assessing the degrowth discourse: A review and analysis of academic degrowth policy proposals. *Journal of Cleaner Production*, *149*, 321–334. https://doi.org/10.1016/J.JCLEPRO.2017.02.016

D'Alisa, G., & Cattaneo, C. (2013). Household work and energy consumption: A degrowth perspective. Catalonia's case study. *Journal of Cleaner Production*, *38*, 71–79. https://doi.org/10.1016/j.jclepro.2011.11.058

D'Alisa, G., Deriu, M., & Demaria, F. (2015). Care. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Daly, H. (2013). A further critique of growth economics. *Ecological Economics*, *88*, 20–24. https://doi.org/10.1016/j.ecolecon.2013.01.007

Daly, H. (1996). *Beyond Growth: The Economics of Sustainable Development*. Beacon Press.

Daly, H. (1991). *Steady-State Economics*. Island Press.

Demaria, F., Schneider, F., Sekulova, F., & Martinez-Alier, J. (2013). What is Degrowth? From an Activist Slogan to a Social Movement. *Environmental Values*, *22*(2), 191–215. https://doi.org/10.3197/096327113X13581561725194

Deriu, M. (2015a). Autonomy. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Deriu, M. (2015b). Conviviality. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Dietz, T., Fitzgerald, A., & Shwom, R. (2005). Environmental Values. *Annual Review of Environment and Resources*, *30*(1), 335–372. https://doi.org/10.1146/annurev.energy.30.050504.144444

Dietz, T., Stern, P. C., & Guagnano, G. A. (1998). Social Structural and Social Psychological Bases of Environmental Concern. *Environment and Behavior*, *30*(4), 450–471. https://doi.org/10.1177/001391659803000402

Dittmer, K. (2015). Community Currencies. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Drews, S., & Antal, M. (2016). Degrowth: A "missile word" that backfires? *Ecological Economics*, *126*, 182–187. https://doi.org/10.1016/J.ECOLECON.2016.04.001

Drews, S., Antal, M., & van den Bergh, J. C. J. M. (2018). Challenges in Assessing Public Opinion on Economic Growth Versus Environment: Considering European and US Data. *Ecological Economics*, *146*, 265–272. https://doi.org/10.1016/J.ECOLECON.2017.11.006

Drews, S., & Reese, G. (2018). "Degrowth" vs. Other Types of Growth: Labeling Affects Emotions but Not Attitudes. *Environmental Communication*, *12*(6), 763–772. https://doi.org/10.1080/17524032.2018.1472127

Drews, S., Savin, I., & van den Bergh, J. C. J. M. (2019). Opinion Clusters in Academic and Public Debates on Growth-vs-Environment. *Ecological Economics*, *157*, 141–155. https://doi.org/10.1016/J.ECOLECON.2018.11.012

Drews, S., & van den Bergh, J. C. J. M. (2016). Public views on economic growth, the environment and prosperity: Results of a questionnaire survey. *Global Environmental Change*, *39*, 1–14. https://doi.org/10.1016/J.GLOENVCHA.2016.04.001

Dunlap, R. E. (1975). The impact of political orientation on environmental attitudes and actions. *Environment and Behavior*, *7*(4).

Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). New Trends in Measuring Environmental Attitudes: Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale. *Journal of Social Issues*, *56*(3), 425–442. https://doi.org/10.1111/0022-4537.00176

Easterlin, R. A. (1974). Does Economic Growth Improve the Human Lot? Some Empirical Evidence. *Nations and Households in Economic Growth*, 89–125. https://doi.org/10.1016/B978-0-12-205050-3.50008-7

Easterlin, R. A. (2003). *Building a Better Theory of Well-Being*. Retrieved from www.iza.org

Ejelöv, E., & Nilsson, A. (2020). Individual Factors Influencing Acceptability for Environmental Policies: A Review and Research Agenda. *Sustainability*, *12*(6), 2404. https://doi.org/10.3390/su12062404

Etzioni, A. (1988). *The Moral Dimension: Toward a New Economics*. New York: The Free Press.

Fox, J., & Weisberg, S. (2011). *An R Companion to Applied Regression* (2nd ed.). SAGE Publications.

Franzen, A., & Vogl, D. (2013). Two decades of measuring environmental attitudes: A comparative analysis of 33 countries. *Global Environmental Change*, *23*(5), 1001–1008. https://doi.org/10.1016/j.gloenvcha.2013.03.009

Fuss, S., Canadell, J. G., Peters, G. P., Tavoni, M., Andrew, R. M., Ciais, P., … Yamagata, Y. (2014). *Betting on negative emissions*. *Nature Publishing Group* (Vol. 4). https://doi.org/10.1038/nclimate2392

Geiger, N., & Swim, J. K. (2016). Climate of silence: Pluralistic ignorance as a barrier to climate change discussion. *Journal of Environmental Psychology*, *47*, 79–90. https://doi.org/10.1016/j.jenvp.2016.05.002

Georgescu-Roegen, N. (1975). Energy and Economic Myths. *Southern Economic Journal*, *41*(3), 347–381. Retrieved from http://www.uvm.edu/~jfarley/EEseminar/readings/energy myths.pdf

Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process*. Harvard University Press.

Golden, L., & Gebreselassie, T. (2007). Overemployment Mismatches: The Preference for Fewer Work Hours. *Monthly Labor Review*, *130*. Retrieved from

https://heinonline.org/HOL/Page?handle=hein.journals/month130&id=370&div=33&collection=journals

Gudynas, E. (2015). Buen Vivir. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*.

Hamilton, C., & Denniss, R. (2005). *Affleunza: When Too Much is Never Enough.* Allen and Unwin.

Hawcroft, L. J., & Milfont, T. L. (2010). The use (and abuse) of the new environmental paradigm scale over the last 30 years: A meta-analysis. *Journal of Environmental Psychology*, *30*(2), 143–158. https://doi.org/10.1016/j.jenvp.2009.10.003

Heeringa, S. G., West, B. T., & Berglund, P. A. (2017). *Applied Survey Data Analysis* (2nd ed.). CRC Press. Retrieved from https://books.google.ca/books?hl=en&lr=&id=q6bwDwAAQBAJ&oi=fnd&pg=PP1&dq=survey+data+analysis+methods&ots=W_XFkd5Vw8&sig=PtygOEvJoYr0qmPBYAEZbK1NXr0#v=onepage&q=r2&f=false

Heinberg, R. (2010). *Peak everything: waking up to the century of declines*. New Society Publishers.

Helfrich, S., & Bollier, D. (2015). Commons. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Hennighausen, T., & Heinemann, F. (2015). Don't Tax Me? Determinants of Individual Attitudes Toward Progressive Taxation. *German Economic Review*, *16*(3), 255–289. https://doi.org/10.1111/geer.12050

Hickel, J., & Kallis, G. (2019). Is Green Growth Possible? *New Political Economy*, 1–18. https://doi.org/10.1080/13563467.2019.1598964

Hirsch, F. (1976). *Social Limits to Growth*. Harvard University Press.

Illich, I. (1973). *Tools for Conviviality*. Fontana/Collins.

IPCC. (2013). Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

IPCC. (2018). Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P.

Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.

Islam, S. N., & Winkel, J. (2017). *Climate Change and Social Inequality* *. Retrieved from http://www.ejnetindiaresource.org/ejissues/bali.pdfen-

Jackson, T. (2009). *Prosperity without growth: Economics for a finite planet*. Routledge.

Jackson, T. (2015). New Economy. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era* (pp. 178–181). Routledge.

Jackson, T., & Webster, R. (2016). Limits Revisited - A Review of the Limits to Growth Debate. *APPG on Limits to Growth*, (April), 24. https://doi.org/10.13140/RG.2.2.21095.91045

Johanisova, N., Surinach Padilla, R., & Parry, P. (2015). Co-operatives. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Kallis, G. (2011). In defence of degrowth. *Ecological Economics*, *70*(5), 873–880. https://doi.org/10.1016/J.ECOLECON.2010.12.007

Kallis, G. (2018). *Degrowth*. Agenda Publishing.

Kallis, G. (2017). Radical dematerialization and degrowth. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *375*(2095), 20160383. https://doi.org/10.1098/rsta.2016.0383

Kallis, G., Demaria, F., & D'Alisa, G. (2015). Introduction: Degrowth. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Kallis, G., Kerschner, C., & Martinez-Alier, J. (2012, December 1). The economics of degrowth. *Ecological Economics*. Elsevier. https://doi.org/10.1016/j.ecolecon.2012.08.017

Kallis, G., Kostakis, V., Lange, S., Muraca, B., Paulson, S., & Schmelzer, M. (2018). Research On Degrowth. *Annual Review of Environment and Resources*, *43*(1), 291–316. https://doi.org/10.1146/annurev-environ-102017-025941

Kalmykova, Y., Rosado, L., & Patrício, J. (2016). Resource consumption drivers and pathways to reduction: economy, policy and lifestyle impact on material flows at the national and urban scale. *Journal of Cleaner Production*, *132*, 70–80. https://doi.org/10.1016/j.jclepro.2015.02.027

Kaplowitz, M. D., Lupi, F., Yeboah, F. K., & Thorp, L. G. (2013). Exploring the middle ground between environmental protection and economic growth. *Public Understanding of Science*, *22*(4), 413–426. https://doi.org/10.1177/0963662511424545

Kent, J. L. (2015). Still Feeling the Car – The Role of Comfort in Sustaining Private Car Use. *Mobilities*, *10*(5), 726–747. https://doi.org/10.1080/17450101.2014.944400

Kleinbaum, D. G., & Klein, M. (2002). *Logistic Regression: A Self-Learning Text* (Second). Springer. https://doi.org/10.1007/978-0-387-93835-6

Koch, M., Buch-Hansen, H., & Fritz, M. (2017). Shifting Priorities in Degrowth Research: An Argument for the Centrality of Human Needs. *Ecological Economics*, *138*, 74–81. https://doi.org/10.1016/J.ECOLECON.2017.03.035

Kosoy, N., Brown, P. G., Bosselmann, K., Duraiappah, A., Mackey, B., Martinez-Alier, J., … Thomson, R. (2012). Pillars for a flourishing Earth: planetary boundaries, economic growth delusion and green economy. *Current Opinion in Environmental Sustainability*, *4*(1), 74–79. https://doi.org/10.1016/J.COSUST.2012.02.002

Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T., & Aylmer, C. (2013). Beyond GDP: Measuring and achieving global genuine progress. *Ecological Economics*, *93*, 57–68. https://doi.org/10.1016/j.ecolecon.2013.04.019

Latouche, S. (2015). Imaginary, Decolonization of. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era* (pp. 117–120). Routledge.

Latouche, S. (2009). *Farewell to Growth*. Polity.

Leiserowitz, A. (2006). Climate change risk perception and policy preferences: The role of affect, imagery, and values. In *Climatic Change* (Vol. 77, pp. 45–72). Springer. https://doi.org/10.1007/s10584-006-9059-9

Lorek, S. (2015). Dematerialization. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Maclean, R. (2019, April 26). Cyclone Kenneth: UN says Mozambique may need another huge aid effort | World news | The Guardian. *The Guardian*. Retrieved from https://www.theguardian.com/world/2019/apr/25/cyclone-kenneth-mozambique-hit-by-strongest-storm-ever?CMP=fb_gu&utm_medium=Social&utm_source=Facebook&fbclid=IwAR1KcclngPWUUIpfznXPckygfzqA0U7UufJYVtZTEH5QVmlXxxUtcvgoXA8#Echobox=1556268963

Martinez-Alier, J. (2009). Socially Sustainable Economic De-growth. *Development and Change*, *40*(6), 1099–1119. https://doi.org/10.1111/j.1467-7660.2009.01618.x

Martinez-Alier, J. (2014, July 1). The environmentalism of the poor. *Geoforum*. Elsevier Ltd. https://doi.org/10.1016/j.geoforum.2013.04.019

Maslow, A. H. (1970). *Motivation and Personality* (2nd ed.). New York: Viking Press.

Mayes, L. (2019). Is Canada Ready to Leap For a Green New Deal? | The McGill Tribune. Retrieved August 8, 2019, from http://www.mcgilltribune.com/news/is-canada-ready-to-leap-for-a-green-new-deal/

Meadows, D. H., Meadows, D. L., Randers, J., & Behrens III, W. W. (1972). *The Limits to Growth*.

Mildenberger, M., Marlon, J. R., Howe, P. D., & Leiserowitz, A. (2017, December 1). The spatial distribution of Republican and Democratic climate opinions at state and local scales. *Climatic Change*. Springer Netherlands. https://doi.org/10.1007/s10584-017-2103-0

Monbiot, G. (2019, April 15). Only rebellion will prevent an ecological apocalypse | George Monbiot | Opinion | The Guardian. *The Guardian*. Retrieved from https://www.theguardian.com/commentisfree/2019/apr/15/rebellion-prevent-ecological-apocalypse-civil-disobedience?CMP=share_btn_fb&fbclid=IwAR3Hdcc9vt1F2U6NqNSYNz-uy4ahd2fOnjHvLoxqPPfC_MARpCDCh9YiiBQ

Morrison, D. E., Hornback, K. E., & Warner, W. K. (1972). The environmental movement: Some preliminary observations and predictions. *Social Behavior, Natural Resources, and the Environment*.

Natale, A., Di Martino, S., Procentese, F., & Arcidiacono, C. (2016). De-growth and critical community psychology: Contributions towards individual and social well-being. *Futures*, *78–79*, 47–56. https://doi.org/10.1016/J.FUTURES.2016.03.020

Oecd. (2019). *Tax revenue trends in the OECD*.

Parolin, Z., & Siöland, L. (2020). Support for a universal basic income: A demand–capacity paradox? *Journal of European Social Policy*, *30*(1), 5–19. https://doi.org/10.1177/0958928719886525

Pasta, D. J. (2009). *Learning When to Be Discrete: Continuous vs. Categorical Predictors*.

Peters, G. P., Andrew, R. M., Canadell, J. G., Fuss, S., Jackson, R. B., Korsbakken, J. I., … Nakicenovic, N. (2017). Key indicators to track current progress and future ambition of the Paris Agreement. *Nature Climate Change*, *7*(2), 118–122. https://doi.org/10.1038/nclimate3202

Polanyi, K. (1944). *The Great Transformation*. Beacon Press.

Pullinger, M. (2014). Working time reduction policy in a sustainable economy: Criteria and options for its design. *Ecological Economics*, *103*, 11–19. https://doi.org/10.1016/j.ecolecon.2014.04.009

Raventós, D. (2007). *Basic Income: The Material Conditions of Freedom*. Pluto Press.

Reimers, S. (2009). A paycheck half-empty or half-full? Framing, fairness and progressive taxation. Retrieved from http://journal.sjdm.org/9707/jdm9707.pdf

Rigon, A. (2017). Degrowth Politics and Policies for Degrowth. Retrieved July 9, 2019, from https://www.degrowth.info/en/2017/03/degrowth-politics-and-policies-for-degrowth/

Rochette, A. (2016). Climate Change is a Social Justice Issue: The Need for a Gender-Based Analysis of Mitigation and Adaptation Policies in Canada and Québec. *Journal of Environmental Law and Practice*, *29*, 383–410. Retrieved from https://www.academia.edu/223610/Women_and_Climate_Change_Poli-

Rockström, J., Steffen, W. L., Noone, K., Persson, Å., Stuart, F., Iii, C., … Foley, J. (2009). *Planetary Boundaries: Exploring the Safe Operating Planetary Boundaries: Exploring the Safe Operating Space for Humanity Space for Humanity Recommended Citation Recommended Citation*.

Roosma, F., & Van Oorschot, W. (2020). Public opinion on basic income: Mapping European support for a radical alternative for welfare provision. *Journal of European Social Policy*, *30*(2).

Sayer, L. C. (2005). Gender, Time and Inequality: Trends in Women's and Men's Paid Work, Unpaid Work and Free Time. *Social Forces*, *84*(1), 285–303. https://doi.org/10.1353/sof.2005.0126

Sayer, L. C. (2016). Trends in Women's and Men's Time Use, 1965–2012: Back to the Future? (pp. 43–77). Springer, Cham. https://doi.org/10.1007/978-3-319-21635-5_2

Schneider, F. (2010). Degrowth of Production and Consumption Capacities for social justice, wellbeing and ecological sustainability. In *Proceedings of the Second International Conference on Economic Degrowth for Ecological Sustainability and Social Equity*. Barcelona.

Schneider, F., Kallis, G., & Martinez-Alier, J. (2010). Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue. *Journal of Cleaner Production*, *18*(6), 511–518. https://doi.org/10.1016/j.jclepro.2010.01.014

Sekulova, F. (2015). Happiness. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Shen, J., & Saijo, T. (2008). Reexamining the relations between socio-demographic characteristics and individual environmental concern: Evidence from Shanghai data. *Journal of Environmental Psychology*, *28*(1), 42–50. https://doi.org/10.1016/j.jenvp.2007.10.003

Steffen, W., Richardson, K., Rockstrom, J., Cornell, S. E., Fetzer, I., Bennett, E. M., … Sorlin, S. (2015a). Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), 1259855–1259855. https://doi.org/10.1126/science.1259855

Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., & Ludwig, C. (2015b). The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, *2*(1), 81–98. https://doi.org/10.1177/2053019614564785

Stier, H., & Lewin-Epstein, N. (2003). Time to work: A comparative analysis of preferences for working hours. *Work and Occupations*, *30*(3), 302–326. https://doi.org/10.1177/0730888403253897

Stokes, B., Wike, R., & Carle, J. (2015). Global Concern about Climate Change, Broad Support for Limiting Emissions. Retrieved October 2, 2019, from https://www.pewresearch.org/global/2015/11/05/global-concern-about-climate-change-broad-support-for-limiting-emissions/

Stuart, D., Gunderson, R., & Petersen, B. (2019). Climate Change and the Polanyian Counter-movement: Carbon Markets or Degrowth? *New Political Economy*, *24*(1), 89–102. https://doi.org/10.1080/13563467.2017.1417364

Talberth, J., Cobb, C. W., & Slattery, N. (2007). *The genuine progress indicator, 2006: A tool for sustainable development.*

Tokic, D. (2012). The economic and financial dimensions of degrowth. *Ecological Economics*, *84*, 49–56. https://doi.org/10.1016/J.ECOLECON.2012.09.011

Tomaselli, M. F., Sheppard, S. R. J., Kozak, R., & Gifford, R. (2019). What do Canadians think about economic growth, prosperity and the environment? *Ecological Economics*, *161*, 41–49. https://doi.org/10.1016/J.ECOLECON.2019.03.007

Torgler, B., & García-Valiñas, M. A. (2007). The determinants of individuals' attitudes towards preventing environmental damage. *Ecological Economics*, *63*(2–3), 536–552. https://doi.org/10.1016/j.ecolecon.2006.12.013

Trobe, H. L. La, & Acott, T. G. (2000). A Modified NEP/DSP Environmental Attitudes Scale. *The Journal of Environmental Education*, *32*(1), 12–20. https://doi.org/10.1080/00958960009598667

United Nations. (2015). *The Paris Agreement*. Retrieved from https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

Vail, J. (2010). Decommodification and Egalitarian Political Economy. *Politics & Society*, *38*(3), 310–346. https://doi.org/10.1177/0032329210373069

van den Bergh, J. C. J. M. (2011). Environment versus growth - A criticism of "degrowth" and a plea for "a-growth." *Ecological Economics*, *70*(5), 881–890. https://doi.org/10.1016/j.ecolecon.2010.09.035

van den Bergh, J. C. J. M. (2009). The GDP paradox. *Journal of Economic Psychology*, *30*(2), 117–135. https://doi.org/10.1016/J.JOEP.2008.12.001

Van Liere, K. D., & Dunlap, R. E. (1980). The Social Bases of Environmental Concern: A Review of Hypotheses, Explanations and Empirical Evidence. *Public Opinion Quarterly*. Retrieved from https://academic.oup.com/poq/article-abstract/44/2/181/1863849

Van Oorschot, W. (1998). *Dutch Public Opinion on Social Security*.

Vatn, A. (2006). *Institutions*.

Victor, P. A. (2015). Growth. In G. D'Alisa, F. Demaria, & G. Kallis (Eds.), *Degrowth: A Vocabulary for a New Era*. Routledge.

Wall, M., & Heslop, L. A. (1986). Consumer attitudes toward Canadian-made versus imported products. *Journal of the Academy of Marketing Science*, *14*(2), 27–36. https://doi.org/10.1007/BF02722154

Watts, J. (2019, April 23). The Greta Thunberg effect: at last, MPs focus on climate change. *The Guardian*.

Weiss, M., & Cattaneo, C. (2017). Degrowth – Taking Stock and Reviewing an Emerging Academic Paradigm. *Ecological Economics*, *137*, 220–230. https://doi.org/10.1016/J.ECOLECON.2017.01.014

Whitmarsh, L. (2011). Scepticism and uncertainty about climate change: Dimensions, determinants and change over time. *Global Environmental Change*, *21*(2), 690–700. https://doi.org/10.1016/j.gloenvcha.2011.01.016

Wiernik, B. M., Ones, D. S., & Dilchert, S. (2013). Age and environmental sustainability: A meta-analysis. *Journal of Managerial Psychology*, *28*(7), 826–856. https://doi.org/10.1108/JMP-07-2013-0221

Willeit, M., Ganopolski, A., Calov, R., & Brovkin, V. (2019). Mid-Pleistocene transition in glacial cycles explained by declining CO_2 and regolith removal. *Science Advances*, *5*(4), eaav7337. https://doi.org/10.1126/sciadv.aav7337

Williams, R. (n.d.). *Ordinal Independent Variables*. Retrieved from https://www3.nd.edu/~rwilliam/

Wlezien, C., & Soroka, S. N. (2016). Public Opinion and Public Policy. In *Oxford Research Encyclopedia of Politics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190228637.013.74

Wynes, S., & Nicholas, K. A. (2017). The climate mitigation gap: education and government recommendations miss the most effective individual actions. *Environmental Research Letters*, *12*(7), 074024. https://doi.org/10.1088/1748-9326/aa7541

Xu, J., & Li, J. (2018). The Tradeoff between Growth and Environment: Evidence from China and the United States. *Problemy Ekorozwoju*, *Vol. 13*(nr 1). Retrieved from http://yadda.icm.edu.pl/baztech/element/bwmeta1.element.baztech-3c9ccc58-a3bb-43a8-8b08-50b76fa9936d

Yau, C. (n.d.). R Tutorial An R Introduction to Statistics. Retrieved from http://www.r-tutor.com/elementary-statistics

Zhang, Y. J., Liu, Z., Zhang, H., & Tan, T. De. (2014). The impact of economic growth, industrial structure and urbanization on carbon emission intensity in China. *Natural Hazards*, *73*(2), 579–595. https://doi.org/10.1007/s11069-014-1091-x

APPENDIX A
Survey questionnaire

Module 1 – Demographics

	Question	**Response Options**
1	What is your age?	*- 18 to 24* *- 25 to 34* *- 35 to 44* *- 45 to 54* *- Over 55*
2	Which of the following best describes your combined annual household income after taxes (includes employment income, government transfers, Registered Retirement Savings Plan (RRSP), etc.)?	*- Under $29,999* *- $30,000 to $59,999* *- $60,000 to $89,999* *- $90,000 to $119,999* *- $120,000 to 149,999* *- Over $150,000*
3	What is the highest level of education you have completed?	*- High school diploma* *- Some CEGEP or university* *- CEGEP or technical school certificate* *- Undergraduate degree* *- Graduate degree*
4	What is your current employment status?	*- Employed full time (40+ hours a week)* *- Employed part time (less than 40 hours a week)* *- Unemployed* *- Student* *- Self-employed*

		- Retired *- Unable to work*
5	On average, how many hours per week do you spend: a. Travelling / commuting b. Housework (preparing meals, washing dishes, cleaning house, washing laundry)	*a. ____ hours / week* *b. ____ hours / week*
6	In politics people sometimes talk of "left" and "right". Where would you place yourself on this scale?	*5-point scale from 'left-wing' to 'right-wing'*

Module 2 – Environmental values and faith in technology

*Note: Statements 2-5 taken from La Trobe & Acott (2000) + Question 7 taken from Curry, Ansolabehere & Herzog (2007)

	Statement	**Response Options**
1	How concerned are you about climate change?	*5-point scale from 'not at all concerned' to 'extremely concerned'*
2	A change in basic attitudes and values is necessary in order to solve environmental problems.	*5-point scale from 'strongly disagree' to 'strongly agree'*
3	Technology can overcome any environmental problems.	*5-point scale from 'strongly disagree' to 'strongly agree'*
4	Natural resources should be used primarily to provide for basic needs rather than material wealth.	*5-point scale from 'strongly disagree' to 'strongly agree'*
5	Humans are presently interfering too much with the natural environment.	*5-point scale from 'strongly disagree' to 'strongly agree'*
6	The highest priority should be given to protecting the environment, even if it hurts the economy.	*5-point scale from 'strongly disagree' to 'strongly agree'*

Module 3 – Policy support

Aim of the module: To assess attitudes toward degrowth policy implementation at the Canadian national scale.

	Question	**Response Options**

1	Would you support a policy that limited trade distances and volume? For example, this could mean paying more for imported tropical fruits, or not having access to them at all. → If no, go to 1b	*yes/no*
1b	*In September 2019, Canada imported $50 billion and exported $50 billion worth of goods and services.* *Some of the major results of the international trade we support through our consumption habits include: greenhouse gas emissions from increased economic activity and transportation, pollution, degrading natural resources, etc.* Considering this, would you support a policy that limited trade distances and volume? → If no, why not?	*yes/no + open ended*
2	Would you support the creation of a moratorium (a ban) on new infrastructure, such as oil sand projects and affiliated pipelines (other examples could include nuclear power plants, highways and dams)? → If no, go to 2b	*yes/no*
2b	*Some of the major results of oil sands projects and pipelines include: violation of Indigenous rights, greenhouse gas emissions, waste management issues, pipeline leaks and ruptures, decreased air quality, risks to wildlife, population displacement, water contamination, etc.* Considering this, would you support the creation of a moratorium on new infrastructure, such as oil sands projects and pipelines? → If no, why not?	*yes/no + open ended*
3	Would you support the implementation of taxes on resource use, such as home energy consumption (other examples could include water consumption and petrol)? For instance, you would pay more for using electricity for lighting, heating, cooling, and refrigeration and for operating appliances, computers, and electronics. → If no, go to 3b	*yes/no*
3b	*Some of the major results of our energy consumption include: climate change due to greenhouse gas emissions, air pollution, forest destruction, ecosystem degradation,*	*yes/no*

	unequal access to energy, health impacts from air pollution, population displacement, dam failures, etc. Considering this, would you support the implementation of taxes on resource use, for example, on home energy consumption? → If no, why not?	*+ open ended*
4	Would you support the implementation of progressive taxation? *Progressive taxation: a progressive income tax could end in a 100 per cent tax on incomes over a certain democratically determined level, thereby effectively creating a maximum wage. The surplus could be used to pay for a basic income or tax breaks for the poor. Progressive taxation would therefore restrict the consumption of some, while allowing others to consume their fair share of resources.* → If no, why not?	*yes/no +open ended*
5	Would you support the implementation of a universal basic income? *Universal basic income: every person living permanently in a nation would receive from the state an unconditional periodic payment, and this payment would be sufficient for an individual to live at a minimal though dignified standard of economic security.* → If no, go to 5b	*yes/no*
5b	*While a universal basic income would lead some people to earn less money, it would also alleviate those in poverty by ensuring that everyone's basic human needs (i.e. supply of clean water, food, housing) are met.* Considering this, would you support the implementation of a universal basic income? → If no, why not?	*yes/no +open ended*
6	Would you support a reduction of working hours policy (for example, having a four-day work week)? Your general income would therefore also be reduced, but you would keep the same benefits, pension, and hourly wage, and this policy would allow for more leisure time. → If no, why not?	*yes/no +open ended*

Module 4 – Degrowth awareness and support
Aim of the module: To assess prior knowledge of degrowth, and support for its implementation.

	Question	**Response Options**
1	Have you heard of *degrowth* and understand what it entails? → If yes, go to question2; if no, go to question 3	*yes/no*
2	Would you support a transition to degrowth in Canada? → If no, why not?	*yes/no* *+ open ended*
3	**See Box 1 for a full definition of degrowth.** **The policy proposals you assessed from Section 3 are each associated with degrowth.** Based on this definition, would you support a transition to degrowth in Canada? → If no, why not?	*yes/no* *+ open ended*

Box 1. Definition of degrowth

"Sustainable degrowth is a downscaling of production and consumption that increases human well-being and enhances ecological conditions and equity on the planet. It calls for a future where societies live within their ecological means, with open, localized economies and resources more equally distributed through new forms of democratic institutions. Such societies will no longer have to "grow or die." Material accumulation will no longer hold a prime position in the population's cultural imaginary. The [priority] of efficiency will be substituted by a focus on sufficiency, and innovation will no longer focus on technology for technology's sake but will concentrate on new social and technical arrangements that will enable us to live convivially [(amicably, peacefully)] and frugally. Degrowth does not only

challenge the centrality of GDP as an overarching policy objective but proposes a framework for transformation to a lower and sustainable level of production and consumption, a shrinking of the economic system to leave more space for human cooperation and ecosystems" (Research & Degrowth, 2019).