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Themes of climate change agency: a qualitative study on how people construct agency in relation to climate change

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This study analyzes how people discursively construct their (non)agency—how they display abilities and capacities to act, or the lack thereof—vis-à-vis climate change. The paper presents the results of a detailed discursive and thematic analysis of 28 interview transcripts: 12 broad agency themes representing different ways of constructing human (non)agency in relation to climate change. The most common agency theme was Collective, followed by Individual, Critical, and Threatened agency. Climate change skepticism was displayed mostly within Critical agency, where the speakers presented themselves as intellectual and critically thinking individuals, drawing from scientific rhetoric while criticizing and misrepresenting climate science. The constructions of Collective agency emerged as a form of agency that displays a sense of meaningfulness related to socially embedded actions. The construction of agency in relation to climate change is very detailed discursive work, as people draw from multiple societal discourses to craft varied discursive positions of experiencing, knowing, and doing in relation to it. The paper suggests ways for climate communications to take into account these multiple themes of agency.

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Introduction

Climate change presents a profound challenge to human agency (see e.g. the latest Intergovernmental Panel on Climate Change report, IPCC, 2022). It demands us to come to terms with humans having become a destructive geophysical agent causing changes in vast natural historical timescales (Chakrabarty, 2009, 2012). Climate change might push people towards a sense of complete loss of agency, the feeling that there is nothing we can do (Braidotti, 2019), especially as the question of whether it is already too late to prevent dangerous climate change is discussed in serious science circles (Moser, 2020). The challenge of rethinking a realistic, multifaceted notion of human agency is ever more complex and pressing.

In this paper, I take a detailed, qualitative look at how people construct positions of (non)agency in relation to climate change. Presenting the results of a detailed language-oriented analysis of an interview study conducted with 28 interviewees representing 11 different nationalities, I show how they construct themselves as agents of feeling, knowing, and doing in relation to climate change. I take a critical stance to the overly individualistic and simplistic perspectives on the psychology of climate change action. I attempt to contribute to developing a wider understanding of agency, taking into account how collective discourses afford individuals to take various (non)agentic positions to climate change. Placing myself at the crossroads of climate psychology and science communications, I start with a concise review at relevant research literature from a variety of disciplines.

Climate change refers to the scientifically identifiable periodic modification of the climate of the Earth, persisting for an extended period and caused by various geologic, chemical, biological, geographic, and human factors (IPCC, 2019; Jackson, 2021). In contemporary language use as well as in this paper, in alignment with the United Nations Framework Convention on Climate Change, the term refers to the warming trend spanning the entire 20th century and the first decades of 21st century, occurring *in addition to* natural climate variability and attributable directly or indirectly to human activities such as carbon dioxide emissions (IPCC, 2019; Jackson, 2021; UNFCCC, 2011).

A central notion in this paper is *agency*. Climate change debates anchor a variety of notions of human agency as being responsible of (or not) and able to mitigate (or not) climate change and its effects. Climate change education and communication have moved on from grappling with how to convince people that it is indeed human agency that is responsible for creating climate change and have increasingly directed their efforts at communicating about mitigation and adaptation possibilities. These are challenging tasks, not the least because climate change as a phenomenon tends to be experienced in Western countries as remote, invisible, and complex, yet its scientifically accurate presentations can also cause difficult and paralyzing feelings, counteracting any initiative to motivate people into action (e.g. Moser, 2010; Moser and Dilling, 2011; Monroe et al., 2019; Norgaard, 2011; Verlie, 2020). As climate communication is increasingly facing its tasks in the times of "it's perhaps already too late", further insights into how to understand human expressions of agency are needed.

Traditionally, agency has been defined as an internal psychological mechanism, capacity to act intentionally, also carrying the implications that an agent is separate from others, aware of their own actions, and able to reflect upon these deeds (Alkire, 2005; Harré, 1993; Kögler, 2010; Pope, 1998; Yamamoto, 2006). Recent work within environmental education has defined agency as "an individual's perception of their own capability to author responses that effect change in the world" (Walsh and Cordero, 2019). Such a view of agency merely as "capability" to impact change in the world frames it as an internal attribute of a single human being and ties it into perceivable "external" impacts, thus narrowing what could potentially be understood as agency. Behaviorally oriented climate psychology, also dominated by this individualistic and overly rational view on human action, has led to the promotion of suboptimal, information-focused climate intervention strategies (Whitmarsh et al., 2021). Furthermore, the traditional Western notion of human agency as separate from and superior to nature, dispositioned to control it, is precisely the ideology that has justified the unlimited exploitation of the nonhuman world, leading to the current climate crisis (Adeney et al., 2020; Hoggett, 2019; Plumwood, 2009). Further need for finding alternative ways to understand human agency emerges from the fact that narrow conceptualizations of agency as human goal-directed activity might be suitable for quantitative survey purposes (Alkire, 2005) but are not alone sufficient to capture the variety in how people actually discuss their experiences of and actions in relation to climate change. Climate psychology, education, and communications have noted the need to go beyond understandings of the human as a logical agent taking rational action and the co-implied belief that people need to be informed better in order to help them take climate action (e.g. Hoggett, 2019; Moser and Dilling, 2011; Verlie, 2017).

Following a discourse analytical approach, agency is here understood not as a psychological attribute but as something discursively constructed in interaction (e.g. Toivonen et al., 2019; Toivonen, 2019). I define agency as the discursive attribution of a variety of aspects of being—ableness or the lack thereof both to oneself and to other humans in relation to climate change. Thus, I also take into account the phenomenon of ascribing nonagency—the construction of lacking or otherwise troubled being-ableness (Toivonen et al., 2019). To keep the approach to agency as open and flexible as possible, a dialogue with multiple ways of approaching climate change agency in other fields is needed.

A concept closely related to that of agency, albeit usually defined in a narrower manner, is that of *efficacy*. A central differentiation has been made between *individual efficacy*—individual's belief in their capacity of mitigating climate change—and *collective* or *group efficacy*—belief in one's ingroup or in the system as a whole being able to cooperate to take action on climate change (Chen, 2015; Fritsche et al., 2018; Hornsey et al., 2021; Roser-Renouf et al., 2014; van Zomeren et al., 2010). Bostrom et al. (2019) differentiate between personal self-efficacy and response efficacy (belief in the ease of taking a certain mitigation action versus its perceived impact) at the personal and at the collective level. The notion of *participative efficacy beliefs*, the beliefs that one's own individual actions are a crucial contribution to collective climate action, seems especially promising (Bamberg et al., 2015; Jugert et al., 2016; van Zomeren et al., 2013). Efficacy research has given valuable contributions to our understanding, yet is limited to rather narrow definitions; to give an example, I argue that focusing on the perceived *ease* of taking a certain action captures only a glimpse of what agency can be, and eventually, is completely different from perceiving oneself as actually able or not to take that action.

Previous language-oriented research has demonstrated the staggering multiplicity of climate change views and experiences. Perceptions of climate change vary both within and between different societies (Christmann et al., 2014), building on different vocabularies and epistemologies, understandings of causality and reality, and approaches to science (O'Brien and Leichenko, 2019). It has been discussed for decades how the authority of science is diminishing in the mix of formal and informal scientific communications, nonexpert opinions, and dramatized media stories about climate change (Boykoff, 2008; Minol et al., 2007; Schäfer, 2012; Weingart et al., 2000). One of the most widely noted

climate change narratives is the apocalypse, which seems to leave very little room for human agency to operate. Presentations of massive future disasters are still flourishing in societal debates, literature, and media, even if their value in mobilizing effective climate action has been questioned (Cole, 2021; Crist, 2007; Fiskio, 2012; Hinkel et al., 2020; Stoknes, 2015). Another common trend in dominant Western discourses underlines the power of individual human agency, framing climate change as solvable by individual lifestyle management solutions (Adeney et al., 2020; Siperstein, 2016).

Important threads in previous research have focused on understanding climate change passivity and skepticism/denialism. Studies on denialism and skepticism have pointed out how people objecting to standard scientific views on climate change invest in coming across as scientifically reasoning and, paradoxically, often draw from scientific discourses while crafting unscientific accounts (Bloomfield and Tillery, 2019; Jylhä, 2018; Sharman, 2014). Climate change denial seems to be linked to the preference of keeping existing social and human vs. nonhuman nature hierarchies and power inequalities untouched (Jylhä, 2016; Jylhä et al., 2016, 2021; Jylhä and Akrami, 2015) and might actually be part of a more general anti-egalitarian, exclusionary, and conservative worldview (Jylhä and Hellmer, 2020; Jylhä et al., 2020). Furthermore, considerable scholarship is investigating the dynamics behind the slow and ineffective response to climate change seen in many parts of the world. Previous studies using interviews have shown that people frequently frame climate change as a distant, uncertain problem instead of a local issue touching them personally, even if they would have personal experience of climate change related natural catastrophes (Whitmarsh, 2008). Simply showing images of climate change impacts can cause people to take distance, struggling to understand how they could do anything about it (O'Neill et al., 2013). In her notable sociological account of a rural Norwegian community, Norgaard (2011) analyzes how distancing from climate change is achieved by socially constructed emotion and knowledge management strategies. Milkoreit (2017) has framed the ineffectiveness of human response as a failure of collective imagination: We have failed to imagine solution pathways to a sustainable future.

A considerable multidisciplinary scholarship has been building a relational ontology, criticizing the notion of the autonomous, rational individual of traditional liberal humanism (Barad, 2003; Braidotti, 2019; Haraway, 2016) and problematizing how the notion of agency has intricate ties with an anthropocentric understanding of subjectivity and power (Marchand, 2018). New materialists have advanced the notion of agency as something that does not reside within individual human minds, but emerges from complex networks of different beings, processes, and phenomena (Barad, 2003; Braidotti, 2019; Haraway, 2016). Verlie has emphasized the need for environmental education and climate justice to challenge human-centric, individualistic ideas of agency and acknowledge how climate change actions emerge from the complex entanglements between humans and the climate (e.g. Verlie, 2017, 2019a, 2019b, 2020, 2021).

In this study, I ask "How do people construct their own (non) agency or the (non)agency of humans in general in relation to climate change?" by detailed analysis of interview data. Next, I proceed to explicate the methodology and analysis of the interview study.

Methods

I conducted 28 semi-structured interviews on Zoom videocalls, 17 interviews in English and 11 in Finnish. The participants were volunteers recruited by posting on various social media platforms (Facebook, Reddit, LinkedIn) and mailing lists of environmental organizations and university departments as well as by snowballing my personal networks. The participants' ages varied between 21–83 and they represented 11 different nationalities. 16 of the participants self-identified as women and 12 as men. Four participants had professional background in working with climate change, and some declared having particularly committed pro-environmental lifestyles. All participants signed an informed consent form prior to the interviews and, if they so requested, received their anonymized interview transcript by email for commentary.

The interview protocol included questions concerning the participant's thoughts about the environment, nonhuman animals, and climate change as well as their experiences and thoughts of environment-related fiction. In the first part of the interview, the interviewees were presented with an environmentally themed story which they discussed; results concerning these parts of the interview have been presented in another paper (Toivonen and Caracciolo, under review). This study focuses on those parts of the interviews where climate change was discussed.

The participants were asked e.g. what climate change means to them, how they see the role of human actions in climate change, and how they see their own chances to do something about it. A few participants specified that they know climate change happens also due to non-human factors, but said they understand that in this context we are discussing human-caused global warming. One participant denied believing in human-caused warming of the climate, instead constructing ice age as a more likely climate change threat.

I transcribed the interviews verbatim into English producing a thorough orthographic transcript that included all spoken words and sounds (Braun and Clarke, 2012). In the sections of the transcriptions included in the analysis, the interviewees either responded to a question explicitly concerning climate change or spontaneously, as a part of their answer to another kind of question, diverted to the topic of climate change.

I first read the anonymized transcripts drawing from discourse analytical methodology (see e.g. Potter, 2004), paying attention to all different ways the participants expressed human abilities, capacities, acting, doing, etc. in relation to climate change. I started organizing these different discursive positions of agency (or the lack of it, non-agency) into different classes that in the later Thematic Analysis stage of the analysis developed into groups with their own specific "codes" and that were further related to wider patterns of meaning, "themes". With a discursive position of (non)agency I refer to a verbal expression that has an active verb and that presents the speaker (or other humans and people in general) as able or not able to do something in relation to climate change (see also Toivonen et al., 2019).

In the next phase, I further analyzed the anonymized transcripts with Thematic Analysis (Braun and Clarke, 2006, 2012; Clarke and Braun, 2017; Maguire and Delahunt, 2017). TA provided a structured framework to identify and organize patterns of meaning (themes) while allowing to identify what is shared in how a topic is discussed (Braun and Clarke, 2012). Because I combined a discourse analytic close reading with a TA approach, my analytical method could be described as "thematic DA" (e.g. Taylor and Ussher, 2001). In alignment with the constructionist worldview underlying much of discourse analytic work, I applied thematic analysis as a constructionist method, thus, assuming that people's constructions of human agency in response to climate change are constituted in and through discourse and that cultural and societal discourses play a role in how people discuss climate change. I applied TA mainly as an inductive method with a data driven approach (Braun and Clarke, 2012);

however, my reading was also drawing from the theoretical notion of discursive (non)agency (Toivonen, 2019).

In the initial coding phase, I paid attention to the discursive positions of (non)agency and addressed these as the basic units of the raw data, collating them with codes denoting classes of (non) agency positions (Clarke and Braun, 2017). I initially coded for expressions of agency and then expanded to coding also non-agency, the expressed lack of agency, because the participants often spoke about e.g. *not* being able to understand or influence climate change. In practice, the smallest basic codable unit of analysis was a clause, a group of words consisting of a subject and a predicate. For example:

> I do what I can.

The position above would have been coded with "My own personal actions". In case the clause in which the position was constructed was within a longer sentence that had a super-ordinate structure adding something to the meaning of the clause, the unit of analysis was this longer sentence. For example:

> I do what I can, but I don't think my actions make any real difference.

The discursive position above would have been coded with "My individual actions don't matter in the big picture". The participants usually produced more than one sentence when crafting a particular position in relation to climate change and thus, several consecutive sentences could be coded with the same code. Below is an (invented) example that would have been coded with "My individual actions don't matter in the big picture".

> I do what I can, but I don't think my actions make any real difference. Anything I can do is just a drop in a bucket and I think I just keep doing things to soothe my guilty consciousness.

I coded the entire data set collating interview extracts relevant to each code. I used open coding, that is, I kept modifying the codes throughout the process (Maguire and Delahunt, 2017). Next, I moved on to search for themes. I grouped coded extracts into broader meaning patterns concerning human agency that seemed to share the same organizing core idea. In case I as the interviewer made a comment in the middle of an extract belonging to a certain agency theme, the extract was counted as two separate ones, either falling under the same theme or not, depending on how the participant proceeded in constructing human agency. In case I was merely encouraging the interviewee to continue with interjections such as "Yeah", thus not changing the trajectory of the talk, the extract was counted as one example of a particular theme. In some cases, a theme was constructed with repeated expressions that crafted similar (non)agentic positions and were thus coded with the same code. In some cases, one extract of a theme included several codes. Below is an example of an extract that represents one theme, but involves two different codes: "Individual as a part of a community doing something" and "People doing something":

> I think that the small actions of each individual are important. Because it goes on as this mass thing, if-. Exactly, if everyone does it, then it counts.

The extract represents the theme "Collective agency", where the core meaning was that individuals can do something together to fight climate change. Themes are thus patterns of meaning -ways of discussing human (non)agency- that consist of at least one, usually more discursive positions of human agency; hence, each theme involves one or more "codes".

I reviewed and modified the themes, proceeding to check whether they work in relation to each other, the data, and previous literature discussing agency-related notions. While writing the research report, I conducted one final rereading of the data. The analysis concluded with 351 data extracts categorized under 12 broader themes of agency.

The version of TA applied here is developed within the qualitative paradigm and not for use in the (post)positivist approaches; the validity of TA is not assessed by referring to intercoder reliability but by acknowledging the active role of the researcher (Clarke and Braun, 2017; Neuendorf, 2019). The validity of this analysis arises from openly discussing the analytical process and from referring back to previous studies to see if similar agency concepts had been already acknowledged elsewhere. The task of confirming whether or not the same codes and themes arise in different contexts with different participants is an important one to uptake in further research.

Results

The results consist of 12 broad themes of human agency in relation to climate change (Table 1). The themes are listed from highest to lowest frequency in this interview data. The abbreviation "CC" refers to climate change.

All participants constructed agency in relation to climate change with more than one theme during their interview and combined these themes in various ways. The themes presented in the Table fall under three wider theme groups that can be also understood as climate change discourses: (1) *Human concrete action in creating and solving the problem of climate change* (includes the themes of Collective, Individual, Limited, Causing, Ambivalent, External), (2) *Climate change is a complex concept and requires critical mental action* (Critical, Reflective), and (3) *Climate change influences us and our human agency* (Threatened, Experiential, Influenced, Benefitting).

As Table 1 shows, the most common theme was Collective (58 occurrences), followed by Individual (46), Critical (36), and Threatened (35).

The next sections provide a description and a data extract of each agency theme. There is no space to discuss the codes that are prevalent in each theme. Some extracts show the interplay of two or more codes while some, often because they are only a sample of a longer account, only demonstrate one code. The themes are presented in the same order as in the Table. The participants are referred to with their pseudonyms and the letter "H" refers to me, the interviewer. The extracts have been slightly edited to ensure participant anonymity and to enhance readability. Most interviews were conducted in English with non-native speakers, and occasional unidiomatic expressions are still present in the extracts as I have tried to remain faithful to the interviewee's own words.

Collective. The participants constructed people as able to mitigate climate change by collective action. In different variations of the theme, the participants either constructed their own actions as having some kind of social or cumulative impact, or discussed actions that humans as a collective have taken or could/should take. Often, this theme emerged as collective calls to action, as the speakers were underlining that collective action is important and needed to mitigate climate change.

In Joanne's example below, voting functions as a concrete example of an individual action with visible nation-level consequences.

> Joanne: And now of course the question is where do we invest. Do we invest on green energy or do we invest on the reopening of coal mines. These have significant consequences in all ways so that yeah, the decision makers and private persons in that sense. Who are we voting for to make decisions on these things? So everyone does have a small straw of responsibility here in terms of where we are going.

Table 1 Themes of climate change agency.

Main theme	Human agency is displayed as...	Primary codes (discursive positions) included	N
1. Collective	a collective effort of acting together and influencing others to mitigate climate change and its effects	- People doing something - We doing something - The individual as a part of a community doing something - Not all people can put equal effort	58
2. Individual	an individual's power and responsibility to mitigate climate change	- Individual people can influence - My own personal actions	46
3. Critical	critical and doubting of the various discourses and narratives about climate change circulating in the society	- CC narratives in the media/society are problematic - People are ignorant	36
4. Threatened	overpowered by climate change; what we do is just in order to survive	- CC will threaten all life dramatically - CC will destroy humans	35
5. Limited	lacking and restricted; humans are not able or willing to influence climate change	- Human agency cannot solve CC completely, things are beyond their capacity - Humans are not able to do what is needed - My personal agency is limited - People cannot control CC	34
6. Causing	the destroying force behind climate change	- We have created CC - The humanity has created it - Humans are one source of the influence on CC	32
7. Reflective	pondering and learning; seeing the phenomenon's complexity	- CC is something I/we must think, imagine, read, learn about - Being (or not) educated and wise - CC needs to be looked as a complex phenomenon in wider cultural, political, societal, biological contexts	31
8. Ambivalent	pointless or problematic individual actions, because the real power belongs to political and economic "others"	- My individual actions don't matter in the big picture - I don't know what and how to do - I am not doing what I should or I am doing what I shouldn't	29
9. Experiential	observing, sensing, and feeling climate change	- CC advocates feelings and experiences in me - I have (or have not) made personal observations of CC - CC shows and can be seen in the environment	18
10. External	detached from the individual, located in external actors such as governments or big corporations	- The decision makers, countries, and businesses can/should do something - Programs, science, organizations can/should act - Humans could/should do something - CC is a political, societal challenge	15
11. Influenced	facing the force of climate change, having to adapt	- CC challenges humans to think and act differently - CC influences us, e.g. our living conditions	14
12. Benefitting	somehow enhanced by CC	- CC is influencing (the local weather systems) positively - CC brings more work for me	3

Joanne's example begins with "we" (probably referring to her nation) facing the choice of investing in an environmentally friendly manner or not. "Decision makers" and "private persons" appear in a cut off sentence without an active verb, but presumably as potential agents. In the action of voting, it is "we" and "everyone" that is given "a small straw of responsibility"; this interesting metaphor creates the impression that an individual's possibilities for action are not very big or sturdy, but there is a moral obligation to use this chance and vote. This responsibility to act is constructed as influencing where we, the society, are going in the future in terms of energy use, not as a responsibility towards e.g. the nonhuman environment. Typical for most of the examples of Collective agency, the speaker did not construct a very concrete pathway from their own actions to the collective ones and from there to the impact on climate change. In only one example of this theme the speaker specified how their individual action has ripple effects in their close community, at the wider economic levels of society, and eventually on climate change. Yet, Joanne's extract is more specific in its suggested collective action than most other examples as it goes beyond statements of "we should do something about it".

Individual. The speakers constructed humans as potentially able to mitigate climate change by individual level actions. In some variations, individual people in general were positioned as able to influence, and in others, the participant talked about their own personal action possibilities. Many constructed a sphere where an individual's actions matter, and then displayed how they try to do their best within this area. These constructions resonate with Robison's (2019) observations on how people often draw a clear boundary around what is their own responsibility and what options are open to them. In this study, constructing such a personal "lot" often involved listing both climate change specific actions and generally environmentally friendly actions the participants have taken or could take. Such listings sometimes gave the impression that the interviewee was merely repeating actions they knew represent socially desirable, standard eco-friendly behavior instead of talking concretely about their own actions. The participants who did talk about their own concrete actions often toned down the attitude and persistence with which they act.

> Caroline: *Of course individual people also have a significant role*. I have calculated my own *carbon footprint* and those… There are these calculators with which one can calculate how big a carbon footprint one leaves. I had—I think *it was smaller than average*.
>
> H: Yeah.

> C: And then one thinks about… And actually I have also thought about my work, going to work from also that perspective. *I run, I don't use car or bus* or anything, so that… I'm sure that in some things I'm a terrible spender, but in this thing *I try to save nature, or I have always been like that*. So that it somehow… *In some things like these where one can so then one aims to make a difference*. So yes, people do have a very big difference in this, or the power.

Caroline's account starts from her statement underlining that *of course* individual people have agency in respect to climate change. Interestingly, also such participants who elsewhere in their interview doubted the impact of one person's actions (theme *Ambivalent*), had this theme appear in their interviews with this type of emphasis on an individual chances to play a role. Caroline's metaphor of personal actions is *the carbon footprint*—a common occurrence within this theme—and like many participants, she mentions her footprint is smaller than average. Running to work is not only constructed as a choice but as related to something she *has always been*, reflecting the common occurrence within this theme, where participants constructed their environmental actions as something they *are* or as their *lifestyle*. However, like Caroline who mentions that she is surely "a terrible spender" in some ways, the interviewees often downplayed their individual actions. Many of the dynamics discussed here, especially questions about climate actions as something that one is and as a lifestyle question, come close to studies on identity-related concepts such as *environmental identity* (Stapleton, 2015; Vesely et al., 2021; Walsh and Cordero, 2019).

Yet another discursive feature that was seen across other extracts in theme Individual is how Caroline constructs her personal actions as doing what one *can*. In many interviews, framing one's own sphere of agency with "doing what one can" did *not* seem to imply that the speaker in any absolute sense tries out all possible options to do what they humanly can. Rather, the phrase "doing what one can" translated as "doing what is not too time consuming or unpleasant" while implying that there are limits or restrictions to what a single person can do.

Critical. The participants constructed their own agency as that of a critical agent being able to spot, analyze, and criticize problematic climate change discourses, narratives, and understandings that somehow misrepresent climate change. Climate change was approached as a mediated phenomenon misunderstood by many people, excluding the speaker. This theme often served in climate change skeptical accounts, as the speaker constructed for him—or herself a superior critical position in relation to what were presented as dubious and exaggerating climate change discourses.

In Gary's account below, which is a part of a longer extract, climate change is connected with environmental extremist misbeliefs. Trying to debunk them becomes an attempt to show climate change does not exist as imagined by what he has previously called "average people".

> Gary: Look, also this fact of the cars that they are destroying the environment and… Diesel cars you know, I mean, Diesel cars are the devil blah-blah-blah or whatever. *Look at the numbers at the data*, I mean the quality of the air in the city for instance in this country that they have this war against this type of cars. It didn't change significantly when there were one kinds of the car around during the lockdown. But *this was not publicized that much*. These are things that should be… understood. You must believe that we do the worst possible things to the environment. But you know how many people, normal people they actually know that some kilometers beyond their feet is going on a nuclear reaction? The worst bomb we ever built, it's nothing compared to what is happening when you go into the mantle or down into the planet. They don't know that. They believe that they gathered the evidence that they will destroy the planet one day with this. No, we can destroy us.

This account presents Gary as a critical agent able to see through misinformation that is not transparent to "normal people". Typically of theme Critical, Gary vaguely refers to scientific evidence ("look at the numbers") in arguing that Diesel cars are not as big a polluter as people tend to think, but displays this evidence as something that has not been publicized much—thus, he has privileged access to information that "they", the ignorant others, do not. He mentions that in our culture, the norm is that you have to believe that humans do the worst kind of things to the environment, moving on to debunk this claim by explaining that the power of the earth roaming beneath our feet is much greater than the power of any bomb humans could build. Thus, climate change becomes connected with claims such as "Diesel cars destroy the environment" and "humans have the power to destroy the planet", and by disqualifying these claims, Gary is attempting to show that humans cannot have caused climate change by themselves and that most people are blinded by misunderstandings. As is reflected in Gary's example, this theme often likened taking climate change seriously with naive or emotionally driven environmentalism, resembling results from previous studies (Tollemache, 2019; Westcott, 2019).

Threatened. The interviewees constructed human agency as severely compromised and threatened by climate change. They acknowledged how climate change impacts wider ecosystems and sometimes recognized the differences in how people from various parts of the world are being exposed to it.

> Uri: Well, it certainly—what it means is that the earth is… is heading for a *disaster*, essentially. That if we don't… And I don't say- I don't have any answers on how to how to do this, but if you don't, *if we don't do things to mitigate climate change then I think that it—it's only gonna be more difficult to live in in our environment*. Vis-à-vis the—what's happening in Texas for instance.

Uri presents climate change first as a disastrous threat to all life in general and then to humans in particular. In this theme, it was common to point to the urgent need for humans to act to avoid even direr future consequences. Many mentioned current or recent natural catastrophes as examples of what is already taking place—Uri was referring to the weather conditions causing problems in Texas in the winter 2021. Like Uri's, almost all of the variations of the theme were also fairly human centric, and climate change was sometimes presented as a force pushing humans to the verge of extinction. The variations of the theme drew from common Apocalyptic stories and grammatically, used dramatic presence and future tense to construct a sense of proximate and ever-escalating, practically unsolvable threats. The hesitations present in Uri's example, such as a false start with "if we don't", followed by a downplay of his own authority in knowing what should be done, imply that such dramatic accounts of threatened human life are challenging to negotiate. Differing from the previous theme, in this one many speakers did not seem willing to present themselves as experts with definitive answers, but underlined the profound uncertainty of the situation.

Limited. The participants either constructed human agency as too weak to have caused climate change to begin with, or so lacking that humans will simply not be able to solve the problem. As shown in the example from Beth, an extract from a larger

account, "people" were often displayed as simply and categorically *not* able to do what climate change is requiring, as they are selfish, comfort-seeking, and consumption-oriented.

> Beth: Our culture is based on consumption and individualism and… It's really difficult for us to change that that we couldn't do all the things we want to do because of climate change… if you follow the conversation about when we—when they are trying to curb the gas consumption, cars, people are screaming to high heavens!

In Beth's example, it is our collective culture that rests on individualism and consumption; then again, it is difficult for "us", to a collective that also includes her, to accept not being able to do all things that we want to. She starts out by "we" but then changes to "they" in describing the attempt to reduce the gas consumption, which strikes protest. Her expression of people "screaming to high heavens" invokes an image of childlike selfishness. Within this theme, people were often depicted as so flawed in their character that any of the big collaborative movements needed to fight climate change would never be possible. In one variation of the theme in one of the interviews, this theme repeatedly occurred as a way to express that humans are too small and insignificant to have been able to cause climate change in the first place.

Reflective. The participants constructed human agency as thinking, learning, imagining, discussing, and reflecting on the complexity of climate change. The speakers explicitly displayed themselves as tackling the challenge of climate agency intellectually, talked about the global and differentiated influences of climate change, and/or described climate change as something humans need to face by cognitive activity.

> Ollie: What is really missing is *complexity thinking*. We really have to start thinking about the world not in terms of an equation with two variables, you know, supply and demand, but *we have to think a lot more broadly on many many things*, and I- this is completely missing in politics everywhere. And that's why *I think we need an emotional kick in the butt*. I think people like Greta Thunberg and also as I say good fiction, really good fiction books and shows, theater plays, have a real big role to play here, absolutely.

Ollie is asking for more complex thinking to replace the old, economically driven and reductionistic thinking. It is the unspecified "we" that needs this thinking, but the first person "I" is the one *thinking* humans need "an emotional kick". This metaphor represents an interesting bridge from the emotional realm into this theme that otherwise tends to highlight cognitive operations. Ollie positions Greta Thunberg along with various forms of culture as able to help people towards more complex thinking. Here he merely mentions books, but in other variations of theme Reflective elsewhere in his interview he, as many other participants, discussed the act of (solitary) reading as an important act to understand climate change better.

Causing. Human agency was underlined as having caused climate change or, in some cases, as having contributed to it. Sometimes the speaker included themselves in the collective responsible for creating climate change; sometimes, a detached entity such as "humanity" was displayed as responsible. In more climate change skeptical accounts, human agency was constructed as only one potential driver of climate change.

> Adam: So I guess I'm realizing now I'm sort of artificially separating myself from climate change which is perhaps not the correct thing to do, because *I am just as responsible for creating it as any other human on this planet*. So it does have an agency and it is, I guess, *primarily related to the agency of humans who modify and shape the natural environment in destructive ways*.

Adam's example shows him connecting his own individual agency with that of other humans and proceeding to construct a human collective as responsible for climate change. Discursively speaking, this example is a very soft and modest way of constructing human agency as having caused climate change; climate change is presented as "primarily related to the agency of humans". Moreover, people are not displayed directly involved in doing something that causes climate change, they are merely shaping the environment "in destructive ways". None of the examples of this theme problematized such displays of even distribution of responsibility to all humans in creating climate change. The construction of human agency was also fairly abstract: Mostly, no specific action patterns of humans influencing the climate were mentioned, and only a few participants specified by mentioning human "lifestyle" or humans' intrinsic "laziness" as contributing to climate change.

Ambivalent. The participants constructed their agency as conflicted. They displayed how their individual actions don't matter in the big picture unless "the big actors" (such as big countries or corporations) change their policies, too, despaired about what or how to do, or created a more psychological conflict. In the last case, they displayed themselves as not doing what they should do or as doing something they should not. Thus, this theme shows the participants grappling with the problem of *akrasia* -doing something against one's own judgment of what is the best thing to do (Steward, 1998).

> Diana: I am paralyzed by it, because I don't know what action will truly change anything… and what action is just throwing… a stone to space. Not even sea, but space, where it just gets lost and it's pointless.

Diana's example, part of a longer account classified as Ambivalent, illustrates the bleak manner some participants discussed their feeling that they don't know what actions would truly change anything. She uses the metaphor "throwing a stone to space" to describe how climate change action seems pointless—you don't see where your stone lands and whether it creates any effects. The speakers mentioned feeling guilty and anxious and described their actions as "purely egoistic" or "hypocritical". Some variations of the theme showed a division between actions such as getting to talk directly to the decision makers like Greta Thunberg does versus doing pointless "small things" to soothe one's consciousness. The theme resonates with previous results showing some people experience any meaningful climate change action as impossible in the face of big powers outside their control (Lertzman, 2019; Tollemache, 2019).

Experiential. The participants constructed themselves as experiencing, sensing, or feeling agents. The speakers explained having made personal observations of climate change in their local surroundings, discussed feelings evoked by climate change, or stated in a more detached manner that the impact of climate change can be e.g. "seen".

> Gary: *I can feel on my skin the… global warming*, let's say. I honestly thought it was mostly a theory of something regarding… white bears, but in the last years *I have been realizing* that it's not actually like that. I mean *I see it, I realized it*.

In this example, Gary is an experiencing agent sensing the increased temperatures. It is because of the sensory observations

and because he has "seen" climate change that he has been convinced it is not just a silly theory regarding polar bears. Like in Gary's example, sensing and observing the impacts of climate change was often constructed as a proof that the phenomenon does exist. In one case, this theme occurred when the speaker displayed their lack of direct personal observation as casting doubt on the existence of climate change. In the interviews of three participants, this theme emerged when they talked about feeling despair when being exposed to books or documentaries about climate change.

External. Human agency was constructed as something external to and detached from the speaker. A vague, unspecified agency was attributed to decision makers, countries, corporations, or science. Sometimes, humans in general, constructed as a distanced agent excluding the speaker, were presented as holding agency.

> Cat: Perhaps the biggest problem is exactly this that *our mechanisms to take some decisions in the long run are very very small*. Democracy—a good model, or how did Churchill put it, a shitty model but the best we have, but… *in many countries, something is done in cycles of four and six years*, and then comes the next lot and turns the ship to the other direction, so in the big picture, it is not moving forward… the development. And then, *business is the driver*, so that *the big vast financial actors, big businesses so…* Because *that is our driver all the time, the economic growth and… and business*, so… It does get a little bit overrun.

Cat's account shows a row of external agents: "our mechanisms", the political decision making systems, "the next lot" (of newly elected politicians), "business" and "economic growth". "The development" is not moving forward and climate change, hiding behind the noun "it", gets overrun. In this theme, the individual human or human collectives do not appear to have much agency, and the speaker is detached from the systems within which all action and power are located.

In some variations of this theme, in placing agency on science and technology, the speaker constructed climate change as a solvable and thus, not a serious problem. With its focus on external agents this theme resonates with some previous research showing the tendency to hope that agents outside the speaker would step up and commit to some visionary or collective action (Robison, 2019; Tollemache, 2019).

Influenced. The participants constructed human agency as influenced by climate change; it changes humans' living conditions or challenges them to act and think differently. These changes were not constructed as threatening human lives but as pushing people for transformations in how they organize their lives as individuals and communities.

> Adam: I don't know it's just sort of like an intervention. Like as if as if *humans are like these addicts to a particular way of living and being in the world* and climate change is like, you know, the intervention moment where *we have to think differently about the way we live our lives*.

The metaphor of "intervention" places humans as a collective hopelessly attached to their consumption-oriented ways of living, challenged by climate change, an external agent that comes to people's lives to ask them to rethink their lifestyles. The long history of anthropogenic climate change is reduced to an "intervention moment" asking the currently living people, including Adam, to think differently about their lifestyles. The account does not include any specifics as to what this change entails in practice. As the example of Adam hints with the metaphor of "intervention", this theme could have developed to the direction of discussing the deep mutual entanglements of humans and climate change. This never happened in this data, supporting the notion that people do not usually address the nonhuman environment in relational terms and that constructing human agency as emerging from entanglements with the nonhuman is a difficult task (Verlie, 2020; Zegers, 2019).

Benefitting. The participants constructed themselves as personally benefitting from climate change either because it makes their living conditions easier due to milder weather or gives them more work. The individual's increased agency was presented in a rather implicit manner.

> Larry: I don't mean it, but jokingly I say that my, you know, my work is in working with the effects of climate change, not preventing it, so. *More disasters, more work for me*. But that comes with a like sarcastic—that's not what I actually think.

Larry's example shows how the participants acknowledged that saying one has benefitted from climate change is perhaps socially undesirable, and framed their accounts as humor, used different hedging strategies, and/or nonverbal communication to underline that they know what they say might be unexpected. Larry's presentation of climate change as indirectly enhancing his agency is embedded within downplaying expressions such as "I don't mean it". Larry frames his statement of climate change bringing him more work as something that he "jokingly says" and as a remark he *might* make in some other context, but not as something he truly means to say in this interview. The theme points to the importance of recognizing that in ecological destruction, there are winners and losers, and formulating the (albeit fragile and temporary) winner position is a complex discursive task requiring face keeping work.

Discussion

This paper has discussed 12 broad themes of agency that the interviewees constructed with regards to climate change. Next, I will briefly discuss the themes in relation to previous literature, zoom in on Critical agency, and make some suggestions to climate communications.

The themes involve a rich variety of agencies that negotiate and reach beyond many predominant climate change discourses currently circulating within Western societies. With Individual agency, the participants put themselves in dialog with the notion of a self-reflective climate agent monitoring their carbon footprints (e.g. Siperstein, 2016). Yet, both Critical and Ambivalent agency themes included criticism on such emphasis on one individual's influence as unrealistic and guilt provoking. The apocalyptic climate change stories (e.g. Cole, 2021) were a resource for many examples of Threatened agency, but within Critical agency, such notions were problematized as too reductive and counterproductive. Moreover, the participants could not be classified in terms of what kind of themes emerged in their interview. Also seemingly incompatible themes could occur within the same interview; for example, the same participant could construct themselves as trying to take climate change mitigation actions (Individual), doubting the effectiveness of such actions in the big picture (Ambivalent), and adopt a critical position towards climate change as something not supported by mathematics (Critical). This resonates with the understanding that many people hold very contradictory feelings and thoughts about climate change (Hoggett, 2019).

Discursively speaking, many of the themes came across as quite vague in how human agency was constructed. Climate action was often discussed in terms of relatively generic, merely potential individual actions (Individual), meaningless and hopeless attempts to act (Ambivalence, Limited), or in terms of what is done somewhere else by someone else (External). The prevalence of Reflective and Critical themes suggests that climate change is often approached as a mediated phenomenon, known from the media and other sources, and requiring first and foremost thinking and other cognitive activities. Even if some of the interviewees live in areas where climate change has caused vast ecological disasters, their personal experience seemed to be translated more into detailed descriptions of what climate change threats look like than to motivated talk about adaptive and mitigating actions. I suggest, in alignment with previous papers, that it is important to continue fostering concrete, shared, collective imaginations about possible futures with attention to how an individual's thinking and experiences can be bridged with the broader collective level of action (Milkoreit, 2017; Monroe et al., 2019).

Furthermore, the human-centeredness of most agency themes points to the potential of drawing from more relational ontologies (Verlie, 2017, 2019a, 2019b, 2020, 2021) in enriching the ways people construct agency. While the themes were mostly not resonating with the idea that individual humans could rationally control climate change, they also did not include much alternatives to such human-centrism. Only Influenced agency hinted towards thinking where humans and climate change influence each other and humans need to address climate change from within this entanglement. Discourses acknowledging the potential of a more relationally attuned agency should be made more available to people as resources for constructing climate change agency.

The most common theme in this interview data was Collective, where humans were displayed as able and willing to do things as a "we". Fiskio (2012) has criticized the narrative that people need to face the catastrophe with a sense of purpose and community for romantization and utopian hopes. In the theme Collective observed here, the speakers did not talk much about the future but stayed in the here-and-now, and romantization or utopian hopes were not present in the accounts. The theme seems to counteract the hopelessness of individual actions present in Ambivalent agency and the emphasis on simple, individual actions in Individual agency, while constructing the meaning of one's individual actions in relation to bigger human collectives. This theme might come close to what Moser (2010) means with narratives that help people make sense of their actions within the wider social and ecological contexts while enabling them to construct a socially desirable identity. It also resonates with research emphasizing the importance of bridging one's individual thinking and actions with larger collective manifestations of agency that have a relevant impact on climate change (Bamberg et al., 2015; Jugert et al., 2016; Milkoreit, 2017; van Zomeren et al., 2013). Yet, such routes from the individual to the collective level seem to be difficult to construct. This interview data included only one concrete example of how one individual's specific action (refusing to drive their children to school but biking instead) has larger ripple effects all the way up to the level of fossil fuel economy and climate change.

Arguments against the existence of human-caused climate change were crafted within the themes Experiential, Critical, and Limited agency. Within Experiential agency, *not* having personal experience of the effects of climate change was constructed as crucial evidence against the existence of it. Some extracts of Limited agency underlined that humans are too small and insignificant to have caused climate change. Most displays of doubt and skepticism occurred within Critical agency and hence, were linked with displaying oneself as having critical skills to pinpoint the simplicity of prevailing societal discourses and the lacking understanding of other people. Doubting climate change was not associated with harboring conspiracy theories or with explicit doubt towards science (Jacques and Knox, 2016; Lewandowsky et al., 2013). Doubt was constructed in relation to supposedly narrow, exaggerated, or naïve narratives and beliefs held by other people. Scientific rhetoric and concepts were commonly employed in ways that failed to follow any remotely scientific logic. These findings are in alignment with much previous research underlining how climate change skepticism and denial are embedded within an attempt to appear scientific and rational (Bloomfield and Tillery, 2019; Jylhä, 2018; Sharman, 2014). Some examples of Critical agency drew from media representations of climate change as still a debated issue within climate science (Jylhä, 2018) and emphasized the speaker's media reading skills. These findings are also in alignment with Hamilton (2011) who argues that the dissemination of climate denialism has led many people to consider themselves well informed on the topic of climate change, even if they do not understand its basic ideas and seem to have no contact with the primary research literature.

I suggest that it might be fruitful to address people who have skeptical or denialist beliefs acknowledging their self-presentation as rationally and scientifically thinking individuals and allowing them to stay critical while leveraging this position to counter misconceptions. Furthermore, in Critical agency, no difference was made between climate change as a force proper versus as a phenomenon mediated by societal discourses, which enabled the speakers to use criticism of the discursive representations in counterarguing the existence of climate change per se. It might be important to support the audience's investments in critical agency by helping them to understand how to separate climate change as a scientifically proven phenomenon from societal and media disputes. It might be especially relevant to do this in ways that do not put too much pressure on the general conservative worldview and the social identity investments behind climate change denial (Jylhä and Hellmer, 2020; Jylhä et al., 2020; Kahan, 2010, 2015).

The qualitative nature of this study and the relatively small sample size limit the generalizability of the findings. Further work is needed to investigate whether similar agency themes would emerge in other contexts. The relatively high educational level of the participants presents a further limitation for generalizability. Further research could investigate how people from more varied educational backgrounds construct climate change agency. Yet another potential research topic would be to study how people respond to narratives written to emphasize a particular agency theme and whether these could be leveraged in nudging people towards climate aware actions.

This paper has demonstrated the discursive variability of agency constructions and drawn attention to some of the general themes and their discursive qualities that emerge in climate change conversations. More specifically, I have pointed out that many of the agency constructions come across as vague, external, or intellectualizing, thus perhaps reflecting emotional detachment from climate change (see e.g. Norgaard, 2011). This points to the need to continue fostering discourses and stories that feed the public imagination of practical ways of acting that also connect with and have ripple effects on larger community and social levels. Another aspect combining most of the agency constructions was their human-centeredness, illustrating that more relationally oriented thinking on human–nonhuman interrelatedness is needed to enrich discourses available to people figuring out their agencies in relation to climate change.

Different agency themes open and (partly) close different ways of seeing climate change and taking action to address it. Acknowledging the variety of climate change agencies can help in continuing to steer richer discussions on how to keep human agency transforming toward more collaborative, relationally oriented, and flexible forms needed to tackle the forthcoming, increasingly complex developments of the climate crisis.

Data availability

The datasets generated and analyzed during this study are not publicly available due to them being interview transcripts, the publication of which would severely compromise the anonymity and privacy of the individual participants. The anonymized interview transcripts are available from the corresponding author on reasonable request.

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Competing interests

The author declares no competing interests.

Ethical approval

Approval was obtained from the Ethics Committee of the Faculty of Arts and Philosophy, Ghent University. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Informed consent

Informed consent was obtained from all participants.

Additional information

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