

1 **Morals and climate decision-making: insights from social and behavioural**
2 **sciences**

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Morals and climate decision-making: insights from social and behavioural sciences

Abstract

Decisions about climate change are inherently moral. They require making moral judgements about important values and the desired state of the present and future world. Hence there are potential benefits in explaining climate action by integrating well-established and emerging knowledge on the role of morality in decision-making. Insights from the social and behavioural sciences can help ground climate change decisions in empirical understandings of how moral values and worldviews manifest in people and societies. Here, we provide an overview of progress in research on morals in the behavioural and social sciences, with an emphasis on empirical research. We highlight the role morals play in motivating and framing climate decisions; outline work describing morals as relational, situated, and dynamic; and review how uneven power dynamics between people and groups with multiple moralities shape climate decision-making. Effective and fair climate decisions require practical understandings of how morality manifests to shape decisions and action. To this end, we aim to better connect insights from social and behavioural scholarship on morality with real-world climate change decision-making.

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89 **1. Introduction**

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91

92 Decisions about climate change are inherently moral; the integrity of our planet and the
93 wellbeing of its inhabitants are at stake. Climate decision-making thus requires making moral
94 judgements about the sort of world each of us wants (Paavola and Adger, 2006; Byskov *et*
95 *al.*, 2019; Pelling and Garschagen, 2019). The gamut of moral climate change decisions is
96 wide and deep; virtually all decisions about the allocation and use of resources and labour
97 have an impact on the carbon cycle and ultimately on human-induced climate change.

98 Decisions on how to allocate resources in the face of climate change affect people and the
99 non-human world differentially, highlighting priorities and values at risk. As such, climate

100 decisions include all ‘decisions leading to actions that have consequences for climate change,
101 particularly through mitigation and adaptation’ (Orlove *et al.*, 2020, p. 2). Thus, climate
102 decisions span geographical, administrative and epistemological scales from individual
103 consumption, to national strategies, to binding global commitments.

104

105 The moral dimensions of climate change decisions are twofold. First, there are substantive
106 dilemmas about burdens of responsibility for mitigation and widely uneven climate impacts
107 on current and future generations. This normative dimension has traditionally been the remit
108 of climate ethics, that has mapped the contours of moral arguments about the distribution of
109 rights, duties, responsibilities, costs and consequences of reducing greenhouse gas emissions
110 (Müller, 2001; Roberts and Parks, 2006; Mattoo and Subramanian, 2012). These insights
111 further highlight moral imperatives to minimize risk and impacts of weather extremes on
112 marginalized and vulnerable populations (Pearce *et al.*, 2010; Watts *et al.*, 2015). Climate
113 ethics outlines principles of corrective or restorative justice (Grasso, Marco; Vladimirova,
114 2020; Robinson and Carlson, 2021), and demonstrate issues around the limits of
115 representation—how non-present human actors such as the powerless or yet un-born, or the
116 natural world are taken into account (Antadze, 2019; Tschakert, 2020). Climate ethics hence
117 offers theoretically guided, normative principles, such as the precautionary principle, to guide
118 decisions.

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120 Second, climate decisions require actors—including individuals, policymakers, societies and
121 higher governance bodies—to navigate everyday moral worldviews that shape the context,
122 character and limits of decision-making itself. Decisions take place within, and often seek to

123 change, existing moral norms, intuitions, and values. The social and behavioural sciences
124 empirically investigate how moral context, worldviews, and identities shape and constrain
125 how decision are made and enacted. They explore how decisions manifest in practice, and
126 whether they lead to enduring change. Thus, findings from across the social and behavioural
127 sciences can help adjudicate whether decisions are practical and feasible. They are
128 particularly important at the ‘messy middle’, where decisions made at higher levels—for
129 example, global policy—are translated and enacted on the ground (Goldberg, Gustafson and
130 van der Linden, 2020).

131

132 Alongside engagement with substantive moral issues, effective and fair climate decisions
133 require practical understanding of how morality manifests to shape decisions and action. Put
134 simply, ‘if we are to succeed in bending the moral arc of history toward climate justice – to
135 remake the world as it ought to be – we need to do a better job of working with the world as
136 it is’ (Storey, 2019, p. 39). Indeed, there are growing calls to better include the pragmatic
137 insights offered by empirical research in debates about climate ethics. Those who understand
138 climate ethics as ‘normative theorizing about climate change’ (Green and Brandstedt, 2020,
139 p. 1) are seeking to connect theory with methods that engage society (Bell, Swaffield and
140 Peeters, 2019), and to consider the normative implications that empirical research raises for
141 justice principles in climate ethics (Storey, 2019). Others identify a nascent and ‘as-of-yet
142 amorphous field of multidisciplinary climate ethics’ (Grasso and Markowitz, 2015, p. 473),
143 which builds on solid normative theorizing, but also incorporates psychological, sociological,
144 political and economic research (Markowitz, Grasso and Jamieson, 2015). Insights from
145 these fields contribute to real-world climate change decisions by ensuring that research is
146 meaningful and useful given institutional and political constraints.

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148 In this paper, we aim to contribute to an ongoing debate about how practical and empirical
149 social and behavioural sciences can inform multidisciplinary climate ethics (Bell, Swaffield
150 and Peeters, 2019; Green and Brandstedt, 2020) and better connect scholarship to real world
151 climate change decision-making (Markowitz, Grasso and Jamieson, 2015). In this review, we
152 synthesize progress in the social and behavioural sciences that is relevant—directly and
153 indirectly—across the gamut of climate change decisions. We include research directly aimed
154 at climate change, such as on morals as motivations to act, and research with indirect but
155 important implications for climate change decisions, including on decision context, and the
156 character of decision-making itself. We highlight recent insights, lessons, and gaps across

157 three themes: 1) the role of morals in motivating and framing climate decisions; 2) morals as
158 relational, situated, and dynamic, and; 3) the uneven power dynamics of multiple moralities.
159 Although these themes address moral framings and multiple moralities, they are distinct and
160 emerge from diverse and sometimes siloed fields of research. Thus, rather than all-
161 encompassing, or mutually exclusive, these themes serve as a heuristic for organizing key
162 insights. The approaches in the three main sections address the topics differently at different
163 scales. First, social and behavioural insights into motivations and framings examine processes
164 by individuals, embedded in social contexts. The second theme examines moralities as
165 relational, culturally-specific and embedded in societal dynamics and institutions. The third
166 theme involves critique of moral framings in governance and focuses on processes of
167 eliciting and deliberating between moralities at higher policy and agenda-setting scales.

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169 **2. Social and behavioural science insights**

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172 **2.1 The role of morals in motivating and framing climate decisions**

173

174 Morals may motivate and constrain climate decisions. A growing collection of empirical
175 work on moral foundations, moral motivations and framing offers key insights for climate
176 decisions. For instance, it is well established that people who perceive climate change to be a
177 moral issue are more concerned about it (Grasso and Markowitz, 2015). There is, in addition,
178 good evidence that public discourse in many world regions commonly articulates the pros
179 and cons of climate change policies in moral terms (Adger, Butler and Walker-Springett,
180 2017). Psychologists highlight the connection between people’s moral stances and attitudes
181 to climate change (Wolsko, Ariceaga and Seiden, 2016) and show how the desire to maintain
182 a group’s moral standing extends to action on climate change (Bain and Bongiorno, 2020).
183 As such, there is considerable evidence that—rather than narrow economic arguments—
184 appeals to moral principles resonate more deeply and lead to better outcomes on climate
185 change action (Corner and Randall, 2011; Bain and Bongiorno, 2020).

186

187 Moral foundations theory, which has its origins in moral psychology, posits that people are
188 primed to operate within a moral frame. People hold sets of distinct moral cognitive
189 resources, termed moral foundations. These foundations include combinations of care and
190 harm, fairness and cheating, loyalty and betrayal, authority and subversion, and sanctity and
191 degradation (Haidt, 2012; Graham *et al.*, 2013). The combination and weight placed on a

192 given moral foundation by an individual or society is based on culturally and historically
193 specific institutions and technologies (Graham *et al.*, 2011). For many indigenous peoples,
194 for example, the maintenance of moral bonds of trust and reciprocity have been shown to be
195 essential foundations of climate justice (Whyte, 2020). Moral foundations, through intuitions,
196 are important in shaping people’s reactions, attitudes, and behaviour to climate change. For
197 instance, moral values of compassion, fairness, and to a lesser extent, purity, are positive
198 predictors of willingness to act on climate change in a study of lay public in the US
199 (Dickinson *et al.*, 2016). In contrast, in Australia, the moral imperative to maintain status quo
200 is linked to climate scepticism (Rossen, Dunlop and Lawrence, 2015).

201

202 There is growing evidence that people frame issues, including climate change, using specific
203 moral foundations. Within a given society, ones’ moral foundations thus hold sway over both
204 private and collective actions. For instance, some moral foundations stress the maintenance
205 of social order and economic liberty (these often align with climate denialism) (Rossen,
206 Dunlop and Lawrence, 2015), while others prioritise the moral imperative to address climate
207 change, based on empathy and compassion for current and future affected peoples and
208 ecosystems (Feinberg and Willer, 2013; Brown *et al.*, 2019).

209

210 In addition, people draw on different moral foundations depending on the type of climate
211 decision at hand. Certain frames resonate with different policy interventions, and different
212 moral publics; ‘the presence, absence, and even dominance of different moral framings have
213 significant implications for the governance of adaptation’ to climate risks (Adger, Butler and
214 Walker-Springett, 2017, p. 385). For example, when discussing adaptation policy choices
215 people emphasize moral arguments about needs and ability to cope, but emphasize burden-
216 sharing when discussing mitigation (Klinsky, Dowlatabadi and Mcdaniels, 2012). In the UK,
217 research has shown that when evaluating potential climate change adaptation options, people
218 emphasize both moral concerns about individual vulnerability (solidarity, protection from
219 harm, and fairness in burdens), and ‘issues of responsibility, of respect for and trust in
220 authorities, and of doing the right thing by the country or for nature (sanctity, system
221 preservation, and patriotism)’ (Adger, Butler and Walker-Springett, 2017, p. 383).

222

223 Given the connection between moral foundations, motivations and types of climate decisions,
224 how decisions are framed matters for legitimacy, individual behaviour and belief change. The
225 moral framing of a decision shapes outcomes for people who support and advocate decisions

226 (e.g., political groups), or make them (e.g., consumption choices). When people perceive
227 their attitudes to be moral, they are more likely to act on them. For some, re-labelling
228 attitudes and decisions in broad moral terms might help motivate and strengthen action
229 (Luttrell *et al.*, 2016). Research suggests that people who link the harmful consequences of
230 climate change with people and things that they value (termed ‘objects of care’), have
231 stronger responses to climate change, which promotes supports for climate change policy
232 (Wang *et al.*, 2018; Leviston and Walker, 2020). As such, framing climate change problems
233 and impacts in ways that emphasize close ‘objects of care’ directly connected to individuals
234 may help overcome moral disengagement with climate change (Leviston and Walker,
235 2020). Emotions and empathy, including care, are the foundations of ‘moral judgments and
236 principles that guide action’ (Jax *et al.*, 2018, p. 23; see also McCaffree, 2019). Framing
237 climate decisions as part of cultivating empathy and care thus may generate the moral
238 impetus for action by ‘embed[ding] the environment and pro-environmental behaviour in
239 place-oriented norms and institutions’ (Brown *et al.*, 2019, p. 16).

240

241 Reframing climate change decisions to align with an audience’s moral foundations is also a
242 promising avenue for climate change decision-making. Research in psychology and climate
243 communication suggests that climate decisions that are communicated in ways that align with
244 people’s moral foundations shift behaviours, including when messages go against people’s
245 political beliefs. For example, framings emphasize the way individuals treat one another,
246 including fairness versus cheating and care versus harm, can intensify the environmentalism
247 of people no matter their pre-existing environmental attitudes (Milfont, Davies and Wilson,
248 2019). Studies have found that moral reframing can change political groups’ pro-
249 environmental behaviour (Feinberg and Willer, 2013; Sweetman and Whitmarsh, 2016),
250 recycling habits (Kidwell, Farmer and Hardesty, 2013), and climate change beliefs (Wolsko,
251 Ariceaga and Seiden, 2016). Appealing to moral foundations associated with right-wing
252 political leanings (including loyalty, authority, and sanctity) offers an avenue for making
253 climate change morally relevant to a broader portion of society (Vainio and Makiniemi,
254 2016; Storey, 2019).

255

256 Research on moral foundations and framing has accelerated and is opening up a number of
257 research gaps and directions of particular relevance to climate change decision-making. First,
258 there is only limited evidence on ‘which types of messages resonate in light of motivations
259 and particular prior beliefs, values and identities’ (Druckman and McGrath, 2019, p. 117).

260 Further research on how to effectively frame or translate climate change decisions to speak to
261 more traditional and conservative moral worldviews, could help provide tools for diverse
262 groups (from activists, and community leaders, to policymakers) to better communicate and
263 encourage change. In concert, we need research on whether and how moral values motivate
264 consistent moral behaviour and what internal and external barriers shape this (Nielsen and
265 Hofmann, 2021). Finally, much work on moral motivations extends from moral psychology
266 and moral neuroscience. Integrating this work into broader social sciences studies of moral
267 identity and worldviews could provide novel insights for climate decision-making (Stets and
268 Carter, 2012; Shadnam, 2020). The following section explores this contextual, relational view
269 of morals in more detail.

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272 **2.2 Morals as relational, situated, and dynamic**

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275 A second key thread of research describes moral worldviews as relational and contextual.
276 Broadly, research in this vein charts the ways that moral and ethical practices bound climate
277 change decisions across all areas. A recent resurgence of interest in morality in sociology
278 (Stets and Carter, 2012; Bargheer and Wilson, 2018; Bykov, 2019), anthropology (Mattingly
279 and Throop, 2018), and geography (Barnett, 2013; Olson, 2015b, 2018) provides a number of
280 insights relevant to climate decisions. These disciplines understand morality as culturally
281 specific, embedded and embodied in the skills, habits, and institutions of daily life, and
282 reinforced through practice (Barnett, 2013, p. 153). They examine how moral judgements,
283 norms, and emotions manifest in everyday life (Cresswell, 2007; Hitlin and Vaisey, 2013;
284 Olson, 2015b; Appel, 2019).

285

286 Insights on the socially embedded nature of morality emphasize that moralities and
287 institutions are co-constituted. For example, sociologists link inequalities in societies with
288 socialized patterns of moral judgements; ‘morality binds societies together, forming the core
289 of what it means to be part of a shared culture’ (Hitlin and Harkness, 2017, p. 5). People’s
290 moral (or normative) worldviews on climate change mirror their position within class
291 structures. For example, in Belgium, views on whether climate change can be solved through
292 everyone cooperating (egalitarian), individuals acting responsibly (entrepreneurial), by
293 governments and institutions (institutional) or as ultimately uncontrollable (fatalistic), map

294 both to moral worldviews about other issues and onto social class (in this case defined as
295 financial and cultural capital) (De Keere, 2020).

296

297 Research on the connection between moral identity and self-worth points to the potential
298 dangers of climate decisions (particularly about consumption) becoming overly and narrowly
299 moralized. A relational approach to morals suggests that ‘moral views [are] simultaneously
300 status markers and attempts to achieve self-worth’ (De Keere, 2020). Work in environmental
301 sociology highlights how friendships and families transmit ecological values in ways that
302 bolster or morally excuse individuals from pursuing sustainable practices (Jamieson, 2020).
303 Thus, conditions and relationships play a role in producing morality; the context and social
304 relations of a decision-maker (be they individual consumers or policymakers) will shape how
305 they judge what is moral or not. Thus, where and how climate-decisions are made, and who
306 the subjects are, will matter for how moral judgements ensue, and will thus shape decisions.
307 For example, strong practice-based identities around cycling, veganism (Kurz *et al.*, 2020), or
308 producing zero waste (Bolderdijk, Brouwer and Cornelissen, 2018) may actually block
309 broader societal shifts to sustainable practices because the ‘behaviour of “do-gooders” could
310 be interpreted as a threat to onlookers’ moral self-concept’ (Kurz *et al.*, 2020, p. 89). Rather
311 than being encouraging, such “moralized minority practice identities” may stop people taking
312 up sustainable practices (Kurz *et al.*, 2020). Thus, organizations and governments seeking to
313 encourage climate friendly practices, could ‘look to offer easy ways for people to experiment
314 with a practice without having to first claim (or grapple with) an associated moralized
315 identity’—for instance by advocating meat-free Mondays rather than becoming vegan (Kurz
316 *et al.*, 2020, p. 97).

317

318 Moral worldviews and values are entwined with systems of production, consumption and
319 markets across scales. Moral economy research provides a framework for understanding how
320 markets are constituted and continually negotiated through moral ideas and practices across
321 multiple economic scales, from micro (consumer’s lay normativity or moral reasoning), and
322 meso (collective customs, discourses, and institutions through which groups moralize the
323 market) to macro (state regulation of the economy) (Wheeler, 2019). This multiscale analysis
324 of how markets and moralities are co-constituted (e.g., Zelizer, 2011) provides important
325 ways to understand the solution space within moral economies of consumption and
326 production. For climate decisions involving consumption (for instance, of energy or food),
327 this framework offers a way to deepen an understanding of ‘why people choose to consume

328 as they do and the values important to them’ (Wheeler, 2019, p. 277). Climate decisions
329 seeking to change consumption and production may attend to different points of leverage
330 across these scales. For instance, recent anthropological studies emphasize how energy
331 consumption, use and production, including fossil fuels and renewables are part of ‘deeply
332 held ethical worlds’ (Appel, 2019, p. 188). Relegating CO₂ intensive industries as blanket
333 ‘bad’ or immoral misses the ‘rich ethical worlds that accrete around carbon-intensive energy
334 sources’ (Appel, 2019, p. 182). Recognizing these ethical worlds as legitimate—and as a
335 source of friction against climate transformations—may be a step towards productive
336 discussion.

337

338 Finally, research is beginning to explore how uncertainty and the prospects of irreversible
339 loss create new types of moral judgements. Climate change creates unfamiliar situations—
340 climate shocks, climate change-related disasters, and uncertainty (Crosweller and Tschakert,
341 2020)—and new experiences of grief wrought by ecological loss (Barnett *et al.*, 2016;
342 Tschakert *et al.*, 2017; Cunsolo and Ellis, 2018). Climate change decision-makers at all scales
343 will increasingly make decisions in and about new and uncertain situations. Sociological
344 studies have shown that alongside moral identity (Stets and Carter, 2012; Shadnam, 2020),
345 social relationships and changes in situations shape moral judgements and behaviour (Luft,
346 2020). When faced with unfamiliar situations, people do not revert to the unconscious moral
347 intuitions used in normal day-to-day situations. Instead, ‘what we believe to be good and bad
348 gets a little fuzzier when we find ourselves in unfamiliar territory, and so we reconsider our
349 relationships, and who and what truly matters’ (Luft, 2020, p. 2). This insight suggests that
350 moral foundations (section 2.1) may be more dynamic in the face of unfamiliar decisions.

351

352 Geographers emphasize that increasing urgency of action on climate change can serve to
353 limit moral choices. As Olson argues ‘urgency is not just a variable, but actually produces the
354 conditions for morality’ (Olson, 2015a, p. 519). For Olson, ‘urgency delimits human agency,
355 such that by the time we choose to undertake any particular action on moral grounds, we
356 assume it to be the only choice we have’ (ibid). Climate decisions are increasingly made in
357 urgent situations; a critical research gap is understanding how this urgency delimits moral
358 possibilities. Further research is warranted on how moral judgements might change
359 depending on the context, including urgency, who they are about, and who makes them. The
360 mode of decision-making also has an important influence on how morals might or might not
361 be considered, and the extent to which they might be implicit or explicit.

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2.3 Power dynamics of multiple moralities

Understanding how climate change decisions manifest in practice is important to ensure climate decisions do not produce perverse outcomes, and that future decisions are more equitable and effective. Environmental governance research has shown how interventions that aim to be neutral, apolitical, or merely technical, are implicitly moral (Li, 2007; Blythe *et al.*, 2018; Nightingale *et al.*, 2020) and has emphasized the power that these implicit moral framings have in climate governance (Morrison *et al.*, 2017). Scholars have identified a narrow set of epistemological perspectives dominant in global climate change discourse (Castree *et al.*, 2014), the risks that arise from apolitical framings of environmental change ‘problems’ and ‘solutions’ (Blythe *et al.*, 2018), and growing mistrust of prevailing climate change framings among communities in the Global South (Mahony, 2014; Miguel, Mahony and Monteiro, 2019). There are, in effect, contested meanings in climate change policy discourse and decision-making, whereby seemingly apolitical global climate knowledge is in fact ‘shaped by histories of exploration and colonialism, [... and] messy processes of linking scientific knowledge to decision-making within different polities’ (Mahony and Hulme, 2018, p. 395). By extension, what counts as worth knowing, as a viable solution to climate change, and who and what counts as a moral subject (e.g., whose losses are considered when making decisions) are embroiled in complex power relations across scales from individuals to global negotiations (Castree *et al.*, 2014; Tschakert *et al.*, 2017, p. 10).

386 Significant injustices are wrought by market-based tools and frameworks available and used
387 in climate decisions and policies. As such, research in this area charts the boundaries of a
388 pragmatic and fair climate solution space. Much critical discussion in environmental
389 governance currently falls under the rubric of ‘environmentality’—building on Foucault’s
390 original concept of ‘governmentality’—referring to the subtle ways that environmental
391 behaviour is regulated through the development of new subjectivities, or new environmental
392 values and moralities (Agrawal, 2005). There are a variety of environmentalities (Fletcher,
393 2017; Asiyanbi, Ogar and Akintoye, 2019; Fletcher and Cortes-Vazquez, 2020), including the
394 ways that local communities resist or adapt to new forms of environmental governance
395 (Morrison *et al.*, 2019). For instance, empirical work has critiqued the market-based focus of
396 many climate tools and conceptual frameworks, such as REDD+, ecological modernization

397 and carbon trading and offsetting (Knox-Hayes, 2015; Watt, 2018; Song *et al.*, 2021),
398 resonating with literature that explicitly critiques their morality (Caney, 2010). Knox-Hayes
399 (2015), for example, shows how neoliberal approaches to environmental governance
400 (including climate) ultimately reduce all values—including those of morality—to exchange
401 value, ignoring their spatial and temporal characteristics.

402

403 Alongside the opportunities moral framing holds for climate decisions (section 2.1),
404 navigating multiple moral framings also holds challenges for governance. Multiple publics
405 generate multiple moralities; it is often not possible to reconcile different frames. For
406 instance, global mitigation actions, led by wealthier nations and privileged groups, can
407 violate indigenous values of consent, trust, accountability, and reciprocity (Whyte, 2020).
408 Indeed, pursuing a unitary ‘public morality’ risks obscuring diversity, and can be used to
409 glibly rationalise certain climate policy choices (Hulme, 2020). Rather, because moral frames
410 vary, ‘public morality’ must primarily be a procedural rather than substantive concept, where
411 multiple moral publics are accounted for by ensuring the articulation of diverse values and
412 interests in climate policy (Asen, 2003; Lane and Morrison, 2006).

413

414 This emphasis on multiple rationalities has highlighted the interactions between
415 environmental and climate governance strategies and the subjects of those strategies (e.g.
416 McGregor *et al.*, 2015; Malier, 2019), and has helped to investigate and interpret the gaps
417 between the visions of climate decision-makers and the implementation of decisions on the
418 ground (Collins, 2020; Fletcher and Cortes-Vazquez, 2020). In their discussion of REDD+ in
419 Nigeria, for example, Asiyanbi *et al.*, (2019) describe how it aimed to normalise particular
420 moral values about forest protection but were countered by local discourses of morality
421 centred around entitlements to forests. Others have shown how framings of climate solutions,
422 for instance individualising moral narratives that situate climate change as the responsibility
423 of individuals and consumer behaviour, deliberately shift the burden of response from states
424 to citizens and thus justify minimal government action (Blythe *et al.*, 2018; Jamieson, 2020).

425

426 The mode of decision-making has an important influence on how morals might or might not
427 be considered, and the extent to which they might be implicit or explicit. Given people’s
428 diverse moralities, climate decision-making procedures should not aim to reach a certain
429 moral ‘truth’ or underlying principle, but rather to encourage and facilitate democracy and
430 incorporate multiple forms of knowledge and truth (Rorty, 1989; Hulme, 2020; Hulme *et al.*,

431 2020). Deliberative decision-making invites consideration of plural moralities, and has been
432 used to address controversial issues hitherto deeply morally divisive (Dryzek and Niemeyer,
433 2019). A Citizen’s Assembly has recently been convened in UK to advise the government on
434 how it should develop policy to meet its (legally binding) zero net emissions by 2050 target
435 (<https://www.climateassembly.uk>). Other opportunities to incorporate morals into climate
436 decision-making at different scales include participatory scenarios and futuring exercises
437 (O’Neill *et al.*, 2014)—which have long been used by the private sector, and are becoming
438 increasingly popular in public spherea—alongside the use of morally grounded tools to guide
439 transformation processes (Grasso and Tàbara, 2019).

440

441 Framings of problems and solutions can shut down parts of the ‘solution space’ for decision-
442 makers, namely what is politically feasible if a certain approach is outside a frame. For
443 example, an analysis of press releases from organizations across the United States found that
444 climate change was predominantly positioned as best handled through the expertise of
445 scientific, political and economic institutions (Wetts, 2019, p. 25). This post-political framing
446 that ‘neutralizes social and political power dynamics’ (Wetts, 2019, p. 1) can even dominated
447 the rhetoric of advocacy organizations. These findings highlight the implications of framing
448 beyond targeting and aligning to individual moral foundations (section 2.1); moral frames
449 may limit decision-maker’s ability to interrogate interlinked causes of climate issues, and
450 thereby narrow the range of possible solutions. For instance, leaders who are able to expand
451 their remit of acceptable approaches to governing to include ethical elements like compassion
452 and care, will be more successful in navigating transformation after disaster (Crosweller and
453 Tschakert, 2020). Understanding the factors that impede decision-makers’ abilities to act on
454 their moral duties to constituents, and how framings of climate change at higher governance
455 scale limit climate change options are important areas of future research.

456

457 Empirical explorations of the gaps between intention and outcome in climate governance
458 suggest that static typologies for climate change decision-making downplay the complexity
459 of lived moral values and the power struggles of whose perspectives matter (Tschakert *et al.*,
460 2017). Uncovering these implicit moral framings within climate change governance can thus
461 help cultivate new, more socially and ecologically equitable forms of climate governance
462 (Asiyanbi, Ogar and Akintoye, 2019). Such approaches include placing values and normative
463 commitments from diverse backgrounds at the centre of climate change analysis and action
464 (Castree *et al.*, 2014; Nightingale *et al.*, 2020), alongside a relational approach that allows

465 local, dynamic values to be incorporated into climate decision-making (Tschakert *et al.*,
466 2017). In sum, the morality of climate decisions must be openly discussed and form part of
467 the decision-making process itself.

468

469

470 **3. Conclusion**

471

472 Climate decisions concern many aspects of everyday life, and many moral junctures. Hulme
473 argues that ‘wise governance of climate... emerges best when rooted in larger and thicker
474 stories about human purpose, identity, duty, and responsibility’ (Hulme, 2020, p. 311). We
475 contend that morality insights from social and behavioural sciences are key ‘thickening’
476 ingredients for climate change decision-makers. In this review, we have highlighted the role
477 morals play in framing and motivating climate decisions, explored findings about morals as
478 relational, situated, and dynamic, and reviewed how uneven power dynamics of multiple
479 moralities shape climate decision-making. Our aim is to encourage climate decision-makers,
480 and climate scholars broadly, to engage more closely with emerging insights from this
481 scholarship. More broadly, this review serves as a first step to bringing sometimes
482 inaccessible theoretical debates into conversation with what is possible and pragmatic given
483 the social nature of climate change decision-making (Markowitz, Grasso and Jamieson,
484 2015). This effort to synthesise insights relevant to a cohering—but nebulous—body of work
485 in climate morality (Grasso and Markowitz, 2015) has inevitably skimmed over recent and
486 relevant work. However, the studies gathered here serve to orient those engaged with climate
487 decision-making and behaviour change, those working on the normative dimensions of
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