# Individualism, Structuralism, and Climate Change

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1. Introduction

Scholars and activists working on climate change often distinguish between "individual" and "structural" approaches to decarbonization. The former concern behaviors and consumption choices individual citizens can make to reduce their "personal carbon footprint" (e.g., eating less meat). The latter concern institutions that shape collective action, focusing instead on state and national laws, industrial policies, and international treaties. While the distinction between individualism and structuralism—the latter of which we take to include "institutional", "systemic", and "collectivist" approaches—is intuitive and ubiquitous, the two approaches are often portrayed as oppositional, as if one or the other is the superior route to decarbonization.

We argue instead for a more symbiotic conception of structural and individual reform.[1,2,3,4,5,6] For every structural reform to prioritize, there are certain individual reforms to prioritize *because* they contribute to that structural reform. And for each individual reform to prioritize, there are particular structural reforms to put in place because they enable individuals to make the prescribed behavioral changes. A symbiotic conception of structural and individual reform ultimately promotes a "both/and" approach to meeting the climate crisis. Instead of debating whether to focus *either* on lifestyle and consumer change *or* corporate and policy change, advocates should instead think in terms of "both/and" packages of changes. These will identify which *specific* individual-level changes in lifestyle, consumption, and activism best complement those *specific* structural transformations to economies and political systems that will combat climate change, and vice versa. Individuals and structures are interdependent and mutually supporting; strategic changes to both are necessary.

A helpful metaphor for thinking about this interrelation is the famous duck-rabbit illusion.
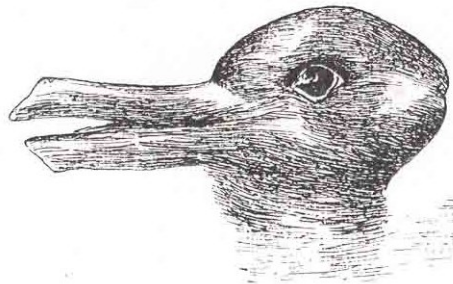
People see either a duck or a rabbit but not both at the same time; bringing one to attention inevitably forces the other into the background. But those features of the picture relegated to background remain, and remain essential to its composition. While we can only see the duck or the rabbit at a single time, the image itself is a product of the relations between all of its elements, regardless of which ones we attend to.

Likewise, while different members of the climate community focus on how different elements of society affect the climate, it is as fruitless to debate the primacy of individuals or structures as it is to debate whether the image is *really* a duck or a rabbit. Consequently, the most effective strategies for change will target *both*, and we thus call for research identifying both/and packages of structurally-oriented and individually-oriented interventions that have the greatest potential to maximize decarbonizing outcomes.

2. Individualism and Structuralism in Climate Politics and Activism

The dispute between individualists and structuralists is not a single disagreement but a family of thematically related debates. These include social scientific debates about the relative influence of individual agency versus structural factors in driving historical change,[7] political debates pitting libertarians and liberal individualists against socialists and communitarians,[8,9] and methodological debates about suitable explanations of social behavior.[10,11,12,13] Concepts and assumptions from these literatures inform two long-standing streams of research and activism on environmental protection, sustainability, and decarbonization.

"Individualism" is perhaps most recognizable as a founding ethos of the modern environmental movement, as captured by an anti-pollution Earth Day poster from 1970:
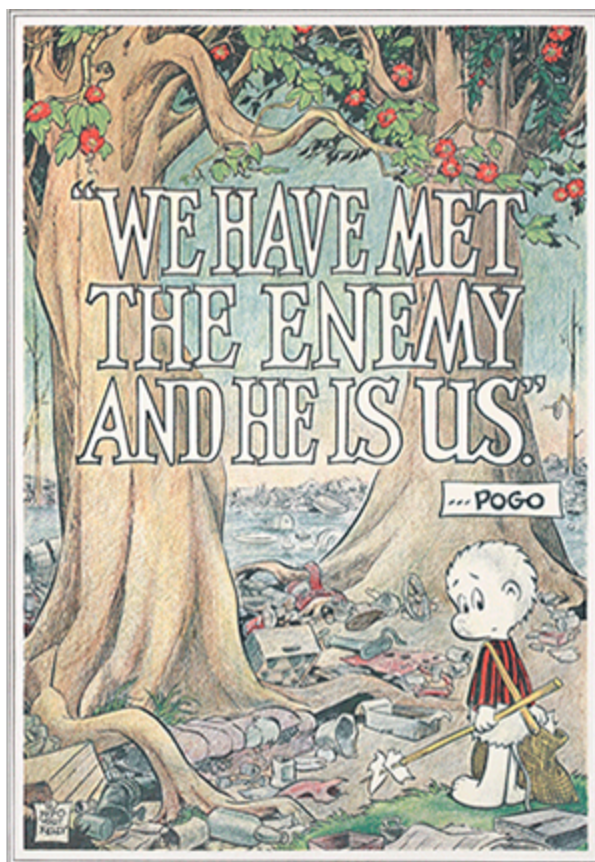
It suggests that wasteful lifestyle choices are the cause of environmental degradation, and implies a solution: individuals can be better personal stewards of the earth, by recycling, avoiding littering, etc.

Several influential lines of research which are commonly construed as individualist aim to promote stewardship of this kind as a remedy for climate change. One aims to identify drivers of pro-climate action by isolating key variables within individuals, such as their beliefs about climate change,[14] political attitudes,[15] personality traits,[16] and moral frameworks.[17] A complementary literature measures the aggregative effects of the personal choices that these variables are thought to explain. For example, Wynes and Nicholas[18] ranked 148 lifestyle choices to determine the most impactful ways to reduce one's personal "carbon footprint." Their analysis suggests that the four most impactful things individuals can do is have one fewer child, live car-free, fly less, and adopt a plant-based diet. A set of philosophical questions—also commonly construed as individualist— focus on whether people are morally obliged to adopt such practices.[19,20,21,22] Other philosophers have examined environmental morality through the lens of virtues and vices: Jamieson[23] argues that individuals must cultivate virtues like humility, mindfulness, and temperance in the era of anthropogenic climate change, while Hourdequin[20] considers moral hypocrisy by asking whether one can be genuinely concerned about climate change while driving an inefficient car for pleasure.

Research commonly construed as "structuralist" often holds these individual-difference variables constant while aiming to identify drivers of climate-related outcomes exogenous to individuals, such as government type,[24] industrial arrangements,[25] policy design and costs,[26] cues

from political elites,[27] and regional wealth.[28] Interventions designed to create changes in these domains are broadly aimed at manipulating institutions, understood as the "rules of the road" that shape individuals' decisions and behaviors.[29] The idea that climate change is a collective action problem, such that international treaties are required to combat it, is similarly structuralist in spirit, as are calls for ending global capitalism or limiting population growth. Proponents hold that these proposals address the social structures within which individual agency is exercised. Explicit invocations of structuralism, however, often manifest as dismissals of the individualist ethos, for example, by pointing out that concepts like "litterbug" and "personal carbon footprint" were created by industrial polluters. These explicit invocations are found both in academic research[30,31,32,33] as well as in popular essays whose titles highlight their antagonism, such as "You Can't Save the Climate by Going Vegan"[34] and "I Work in the Environmental Movement. I Don't Care if You Recycle."[35]

3. Oppositional Thinking

There are several problems with thinking of these streams of research as oppositional.

3.1 The Duck-Rabbit Problem of Social Behavior

Consider a few concrete cases:

E-Scooters: Italy is now awarding 500€ grants to city-dwellers who purchase bicycles or e-scooters. Is this a structuralist reform, because it is a nationwide public policy, or is this an individualist reform, because it aims to encourage individual citizens to reduce their carbon footprint by reducing their personal use of automobiles?

Phone banking: You volunteer with an organization to make phone calls to persuade voters in your town to vote for political representatives who support a "Green New Deal." Is phone-banking an individualist reform, because individuals try to persuade other individuals one-by-one? Or is phone-banking a structuralist reform, part of a collective action movement seeking to change political behavior (e.g. voting for a policy to fundamentally restructure the American economy)?

Solar Panels: Choices made by homeowners to install solar panels shape and are shaped by their neighbors' choices.[36] Peer pressure is demonstrably powerful.[37] Is a county program publicizing local solar installations in order to increase uptake of residential rooftop solar an individualist reform, because it targets people as consumers, or a structuralist reform, because it motivates action by changing their perceptions of their social world?

COVID-19: The economic slowdown caused by the coronavirus pandemic is on track to reduce global emission between an estimated 2% to 7% in 2020 as compared to 2019.[38] This would be the largest single year drop off in modern history. Is this a vindication of individualism, because it demonstrates the enormous changes people can make if they choose to? Or is it a vindication of structuralism, because these individual changes resulted

from a profound "shock to the system" and emergency, top-down, state-based policy changes?

We take these to be rhetorical questions, analogous to "is it a duck or a rabbit?" They show how *the very same phenomenon* can be plausibly interpreted as vindicating either individualism or structuralism. Efforts to create social change can be construed primarily in terms of individuals' traits, attitudes, and habits or primarily in terms of shared institutions, laws, and economies. As with the duck-rabbit, it is difficult to "see" both at the same time. The source of this difficulty, too, is in us. It reflects the limitations of our current conceptual tools.

3.2 Theoretical Generalities and Empirical Particulars

Oppositional thinking about individuals and social structures takes many forms, including the ideas that individual consumer choices cannot make a material difference to atmospheric GHG concentrations; that asking ordinary people to make sacrifices to reduce their carbon footprint unjustly puts the onus on victims to solve a problem that they did not create; and that preoccupations with individual action, culpability, and purity distract from more effective structural interventions.[34,35,39,40]

These points are not wrong, but they are often wrongly understood. They do not demonstrate the superiority of structural reform, but rather, the importance of the relations between individuals' choices and the laws, policies, and norms that govern their social environments. Certainly, some individual choices are ineffectual. This suggests these are the wrong individual choices to make. It does not suggest the wrongheadedness of changing individual behavior as such. If—and we stress that these are empirical questions—calling for individuals to go vegan and car-free are the wrong individual changes to focus on, there will necessarily be *other* individual changes to focus on, namely, whichever changes best promote needed structural reforms (e.g., phone-banking for pro-climate political candidates). We suspect that many scholars who emphasize the superiority of structural approaches to reform recognize the importance of specific individual actions, especially voting and other political activity. Despite this, many still derogate the value of individual action in general. We call for more fine-grained focus on *which* individual actions are valuable in virtue of their relations to structural change. Table 1 summarizes oppositional and symbiotic thinking about questions like these.

3.3 Cognitive Biases

The refrain that "structural problems require structural solutions" expresses the thought that effective solutions must be as deep, broad, and durable as their corresponding problem. This idea is familiar and intuitive, but may be misleading. For example, the greater a person perceives the threat of climate change to be, the more collective control they think we have over it.[41] This is likely erroneous—bigger threats tend to be more difficult to control. Likewise, a common source of systematic error in causal reasoning is the belief that causes resemble their effects in size and quality.[42] For example, if told of a person who loses their job—a significant consequence—because their computer crashes, people will infer a "matching" cause, such as a widespread computer virus.

If told of another computer crash that yields no significant consequences—no job loss—people will infer a "smaller" cause, such as a malfunctioning cooling fan.[43] This "consequence-cause matching" bias may lend unearned credibility to the thought that individual action is causally insignificant in combatting climate change as well.

Metaphors of size can also imbue "structural" with connotations of "big," inviting other inaccuracies in reasoning. It is sometimes implied that what makes an intervention "structural" is that it is expected to have a large impact. This renders structuralism uninteresting, if not outright empty. That scholars and activists should pursue structural change rather than individual change is hardly controversial if structural change is simply defined as that which has the biggest impact. Moreover, proposals touted as "large-scale," "deep," or "durable" can seem persuasive because they resonate with entrenched masculinist or patriarchal ideology, even if they are unsupported by any good arguments or evidence.[44] Just like the old advertisement equating meat-eating with maleness ("Real Men Eat Beef"), suggesting that the "real solutions" to climate change are structural can seem plausible because it implicitly activates distorting stereotypes. Finally, "big" is vague; it remains unclear what exactly qualifies a policy as big and structural. Such vagueness allows interpretive bias to proliferate: Are municipal energy-efficiency regulations structural? How about such regulations in a small town? When Walmart switched to LED lightbulbs, was that a structural change? We suspect intuitions about this question might be driven by people's attitudes toward Walmart just as much as by their beliefs about the definition of structural change.

3.4 Zero Sum Thinking

Oppositional thinking presents individuals' time and resources for addressing climate change as zero-sum, as if, for example, recycling comes at the expensive of more causally effective strategies, such as holding extractive industries accountable for pollution. But this is misguided. For example, the view that efforts to change consumer behavior distract from more important structural changes presupposes that the former *substitute* for the later. Evidence suggests this may be false, and that relationship is actually often *complementary*. For example, individuals who reflect on sustainable individual behavior become more rather than less likely to support structurally-oriented action, such as policy change.[45] A plausible hypothesis explaining this is that people often want to be consistent across the spheres of their personal activity.[46] There are many are open empirical questions here, and it remains unclear in what contexts "green" consumer behavior complements or substitutes for political behavior in other domains (e.g., does going car-free cause people to take fewer or more pro-climate political actions)?[47] But "substitutability" should not be the default assumption, and indeed, lifestyle choices are strong predictors of taking political action for the climate.[48,49,50]

Given the scarcity of time and energy, the most important question is not *whether* to pursue individual or structural change, but *which* governmental, economic, and social structures we ought to change, and *what concrete roles* individuals must play to change them. There is, of course, extensive research analyzing comparative packages of structural reform. But it is a mistake to portray these as somehow representing alternative strategies to those aimed at influencing the decisions and behavior of individuals.

Both "camps" in the debate are partly right and partly wrong. Each is correct in thinking their favored form of change is indispensable. But they are incorrect to think that either claim to indispensability is *incompatible* with the other. Indeed, both forms of change are not just compatible, both are *essential.* All interventions to create social change include both individual and structural components, and the individual and structural aspects every intervention are interdependent. Consequently, so-called structural reforms always require individuals to support and implement them, while individual choices are always shaped by social structures, which themselves change when individuals direct their agency towards changing them. We thus do not deny the existence of either individuals or structures, or the usefulness of the distinction between them. Rather, we object to construing these categories as antithetical competitors. Doing so generates confusion and discord, thwarts theoretical collaboration, and acts as an obstacle to the development of a richer, more synthetic strategic imagination for guiding social change.

4. Symbiotic Thinking

More work on how to best exploit the mutually reinforcing effects of individually-oriented and structurally-oriented actions is needed. However, several lines of current research have made promising inroads, and can be built upon to develop symbiotic approaches for addressing the most pressing questions for the climate movement.

4.1 Individual Elements of Structural Change and Structural Elements of Individual Change

How can voters be mobilized to support pro-climate public policies?

Consider carbon taxes, a much-discussed approach to emissions-reduction that is quintessentially "structural" (though not uncontroversial[51]). Carbon taxes aim to slow GHG emissions indirectly by manipulating the basic levers and incentives underlying economic activity. In principle, they can work even if almost nobody changes their mind about climate change or makes an intentional decision to reduce their carbon footprint. Rather, emissions will decline simply because the price of producing them increases.

But passing carbon taxes is politically challenging.[52] Debate over them activates partisanship, identity processes, and economic anxiety. As with most policies, persuading the public to support taxing carbon requires contending with the ways in which individual citizens think about the issues involved. Research in this vein should continue exploring the political psychology relevant to the distributional challenges carbon taxes create.[53,54,55] Should all citizens receive equal carbon dividends, or should those most impacted by climate change receive the most? Should the money be spent on climate change mitigation? How much, if at all, should citizens be told they need to sacrifice, given the possibility of backlash once a policy is implemented?[56] Answering these questions and overcoming the obstacles to passing carbon taxes requires a both/and approach: evaluating an ostensibly structural reform—the tax-and-dividend scheme—in a paradigmatically individualist way by considering how individuals think and feel about equity and desert, especially in light of their political and social identities.

A similar lesson holds in the other direction, as those advocating for putatively individualist reforms should take a both/and approach by thinking of individuals in paradigmatically structuralist

ways.[57] Carbon taxes have failed when fossil fuel companies and other opponents have funded massive lobbying and disinformation campaigns.[25] These campaigns shape how individuals—both voters and, notably, politicians—think about the relevant policies. Lobbying that changes the attitudes of individual citizens thereby changes the incentive structures that shape the behavior of politicians, thus shifting the structural context in which politicians operate. In that newly induced context, resisting carbon taxes can help them win re-election, while endorsing carbon taxes can lead donors to fund a rival candidate, etc.

The example of changing incentivizes for politicians also illustrates how thinking of individuals in structuralist terms requires a shift from generic, untargeted efforts to persuade via appeals to scientific evidence or moral argument—efforts to make arguments that "should" persuade everybody, but target nobody in particular. Instead, attempts to motivate individuals should attend to the specific roles, constraints, and incentives that individuals face by virtue of occupying a given organizational position. For example, efforts to persuade CEOs, elected officials, and other institutional leaders to support pro-climate policies requires attending to their respective sets of constraints and incentives, which in turn depend on their stakeholders, consumers, constituents, and so on (see §4.5).[58]

More generally, changes in social institutions and structures reliably lead to changes in people's minds. Individuals' voting and consumer choices are shaped by social forces that make each alternative attractive or distasteful, easy or difficult, efficient or inefficient, etc. Thus, while it is true that enacting a structurally-oriented reform like a carbon tax requires thinking in an individualist way, it is equally true that persuading individuals to support the right reforms requires thinking of their options in a structuralist way. Research on how corporations, laws, media organizations, and culture promulgate the architectures of choice for individuals is thus crucial to building better symbiotic approaches to decarbonization.

4.2 Social Signaling and Social Norms

How can information about climate change be effectively disseminated to motivate action?

While a strong majority of Americans believe in the science of climate change, too few understand the consequences of unabated warming.[14] Likewise, political representatives tend to be both uninformed about their constituents' beliefs about climate change[59] and are skeptical that those beliefs translate into tangible action.[60] Better information dissemination is needed.

Social norms likely have a key role to play here. Norms are the often-unwritten rules that govern social life.[61,62,63,64] They are both "in the head" of individuals and elements of social structures. On the one hand, individuals' decisions are shaped by the norms they internalize from their community. On the other, the social norms prevalent in a community are kept in place by individuals' shared expectations and common practices. These rules—which are the product of interaction between individuals and social structures—are not explicit policies or formal institutions. They are "soft structures"[65] that provide information about what other people do and what other people think one ought to do.[66,67] Social norms can therefore be leveraged to disseminate climate-related information in motivationally effective and durable ways.

Consider whether to go car-free. One way to evaluate the impact of this choice is to estimate its reduction on one's personal carbon footprint (2.4 tons of CO2-equivalent emissions per person per year[18]). Another is to estimate the signals one sends by walking, bicycling, and telling one's friends, family, and co-workers about this choice, helping to create a different set of social expectations in the community. Individual choices have material externalities, but they also perform measurable signaling functions, changing perceptions of what is normal and appropriate.[36] Individual actions can signal values to elite decision-makers as well as other citizens. Governments and businesses may resist change so long as they perceive people to be merely talking about a crisis but going about their business as usual.[68]

Taking this research program further requires addressing a series of empirical questions about the interaction of individuals and social structures. These questions include how much "broadcasting" power individuals have, which in turn requires exploring individual differences in geographic location (city residents who may not drive versus suburban residents who do) social location. A given person's relation to their peer groups is also key, as prestigious and "social referent," individuals are have disproportionate power to transmit normative information.[69] Visible sacrifices made by these individuals will likely have larger effects on others than "easy" choices.[65] Proponents of structural change in particular may be perceived as hypocritical if they don't signal their commitment to change through personal pro-climate choices.[70]

4.3 Ease-Impact Tradeoff

How should researchers think about the comparative "bang for the buck" of more structurally-oriented interventions compared to more individually-oriented interventions?

All else equal, easier-to-implement reforms are likely to have less impact, whereas harder-to-implement reforms are likely to have more. Buying carbon offsets is easy but unlikely to change the course of global events; an enforceable international treaty to curb emissions would be tremendously influential, but is dauntingly complex and likely to be met with opposition. This is a general heuristic, and so not without exceptions. Still, the goal ought to be the proper calibration of effort invested to expected outcome. The worst interventions will be those that drain attention and resources yet do not end up making a difference, while the best will be those that are both achievable and impactful.

Taking the Ease-Impact Tradeoff seriously requires attending to key variables that reflect the symbiotic nature of individual and structural reform, such as:

Feasibility: what is possible for individuals who occupy different social positions to do given current political, economic, and cultural constraints? How demanding is a given intervention of the relevant individuals, given the "choice set" of their social environment? Meanwhile, which public policies and legal frameworks are leaders emboldened to reform, given the opinion and mood of the electorate at a specific point in time, the expected role of interest groups, and so on?

Advisability: what is the potential for an individual pro-climate choice to "catch on" with others rather than decrease the likelihood that they act similarly, particularly in politicized

cultures where climate-related behavior signals partisan identity? Similarly in the domain of public policy, what are the chances for long term durability rather than backfire or further politicization? Will the intervention risk unintended consequences? How dangerous might those consequences be? advisable

Knowability: how predictable are the effects of pro-climate individual choices and social-structural policy-changes? For example, what key variables determine when consumer choices reach tipping points that render them collectively consequential for reducing system-wide decarbonization?[71] Similarly, have proposed decarbonization policies been tried before under similar institutional, political, and cultural circumstances? If so, are the results generalizable?

4.4 Initiating Roles and Sustaining Roles

How can the climate community more effectively let people know what *they* can do, as individuals, to help fight climate change?

Oppositional thinking can create a motivational morass if individualist-oriented advice—flying less often, eating less meat—is seen as doable but ineffectual, while structuralist-oriented advice—create "structural change"—can sound vague and unachievable. A symbiotic alternative is to direct individuals to the variety of social roles they can play to create and sustain structural change.

Different individuals will have different *initiating* roles available to them based on their social positions. Scientists, for example, can help initiate change by gathering data relevant to assessing interventions (they can also choose between various initiating roles, such as being a pure scientist, science arbiter, issue advocate, or honest broker[72]); corporate leaders and employees can initiate change by talking about and seizing opportunities to tie innovation to decarbonization; lawmakers can initiate change by articulating reasons in favor of their preferred policies; columnists and pundits can disseminate and contextualize those plans and the research on which it stands; organizers and activist groups can mobilize support for them; marketers, advertisers, and artists can make them appealing; citizens need to vote for them. Within each of these roles are additional sets of roles, too.

Sustaining roles are filled by individuals who want to help protect and entrench progress already made. They are crucial for ensuring the long-term efficacy of short-term gains, which in turn can become self-reinforcing as policy changes stimulate changes in beliefs and norms.[73] Sustaining roles involve guiding the social policies and laws through the "fog of enactment,"[74] explaining their benefits to the public, and building lasting support for them. One challenge here is that some programs (e.g. vaccination) can work "too well," giving the impression they are ineffective or unnecessary. Public perception can go awry in other ways, too. President Obama's TARP bailout was instrumental in growing today's wind and solar industry. However, this is not well-known because one small unsuccessful piece of this program—the Solyndra grant—received outsized attention.[75] Individuals can fill sustaining roles by working to prevent this kind of misperception and backsliding.

Communicating the importance and recruiting individuals to occupy initiating and sustaining roles exemplifies symbiotic thinking about social change. The specific parts individuals can play are partly determined by their position within social structures, and effectively changing those social structures requires individuals contribute in a range of ways made available by different roles.

4.5 Salience

How can researchers continue to increase the salience of climate change for voters, and perhaps create a formidable demographic of "single-issue" climate voters who will put pressure on policy makers and others poised to enact structural change?

Important lessons can be learned from other advocacy organizations, such as the National Rifle Association (NRA). There is overwhelming bipartisan support in the United States for restrictions on gun ownership. For example, 93% of Democrats and 82% of Republicans favor mandatory background checks for private gun sales and gun shows.[76] Nevertheless, no federal law requires such background checks. The power of the NRA is a central reason why. What the NRA has done, with nearly unrivaled success, is cultivate "a distinct, politicized gun owner social identity over the course of many years, which enables it to influence politics by mobilizing its supporters into frequent and intense political action on its behalf" (Lacombe 2019, 1342).[77] This creates a striking amount of issue salience for these voters. 71% of Americans who favor less strict gun laws are unwilling to ever vote for political candidates who support gun control; in contrast, among those who favor stricter laws, only 34% refuse to vote for candidates who do not share their gun preferences.[78] For political representatives, this kind of issue salience translates to reliable votes. The NRA created a constituency by promulgating a gun culture and a social *identity*, and then gradually but strategically leveraged its reliable votes through elite ties to leaders of the Republican Party.[79]

This strategy of "outside lobbying"—in which an interest group influences politics by motivating mass organized behavior—exemplifies symbiotic thinking about social change. By creating and then appealing to a specific identity, the organization aims to recruit and motivate individuals to act in virtue of their position within a set of social structures. By trading reliable blocks of votes for its policy prerogatives, it achieves structural change by utilizing the power of cumulative individual actions.[80]

Though transposing it to climate change will not be without challenges[81], this strategy should be broadly replicable. Indeed, activists and researchers are hard at work in outside lobbying for climate action. Research guided by symbiotic thinking can continue illuminating how to raise the salience of climate change for members of different social groups, and how to build a common identity uniting them. The climate community can also continue advertising the variety of social roles available to individuals within movement activism; the geographies in which individuals are more and less likely to confederate around shared identity (e.g., churches); the temporality of identity-mobilization (e.g., before vs. after an extreme weather event); and so on.

5. Conclusion

We have argued that what starts as useful heuristic—individual vs. structural change—becomes a confusing impediment when it is interpreted as forcing a zero-sum choice between two

distinct types of interventions. Instead, social structures shape the choices and behavior of individual people, while those choices and behavior (re)shape the social structures within which people live. Surely some individual actions are more influential than others, just as some structurally-oriented policy changes are more influential than others. The way to identify the most promising combinations is with symbiotic thinking about the relationships between individuals and structures and their power to create change.

Table 1

Topic	Structuralist Claim	Individualist Claim	Interdependence
Causal Insignificance	Individual consumer choices cannot make a material difference to atmospheric GHG concentrations. Only changes to "hard" structures such as laws and material infrastructures can have the requisite causal impacts.	It is precisely the "hardness" of entrenched structures that makes efforts to change them causally insignificant. In the face of immovable structures, it's rational for individuals to do what they can, e.g., by changing consumption habits.	Structural reforms causally depend on individual changes, and vice versa. The causal impacts of individual choices and structural reforms must be assessed empirically, including consideration of investments of effort against expected outcomes. See §4.3.
Breadth, Depth, Durability	Rather than focus on idiosyncratic issues (e.g., meat consumption), "deeper" and lasting change is needed which addresses the "root" or "underlying" causes of the climate crisis (e.g., economies reliant on fossil fuel extraction and political ideologies such as "neoliberalism").	Change occurs when individuals are persuaded to make different choices (cf., declines in smoking and drunk driving in the United States).	Deep and durable change is needed, but because of the potential for "failed success" of structural reform—i.e., changes that create backlash sufficient to undo them (e.g., Prohibition in the United States)—structural change must ensure popular support.
Victim Blaming	Ordinary people—especially the global poor—suffer the worst effects of climate	All paths to decarbonization must include rapid and	Holding individuals responsible for helping to solve collective problems need not entail blaming

	change. Asking them to make sacrifices to reduce their carbon footprint unjustly puts the onus on the victims to solve a problem that they did not create.	massive "demand-side" increases in consumer desire for low-carbon products (e.g., electric cars and electrification of home heating).	them.[82,83] Individuals have responsibilities to others given their distinctive social roles (e.g., citizens must vote, businessowners must decarbonize their production chains).
Distraction	Preoccupation with individual (consumer) choice distracts from more effective activities like climate activism.[39] "Greenwashing" has been effective for diverting attention from corporate malfeasance to ineffectual consumer-based "green" identity signaling.[84]	"Green" consumer behavior is not sufficient to solve the climate crisis, but purchasing low-carbon products is virtuous and beneficial.	The crucial empirical question is in when "green" consumer behavior complements or substitutes for structurally-oriented behavior. Identity and consistency effects may drive "green consumers" to be more rather than less likely to engage in climate activism (§3.2).
Meta-Structuralist Belief	Belief systems are consequences of structural phenomena. People subscribe to individualist worldviews because they live in societies organized around individual liberty, and the pursuit of personal wealth and happiness. Inequality increase people's beliefs in individual responsibility for one's fate.[85] Changing widely-held beliefs requires changing structures.	Culture is the product of individuals' choices and values. Structural phenomena like inequality are the product of widely-held meritocratic beliefs.	Widely held beliefs both cause and are caused by structural phenomena. CO_2 removal technologies like carbon capture and storage are likely necessary for reaching global net-zero emissions. Public support for CO_2 removal technologies is weak in part because they are seen as "too slow" and as failings to address "root causes."[86]
Corporate and State Responsibility	100 companies are responsible for producing 70% of global GHGs since 1988.[87] The worst offenders have known for decades that their product would	Corporations and governments are run by individuals, who must be persuaded to	Corporate and government behavior is constrained by "hard" structures, such as law and public policy, as well as "soft" structures, such as social norms, e.g.,

	create the climate crisis; their response was to fund misinformation campaigns about climate science (Oreskes & Conway 2010). They must be held accountable by legislative enaction of pro-climate laws and policy.	enact climate friendly structural changes.	mandating a narrow commitment to lobbyists and stakeholders' financial interests (§4.2). Changing corporate and state behavior requires changing these hard and soft structures of incentives and constraints, which requires, in turn, action by *other* institutionally-empowered individuals (e.g., media elites, "social referents," community leaders, norm entrepreneurs, and the ordinary people who must organize to hold empowered individuals accountable (§4.2, 4.4).[88,89]

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