It's not enough to be right!

The climate crisis, power, and the climate movement

The demands of the climate movement – for rapid and profound change – are based on scientific findings and the political commitments to the Paris Agreement*. The activists are, therefore, factually "right". However, being right is not enough to justify or to accelerate the practical implementation of knowledge and decisions. We explain which social factors are at work, and how the climate movement can benefit if they incorporate these factors into actions for social change.*

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While climate activists experienced strong mobilization in 2019, they suffered the consequences of the COVID-19 pandemic. At the same time, extreme weather events continued to underline that societies need to act urgently in order to meet the climate protection targets. While the demands of climate activists have been scientifically proven to be justified (Hagedorn et al. 2019), this knowledge so far has not been directly translated into political or social realities. Even with massive cuts to economy and mobility due to the pandemic, global greenhouse gas emissions fell by only about 7 % in 2020 from the previous year (Le Quéré et al. 2021) – which is roughly equivalent to the annual reduction required between 2020 and 2030 to limit global warming to 1.5 °C (7.6 % according to UNEP 2019). Moreover, the conditions that have led to these cuts suggest that the world increasingly returns to carbon-intensive economic practices and lifestyles. Data indicates that global CO_2 emissions have risen again in the first months of 2021.[1] Whether the stimuli and economic support programs that are globally being launched to counteract the effects of the pandemic will lead the way to a carbon-neutral future is doubtful.

As social science researchers, we witness growing frustration among climate activists. Why is it so difficult to politically implement what has been recognized as the right thing to do – namely, pursuing the goal of a deep decarbonization of the global economy, a goal which is supported by science and society? Here we offer five propositions to the climate movement, thereby engaging in the public debate on climate protection and climate neutrality and providing the climate movement with social science explanations for the obstacles it faces. While the first three prop-ositions focus on obstacles resulting from the political level, the last two raise awareness of critical issues relating to the individual level.[2]

National states have acknowledged the need for global responses to climate change in international agreements like the *2030 Agenda for Sustainable Development* (UN 2015), and programs like the *Sustainable Development Goals*[3]. Yet it is national political entities that mainly have to meet the targets of the *Paris Agreement*[4]. Different governmental regimes respond in dissimilar ways to this responsibility, creating specific pathways and obstacles to the transformation processes (Blühdorn et al. 2020). According to this view, our paper will focus on one governmental response and societal context – namely the German one – and its effects on climate protection. This does not mean to silence or belittle the relevance of other insights. Especially non-Western perspectives are crucial. In order to come closer to climate justice, global production chains need to be transformed (Quarshie et al. 2016) and non-Western ways of knowing need stronger representation (Hall and Tandon 2017). We see our contribution as an addition to the article by Hagedorn et al. (2019) published in *GAIA* and as an invitation to an open conversation on how to achieve climate justice globally. In the following five propositions, we explain which social factors are at work and how the climate movement can constructively integrate them into its actions.

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1 *https://carbonmonitor.org/data*
2 Note the embeddedness of the individual level in (political) social structures.
3 *https://sdgs.un.org/goals*
4 *https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement*

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1 Climate protection is not a scientific, but a political problem

Many people in the climate movement are critical of how clear scientific knowledge is not being translated into rapid and comprehensive measures to protect the climate. After all, the facts seem to speak for themselves, and the slogan "Listen to the science" sounds plausible enough. The scientific description of the problem emphasizes the severity of climate impacts and how quickly the Paris climate targets would need to be implemented in order to at least mitigate these impacts (IPCC 2021, Hagedorn et al. 2019). However, this factual necessity provides no certainty or agreement as to the best way to achieve those targets.

Social science research has extensively addressed social transformation processes (Brand 2018), and the social transformation is a core field in social climate sciences (Engels 2021). This research has illuminated the magnitude of the task ahead. Moreover, it has shown that there is not the one "right" path towards climate-neutral societies that policymakers simply need to follow. The possible paths as well as their implementation must be negotiated politically. Anchoring any long-term goals, which come with strong interventions in the distribution of goods, will predictably lead to conflict. Such anchoring can only succeed if social pressure puts the issue on the short-term agenda and makes it binding and enforceable especially through legislation.

2 Climate change is (just) one problem among others

In societies, differing opinions stem from the existence of varying collective interests, all of which are legitimate (Grundmann and Rödder 2019). Debates on the *2030 Agenda for Sustainable Development* illustrate that health, peace, poverty reduction, equal opportunity, the overcoming of racism and exclusion, food safety and the granting of basic freedoms are equally important human objectives, each of which would need to be addressed through concentrated political effort. The moment someone claims that any of these problems outweighs all the others in importance this will necessarily meet with resistance.

Instead of playing off different human challenges against each other, political action needs to dovetail climate protection as closely as possible with other legitimate major concerns (Karlsson et al. 2020). The approach that creates the broadest possible overlap in order to increase the chances for the implementation of collective action is promising on both a large and small scale. Current examples are transformation processes of urban transport. Reducing the ubiquity of cars increases urban quality of life and opens public spaces for a more vibrant community life and for urban greening (März et al. 2020). Climate policy will have the best chance of succeeding when strong veto positions can be removed and constructive alliances established. This is particularly true when dealing with actors for whom climate protection is not a priority.

3 The fossil-fuel age is founded on politico-economic entanglements

The critical obstacles on the path to decarbonization are not technical, but primarily social and political. In many areas, adequate technologies are largely in place; in others, their development is foreseeable. This is also recognized by techno-economic studies: "Maintaining public support through a three-decade transition to net zero simply cannot be achieved without the development and maintenance of a strong social contract" (NASEM 2021, p. 1). However, this falls short if the social component is understood to refer only to questions of acceptance – important though that is – of a socially just implementation of technical solutions.

Politics is not the "calculation of the optimal", but rather "the art of the possible".

Rather, the difficulty of social change toward climate neutrality (regarding all greenhouse gas emissions) arises primarily from the centrality of fossil fuels and the material wealth derived from them in the history of industrial modernity and its prevailing structures of domination. Literature on energy within the humanities emphasizes the crucial role of fossil fuels: "We are citizens and subjects of fossil fuels through and through, whether we know it or not" (Szeman and Boyer 2017, p. 1). The extraction of coal was key to the rise of imperialistic empires and "our global geopolitical landscape remains shaped by the ongoing struggles for access and control of fossil fuels" (Fahy 2020, p. 712). Fossil energy is closely connected with the emergence of key institutions of Western democracies as well as with the emergence of a neo-liberal idea of freedom as a self-regulation of markets and societies freed from material constraints (Charbonnier 2020).

Deeply entrenched power and thought structures impede the transition to climate neutrality by narrowing the opportunities for global cooperation (Aykut and Dahan 2015) and by obstructing the political horizon when it comes to searching for alternative social forms (Acosta and Brand 2018). Institutional and power settings prioritize and guarantee the freedom of individual consumption, and in the current form of democracy – based on mass consumption – any shift in prioritization towards reduced consumption levels and sufficiency goals is unlikely (Blühdorn et al. 2020). Fossil energy technologies are part of "sociotechnical regimes," that is, of intertwined and mutually stabilizing linkages between economic interests and political groupings, infrastructures and technologies as well as markets and practices (Smith and Stirling 2010). A strategy that concentrates on raising ecological awareness and encouraging individual behavioral change turns out to be equally insufficient. Instead, the often-arduous search for a vast majority in society and strategic building of het-

erogeneous coalitions comes to the fore. Only in this way can socio-technical dependencies on given paths, political-economic coalitions of interests and associated traditional hegemonic patterns of thought be destabilized and overcome. A strategy emerges that recognizes the complexity of societal power structures and relies on the gradual building and stabilization of a social dynamic for change. This may well mean that options for action that appear to be optimal from a scientific, technical or economic point of view should be called into question if they are considered problematic in terms of their impact on social dynamics or if they re-establish problematic infrastructures for long periods of time.

4 Knowledge alone does not bring about behavioral change

There is widespread hope that more and even better validated knowledge about the climate-damaging effects of our resource-intensive way of living and doing business will lead to change. Following this linear logic, all it would take for people to adjust their behavior is comprehensive information (deficit model, Bauer 2017). As a result, there are calls for politicians to follow the facts of climate science (Hagedorn et al. 2019) and for citizens to make and implement the right sustainable consumption and (lifestyle) choices (Shove 2010).

car, forgo air travel or exchange a larger apartment for a smaller one without economic necessity often have to justify themselves. A carbon-neutral lifestyle is currently only possible if we make decisions that are perceived by others as extreme (Reusswig et al. 2020).

The normalization of climate-friendly behavior will not occur through the sum of individual decisions. Rather, structural adjustments of the framework conditions that pre-structure our spaces for action are required (Kopatz 2017, RNE and Leopoldina 2021). This includes removing climate-damaging subsidies and the expansion of climate-friendly infrastructures. With regard to bicycle traffic, this would require a more appropriate distribution of space between bicycle and car traffic in urban areas. In Berlin the amount of space devoted to bicycle traffic would have to be more than quadrupled to even do justice to the current share of bicycle traffic (Heinrich-Böll-Stiftung and VCD 2020, p. 13).

While these insights are rather unsurprising from a social science perspective, their radical implications are seldom picked up politically. Acknowledging these contexts, however, can be transformative when applied by politicians. Building on this, social innovations are needed that question the status quo and give greater space to more climate-friendly technologies, everyday routines, forms of knowledge, conventions, economies, and expectations (Shove 2010, p. 1278).

Political action needs to dovetail climate protection as closely as possible with other legitimate major concerns. The approach that creates the broadest possible overlap in order to increase the chances for the implementation of collective action is promising on both a large and small scale.

However, while environmental awareness in Germany is continuously at a high level (BMU and UBA 2019), environment-damaging behavior remains also high, as can be seen, for example, in continued food waste (Schmidt and Wellbrock 2021), high levels of municipal waste[5], or the still rising sales figures of SUVs.[6] Yet there are reconstructable reasons for why existing knowledge or even environmental values do not translate directly into action (for discussions on *knowledge-action-gap/value-action-gap* see Kutti 2019). To understand this gap, we need to consider that individual actions are embedded in institutional, social and infrastructural frameworks, which ensure that climate-damaging behaviors remain the norm (Shove and Walker 2014). In most social settings, acting in a less resource-intensive way means breaking with established routines and often requires additional effort and expenditure. Furthermore, those who do away with their

5 Transformation requires the active involvement of diverse social groups

The regulations and programs adopted by politicians will have to be enacted and supported largely by citizens. Thus, regulations and programs need to be developed with the participation of citizens in the first place (e.g., citizens' councils, involvement of local initiatives and other participatory processes). Instead of expecting that climate change will thereby somehow become a priority for all groups in a society, politics and movements alike need to reach out actively to those people who are not interested in climate protection in the first place – especially if these people belong to disadvantaged groups, for example, working class and precarious people. One important way of doing so is by linking climate protection to the interests of these groups.

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5 Waste generation in municipal waste: *https://www.umweltbundesamt.de/en/data/environmental-indicators/indicator-quantity-of-waste-municipal-waste#at-a-glance*.
6 According to the Kraftfahrt-Bundesamt, a total number of 762,490 sport utility vehicles (SUV) were sold in Germany in 2019, resulting in an increase of 21,1 % compared to 2018: *https://de.statista.com/infografik/19572/anzahl-der-neuzulassungen-von-suv-in-deutschland*.

Some examples of this practice exist. Citizen engagement in energy production shows that people are often mobilized if a project contributes to the development of their local community (Colell 2021, Feddersen 2020). Engagement in local energy politics derives from a variety of motivations, for example, just urban development, affordable energy provision or resistance to global corporations (Pohlmann and Colell 2020). Eagerness to technical innovations and to social trends such as slow fashion, urban gardening or share economy are further interests on the basis of which people join groups whose goals are relevant to climate protection.

Yet, studies from the field of energy democracy show that even in these groups, social inequalities are reproduced (Burke and Stephens 2018). While women are active in and shape environmental movements – particularly *Fridays for Future* (Sommer et al. 2019) – they are significantly underrepresented in decision-making positions in both (energy) politics and economy (Allen et al. 2019). Studies also confirm that certain population groups, especially low-income groups and people with a migrant background, do not tend to be active in climate movements. Even the positive examples mentioned above have not overcome these social inequalities or responded sufficiently to the interests of disadvantaged groups. Energy cooperatives, which are often regarded as prime examples of a successful combination of social and environmental sustainability, are mainly located in high-income regions (Klemisch 2014) and more than 70 % of their predominantly (80 %) male members have a monthly income of at least 2,500 EUR (Yildiz et al. 2015, p. 64). Likewise, people with a migrant background have been found to be extremely underrepresented among cooperative members (Neusüß 2014).

We need to do a better job of actively creating links between climate action and the needs and interests of different groups within our societies. The existing approaches of the *Fridays for Future* movement to articulate global justice and social inequality in its demands should be strengthened to increase the movement's capacity to attract population groups into alliances that have so far been underrepresented, both in the field of environmental movements and even more in energy policy and decision-making functions (figure 1).

Conclusion

How can the social science propositions presented here be applied to the climate movement? First of all, the previous communicative focus on scientific facts – for example under the slogan "Listen to the science" – was certainly effective in lending legitimacy to the climate problem and putting it on the political agenda. This strategy, however, no longer suffices. Instead of continuing to insist on the scientific necessity of decarbonization, we must focus on engaging in the social discussions on political solutions and paths toward transformation. The starting point must lie in the plurality of social realities, values and constellations of interests. Acknowledging this plurality and the existence

FIGURE 1: The movement of school students *Fridays For Future (School Strike for Climate)* organizes worldwide protests for climate action like here in Leipzig, Germany, on May 24, 2019. The links between climate action and the needs and interests of different societal groups should be strengthened.

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and legitimacy of other perspectives regarding societal priorities is key to the search for suitable allies in order to forge broad societal alliances for change.

Second, given the depth and urgency of the necessary changes, there cannot be a one and only technological, political or activist strategy. Politics is not the "calculation of the optimal", but rather "the art of the possible" (Geels et al. 2017, p. 475). This insight, however, should not be misunderstood as a call for miniscule, detached steps. Instead of focusing on the one, "right" solution, however, the question is how different strategies can be combined in order to generate synergies. The goal is to broaden the societal imagination horizons so that they can connect with varied visions of the future held by different sectors of society. The range of possible modes of action includes not only the usual democratic means of exerting influence and the communication and information work, but also the creative exploitation of legal means and the building of pressure from civil society through direct action. Additionally, through experimenting in a targeted way with sustainable forms of living and doing business, new spaces for social transformation processes can emerge.

Third, this way of connecting strategies with solutions is necessary to address and integrate different, especially hitherto disadvantaged, social groups and organizations from other sectors of societal action into the dynamics of transformation through social engagement, political conviction or economic interest. Only by generating broad societal support for change (Aykut et al. 2019) can those power structures that are entangled with the fossil-fuel system be overcome. As long as these power structures remain in place, it will not be enough to be right – no matter on how much or conclusive scientific knowledge the claims of *Fridays for Future* or other protestors might be based.

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