Organizational (issue) field perspective on climate change

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tuted through the interactions between them. In this article, we answer three questions regarding the theoretical, methodological, and empirical benefits of taking a field perspective. *Why is this helpful for examining climate change?* We start with a brief discussion of the relevance of organizations for influencing CO_2 production and for contributing to discussions on climate change. We then discuss the relevance of examining relational interactions, between organizations, in stabilizing or changing current positions towards debated actions and towards daily production practices. *How is this approach usefully different?* We propose that by combining two types of fields – organizational fields and issue fields – we can examine the relationships between organizational actions and discourse. From this we can examine what organizations are doing, how they are "talking," and why they are influenced by this. *How does this provide actionable insights?* Finally, we demonstrate how both types of fields can be captured simultaneously via big data approaches – by accessing the websites of thousands of organizations and by extracting how they link to each other. Such a research approach helps to inform our understanding of climate change debates and practices, highlights barriers, and offers alternative solutions.

Introduction

We are in crisis mode. Climate change is simultaneously the grandest global challenge and a daily challenge to individuals' perceptions, motivations, and actions. Economic sociology equips us to examine the heart of this crisis: the means, institutions, and regulations of production, exchange, and consumption. To complement this, we must have theoretical and methodological approaches that simultaneously bridge these macro-global and micro-actor levels. The aim of our article is to propose a research agenda for examining climate change from a field perspective to serve as this bridge. Institutional theory defines the "field" as a unit of analysis, rather than focusing on solo organizations or people, to examine all relevant players in processes of stability and change. This concept is influenced by Bourdieu's (1977) notion of "social field" or socially constructed arena: how organizations' interests and activities are mutually consti-

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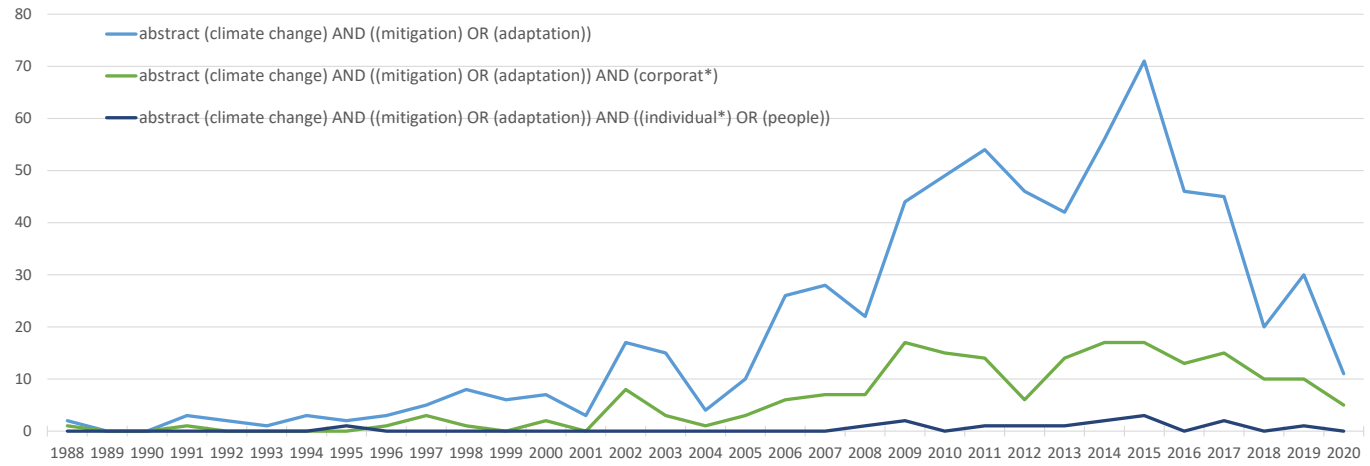

Figure 1: Number of articles that mention "climate change" in 210 business and 184 economic journals (JSTOR, 1988–2020)

Organizations and fields in climate change

The involvement of organizations in climate change is manifold. Energy production companies are central producers of CO_2 emissions. Car manufacturers design cars and the type of engines used. Companies and state agencies organize public transportation. Construction companies influence the amount of cement used in buildings. Besides organizations involved in production of goods and services, there are civil society organizations that fight for (or against) man-made climate change, political parties that ignore or problematize it, and governments that develop policies to mitigate or adapt it. There are media organizations like television stations, newspapers, social media platforms, and blogs that report debates in civil society, politics, and organizations' decision-making.

Among all these different organizational forms, economic sociology and related researchers have tended to focus on the role of corporations. Andy Hoffman (November issue of the Newsletter) and others argue that corporations are best equipped for climate change mitigation and adaptation. Thus, we need to influence corporations' decision-making processes. Eve Chiapello (also in the November issue) examines the effect of economic instruments created by political decision-makers, regulators, foundations, and other financial and industrial players on corporate behaviors. Environmental organizations' divestment messaging is affecting university, pension, and sovereign fund investment decisions. While there is a multitude of research on each of the different organizational forms, only a few studies focus on the interactions between forms. Examining multiple interactions – say between media, governmental agencies, research organizations, and civil society organizations – is even rarer.

Research has also examined the influences on individuals' perception of climate change (Leiserowitz et al. 2010). People consider climate change information and its relevance to their own lives. Consumers and investors make decisions about which products to buy or boycott based upon companies' ESG (environmental, social, and governance) criteria and associated carbon footprints. Within corporations, CEOs and their top management teams make investment and operational decisions that affect emissions rates and their resulting ESG ratings and carbon footprints. This illustrates the micro-macro decision-making processes. Figure 1 gives the number of articles in 210 business journals and 184 economic journals, from JSTOR, with abstract mentions of: (i) (climate change) AND ((mitigation) OR (adaptation)) and (ii) mentions of (corporat*) or (iii) mentions of ((individual*) OR (people)). The first article was in 1988. Attention peaked in 2015 with 71 articles mentioning "mitigation" OR "adaptation" of the total of 5,894 articles mentioning "climate change" in the abstract (1988–2020). This equates to 3 percent mentioning climate change out of the 224,524 articles published in these journals over these 33 years. In sum, the attention to climate change has been sparse, with attention to corporations and individuals/people even more so.

Besides examining the interaction between organizational forms and multi-level decision-making, Simone Pulver (November issue) argues for a systemic approach to understanding the interactions between sectors, such as between the energy sector, water sector, and transportation sector. A field approach – organizational fields, issue fields, and organizational issue fields – tries to encompass the various perspectives.

Organizational fields

An *organizational field* is "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (DiMaggio and Powell 1983). Organizational fields tend to be organized around resources – such as funding, technical capabilities, political access, capacity to enact regulations and key definitions, or legitimacy.

Thus, fields are not limited to organizations that interact along a supply chain or competitors in a market niche, but include all organizations that are somehow interacting, making rules, defining hierarchies, and creating and communicating their common purpose. The most useful element of using an organizational field approach is that it can examine the relative positioning and interaction of players, the evolution of regulation and practices, and explanations for stability or change (Grodal 2018).

Organizational field players need not align to state or industry boundaries, adhere to one organizational form, or even *believe* in a common purpose like addressing climate change. They just need to recognize that they are playing the same game and enter into a relationship. One organizational field relevant to climate change is formed around the exchange of carbon certificates. Included are greenhouse gas emitters (GHG) and mitigation investors as carbon credit buyers and suppliers, regulators and verifiers, rating agencies, investor advocates, and any other organization involved in the carbon market. This permits the examination of interactive, multi-level actions. For example, why are multilateral development banks in particular more likely to develop climate action plans? Another organizational field relevant to climate change is transportation. Players include energy production companies that decide to invest in conventional oil, oil sand, biogas, geothermal energy, and even hydrogen; manufacturers that redesign cars; companies and state agencies that organize public transportation; and construction companies that influence infrastructure decisions.

An organizational field may be modeled as a social network with organizations as nodes that are linked by interlocking boards, contracts, shared memberships, or other relationships (Powell and Oberg 2017). Analyzing the structure of the nodes provides insights into the functioning of the network (i.e., center–periphery structure versus weakly connected clusters), the distribution of particular nodes (i.e., concentrations of particular forms of organizations), and the relative positions of particular organizations. Alternatively, the relationships in the network can be studied by examining the reasons for tie formation among organizations (Kenis and Knoke 2002). While structural or positional analyses via nodes provide a good overview of the structure of a field, the relational analysis of ties reveals the organizing mechanisms.

Issue fields and organizational issue fields

While *organizational fields* are often used to study institutionalized structures, *issue fields* are often used to study discourses within organizational fields. As is suggested, this field forms around a "central issue – such as the protection of the natural environment – rather than a central technology or market [which] introduces the idea that fields become centers of debates in which competing interests negotiate over issue interpretation" (Hoffman 1999, 391). Players engage in framing contests and "politics of signification" (Benford and Snow 2000, 625) to identify and interpret the centralizing issue, usually to their advantage.

So, for this, researchers examine players' framing of "what is at issue" to diagnose the issue domain (environmental, economic, morality/ethics, political/human rights), the specific problem and theorizing its cause, providing a prognosis and creating consensus around possible solutions, and motivating collective action to address the problem (Snow and Benford 1988). This approach has been used to understand how climate change is being defined as a problem, the appropriate solutions, and determining allies and enemies (Hoffman 2011). Framings can vary from strong support among alarmed *believers* to those concerned and *convinced* by the science but less motivated, to disengaged *fatalists*, to those *skeptical* or doubtful of climate science, and to outright *deniers* who are dismissive of climate change occurring at all (Lefsrud and Meyer 2012). Besides defining the problem, these framings are embedded within economic, state, religious, and/or technical spheres that endorse certain prescriptions, such as carbon taxes, public accountability and transparency, ethics and stewardship, and scientific solutions. Rhetorical analysis is used to determine which elements of players' credibility, logic, and emotion make their framings most persuasive.

Frame analyses of issue fields create valuable insights into different rhetorical positions within debates but often ignore the players who contribute to debates. This creates an interesting division of work in empirical field studies: researchers studying organizational fields focus on players and their relationships, while researchers interested in issue fields concentrate on discourses (Powell and Oberg 2017). With the availability of massive amounts of digital data, both perspectives can be combined to study *organizational*

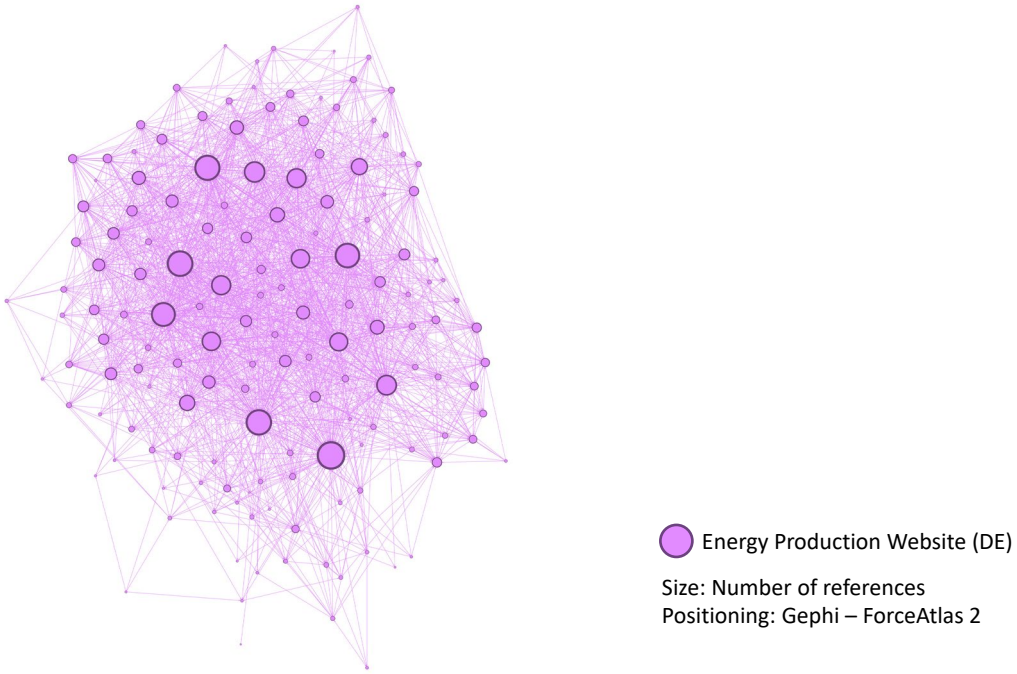

Figure 2. Organizational field of energy production in Germany

issue fields in which relationships among organizations and positions within debates are captured and analyzed at the same time (Lefsrud, Oberg, and Meyer 2019).

Capturing organizational issue fields

To capture such fields, we make use of the common features that both types of fields share. Both rely on mutual recognition among organizations of the same field as a prerequisite for interactions (DiMaggio and Powell 1983) and for debating alternative positions (Benford and Snow 2000). This mutual recognition is often not easy to observe for researchers, but on the World Wide Web and on many social media platforms, references to partner organizations or to others' contributions to discussions are quite explicit (Powell et al. 2017). Together, the mechanisms of mutual recognition and explicit referencing increase the likelihood that networks of organized players become visible in digital media and that fields form denser clusters (Powell, Oberg, and Korff 2014).

Capturing fields via digital media

To reconstruct these clusters within networks on digital media, a stepwise process of field reconstruction is used (Powell et al. 2017). In the first step, organizations are identified. In organizational fields, associations, and field-specific websites exist that describe the field and highlight members. In issue fields, media websites and conference pages cover different perspectives and important players in debates. Using such organizations as starting points for a field reconstruction ensures that central players with different forms and positions are captured too. In the second step, the self-representations of these organizations on the web or on social media platforms (often on homepages, in bios, or using other descriptors) are automatically collected with a web crawler software (Powell et al. 2014; Schöllhorn and Oberg 2009). Because of the explicit referencing on digital media, this step results in long lists of references (often hyperlinks) to other organizations' self-representations.

Aggregating these references creates a ranking of organizations that are highly recognized by others in the field. Following the theoretical expectations of mutual awareness and of homophily clustering in fields, important players should show up as highly ranked. In the third step, the organizations on the ranked list are checked for whether they belong to the same field. This step is crucial, as fields sometimes overlap with neighboring fields (Powell et al. 2014). After this third step, the initial list of known field members is expanded by the newly identified organizations. These steps are then repeated until no additional new organizations appear in this stepwise snowball sampling.

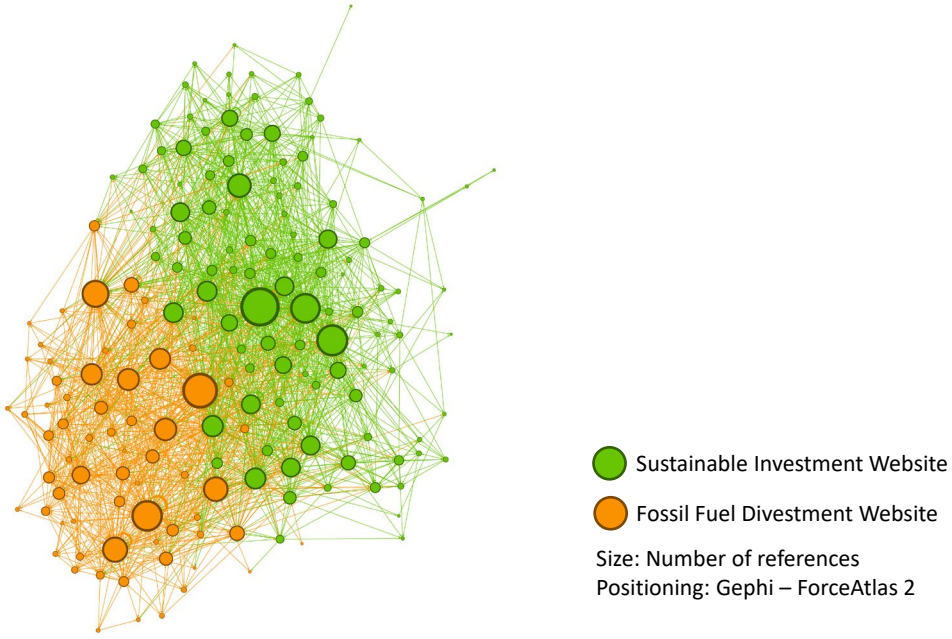

Figure 3. Organizational issue field of sustainable investment including fossil fuel divestment

Organizational field of energy production

To provide an example outcome of this method for capturing an organizational field, we reconstructed the core of the German energy sector (see Figure 2). The size of the nodes is scaled for the number of connections with other organizations. We observe a dense network of organizations referencing each other with a center–periphery structure. The center and periphery are populated by governmental agencies, specialized media blogs, non-governmental organizations (NGOs) promoting renewable energy, and companies producing and distributing electricity and heat.

We could have assumed that the field of energy production is split into fossil fuel-based production and renewable production. But an application of clustering algorithms on the network relations does not show a clear-cut separation of players based on production modes. Instead, players are much more interwoven: several energy producers combine both modes, NGOs link organizations as good or bad examples, and organizations interact across differences in issue debates due to the shared purpose of energy production.

Organizational issue field of sustainable investment

To provide an example of an organizational issue field, we reconstructed the international debate on sustainable investment, including discussions about fossil fuel divestment (see Figure 3). This field has many more players that are highly recognized by peers. We observe a network that is stretched and has no clear center–periphery structure. Instead, the application of a network clustering algorithm shows that, based on the relational structure, two clusters of organizations can be identified: a cluster with organizations specialized in sustainable investment debates (green) can be distinguished from a cluster discussing fossil fuel divestment (orange). There are no structural holes between these clusters, as there are several organizations bridging both issues, but the density of interactions within the clusters is higher than between them.

There are several differences between the organizational field (Figure 2) and the organizational issue field (Figure 3). First, the composition of involved organizations differs significantly. The organizational field of energy production contains a mix of German companies, NGOs, media websites, and governmental agencies. Conversely, the organizational issue field on sustainable investment is primarily populated by international NGOs, think tanks, associations, and specialized media websites. Second, the differences in positions towards the issue (invest/divest) seem to be more important than differences in organizational forms. While network positions in the organizational field are connected to organizational forms, belonging to clusters is more influenced by their politics of signification (Do we invest or divest?). Third, the extent of interaction differs. The organizational issue field is denser than the organizational field, caused by the in-

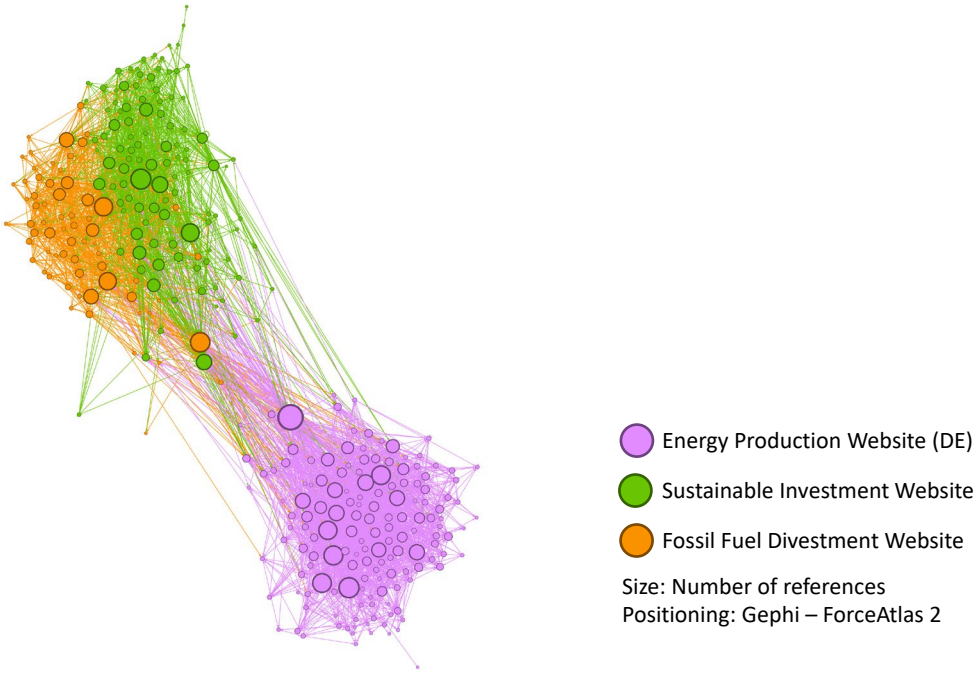

Figure 4. Interplay of organizational fields and issue fields

tensity of debates surrounding the issue. The higher density is especially interesting, as the standard hypothesis might be that older fields like energy production should show more frequent interactions than a younger field like sustainable investment.

Interplay of fields

A last example focuses on the interaction between the previously reconstructed fields (see Figure 4). In this figure, the references among organizations of the organizational field of energy production in Germany (purple) and of the organizational issue field of sustainable investment (green) and fossil fuel divestment (orange) are included. The visualization algorithm pulls some of the organizations, which were previously deeply embedded in their specific fields, in the direction of the other field.

This is a visual cue that issue fields and organizational fields might influence each other (Powell, Oberg, and Korff 2014). Some organizations are recognized by players of the other field (and vice versa). Such interconnections between fields reflect the ability of single organizations to connect fields (Furnari 2016). Whether or not such interstitial debates are conflictual or consensual depends on how those bridging organizations engage with conversations in the fields involved (Oberg, Korff, and Powell 2017). The observed interaction is not totally unexpected: energy production needs large investments and has a major impact on CO_2 production. Nevertheless, the ability to observe which organizations serve as bridges (and which do not) is insightful for further studies.

Another empirical step would be to analyze the diffusion of concepts between the two fields. Which concepts emerging from the organizational issue field of sustainable investment are picked up in debates on the national field level of energy production in Germany? From analyzing the texts of websites and social media of those in the organizational field, some invest/divest concepts might be found on their pages, even if these organizations are not directly linked to the international debate. Such an analysis can identify the relative influence that various issue field debates might have within organizational fields.

Potential contributions: Making fields visible and understandable

The effort of distinguishing fields involved in climate change debates and collecting massive amounts of digital data could serve two purposes. First, it deepens our understanding of field dynamics and the tendencies of organizational fields to stabilize themselves. Second, the collected data provides a basis for examining societal debates about climate change measures in different fields. By visualizing these interactions, we can disentangle processes of field dynamics and stability.

Understanding of field dynamics (and stability)

Our method for considering organizations' interactions and conversations in an organizational issue field makes it possible to enhance research on climate change from a socioecological perspective. With this approach, we combine analyses of economic activities with analyses of societal debates. By applying the same methodological toolset to both types of fields and to the interaction of these fields, we can disentangle the similarities and differences between them.

When we look at the differences between organizational fields and issue fields, one observation is that the diversity of organizational forms is higher in the reconstructed organizational field than in the issue field. Such a higher diversity of forms typically goes hand in hand with typification processes in which organizations are expected to behave in accordance with their organizational form: a corporation is expected to follow economic goals, an NGO is expected to fight for a certain societal goal, a government agency is expected to create or implement policy, etc. When a field is populated by organizations of various forms – as we have seen in the field of energy production in Germany – such typification processes stabilize interactions even among organizations of different forms. This stabilization might reduce an organizational field's ability to change its interaction patterns when external issues enter the field. The typical reflex is that such issues are delegated to organizations of specific forms within the field. For instance, climate change becomes a topic for associations, while corporations focus on their economic activities. In issue fields, the organizational forms are less important for interactions because players' positions on issues (rather than forms) are the driving force that creates coalitions and confrontations. As positions are easier to change than forms, organizational players can form alliances, drop positions, or change their position over time. A consequence of these structural differences is that organizational fields have strong economic mechanisms that create stability even when impulses for change come from outside, while issue fields are more flexible and can change their structure faster. We can change our conversations easier than we can change our modes of production.

Although these differences in dynamics and stability may reinforce the differentiation between fields, two mechanisms of exchange can take place across the differences. First, relationships between organizations in the different fields function as channels for information flows, and concepts debated in one field can be adopted and adapted by organizations from other fields (Oberg, Korff, and Powell 2017). As we have seen in these examples, such interactions between fields can even be assessed via reconstructing fields on the World Wide Web. Second, understanding the dynamics *and* the stability of a field and the associated mechanism might help us to understand why many organizations do or do not initiate CO_2 mitigations. By applying this approach to different organizational and issue fields, we can assess the processes of specific climate change debates and diffusion of practices in various national and international organizational issue fields.

Visibility as a resource for change

Although this approach will primarily deepen our understanding of the social processes that affect climate change, it has several benefits in advancing societal debates and developing ameliorations. First, our data collection relies on naturally occurring data sources like websites, tweets, and Instagram posts. We are just eavesdropping on these conversations. This unsolicited "natural" data is produced by players that present themselves and their position in front of a broader audience. As such, the data reflects organizations' interactions, expressed values, norms, and concepts, and minimizes our interpretation of them. Second, this data can be visualized and presented in such a manner that makes the findings intuitively understandable. There is a high level of face validity. Social networks make sense to people and have familiar analogies to our own lives: who we do business with, who we talk to, and who we are influenced by. Third, as the collected data is publicly available, the proposed studies of fields can be reliably replicated by researchers with other perspectives on climate change. Fourth, beyond reliability, this approach is also flexible. Researchers can choose to focus on more regional or niche issues like geothermal development or on more global climate change policies. In combination, these aspects provide an approach that seldom exists in social sciences: researchers' examination of climate change topics – which are heavily loaded with values and emotions – can be insulated from their personal stances. This approach offers transparency, validity, reliability, and flexibility that can inoculate researchers against accusations of "fake news," bias, or peddling conspiracy theories.

Additionally, beyond face validity, the relational quality of the data allows researchers to produce visualizations that capture a high level of complexity of the phenomenon while showing specific positions of each organization. Enriched with such additional information and explanations, these visualizations might function as translational tools from science into the public sphere. For example, associations, NGOs, and media organizations might use the available data to

assess their impact on other organizations when it comes to the diffusion of concepts to reduce fossil fuel emissions or to adapt to climate change. When an organization connects to others through joint venturing or joint media releases, they can observe the influence that this might have on subsequent discussions or business relationships.

Despite the opportunity to influence policies with our organizational issue field approach, we prefer to focus on theory building, data collection, analysis, explication of mechanisms, and communication of observations. In doing so, we can support climate change policy discussions rather than becoming activists ourselves.

Conclusion

Differing conceptions of "field" – organizational fields and issue fields – have been used in economic sociology and organizational research more broadly. These conceptions bring certain theoretical and empirical elements into focus. For climate change, an organizational field approach highlights the players, event structures, processes, and policy/regulatory outcomes to reveal how the field is changed or maintained – such as among those at the United Nations Framework Convention on Climate Change Conference of Parties (UNFPCC COP) meetings (Schüssler et al. 2014). Yet, organizations or individuals who are outside the field (i.e., not at the COP meetings) are not captured. Conversely, an issue field approach foregrounds the discourse around a central issue, rather than the players within a market, industry, or event (Hoffman 1999; Meyer and Höllerer 2010). Field boundaries shift, depending upon how the issue is framed and defined and by whom. Yet, those who are silent, but otherwise influential, are not captured.

Combining these two approaches equips researchers to examine how players construct and leverage scenarios to create coalitions (or not) and change institutions, such as those supporting energy transition efforts (Schmid et al. 2017; Schmid, Knopf, and Pechan 2016). This combined organizational issue field approach considers: 1) organizations that are inside *and* outside the organizational field but still part of the debate; 2) organizations' framings *but* also their relative positioning; and 3) organizations that are connected, intentional, agentic in asserting their definitional authority, *but* also players who are more peripheral, unintentional, or nonstrategic that are attempting to define a (still) amorphous issue. This allows us to understand better how the climate change field is affected by broader debates, an expanded set of players, their positioning, and their resultant actions. Our organizational issue field approach equips economic sociologists to examine the relationships between culture and power, state and economy and civil society, and stasis and change.

In sum, our paper advances an approach of capturing organizational issue fields that articulates the drivers and implications of climate change initiatives. We hope that this inspires and motivates usefully insightful research to address our climate crisis.

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