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Theorising unconventional climate advocates and their relationship to the environmental movement



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Environmentalism-identified advocates have contributed to high levels of public support for climate action across countries. However, there remain important holdout constituencies that theory and evidence suggest are less likely to be persuaded by environmentalists, especially constituencies associated with resources and economic production, rural and regional areas, masculine norms, and conservative belief systems and politics. Emerging from these holdout constituencies, though, are some novel advocates for climate action. In this paper we theorise ‘unconventional climate advocates’ as those who combine advocacy for climate action with a social identity that departs from the prototypical environmentalist identity. Using social network analysis we show that unconventional climate advocates in Australia are peripheral to the main environmental movement, that is, the conventional advocates for climate action. We contend that unconventional advocates can broaden the social base of support for climate action, and their independence from conventional advocates – environmentalists – may aid in their efforts.

Warnings from the scientific community about unmitigated climate change have grown in urgency (for example, see¹). Despite this, publics around the world have not unanimously demanded emissions reductions in line with scientists’ recommendations for a safe future climate. Instead, while a majority of the population of countries around the world believe in anthropogenic climate change^{2,3}, many publics remain divided between those who support rapid decarbonisation, those who are uninvested, and those resistant or even hostile to action on climate change. Particularly in advanced capitalist democracies, like the US and Australia, divisions on climate opinion mirror partisan political cleavages⁴ making holdout constituencies potentially important voting blocs that inhibit the establishment of the broad base of social support necessary for durable climate policies and action⁵. The importance of coalition building to achieve a ‘climate majority’ of those supportive of immediate action has been identified by many⁶. This is particularly the case for climate and environment issues, which have been identified as requiring collective action strategies which seek to grow the support base for the cause⁷, necessitating engagement across social divides⁸.

Theory and mounting empirical evidence have emphasised the importance of identity-aligned messengers for effective climate engagement^{9,10}. For example, Goldberg et al.¹⁰ found politically-conservative advocates for climate action to be effective with politically-conservative

constituencies in the United States. A challenge is that for many key holdout constituencies the aligned social identities are conventionally associated with climate hesitancy rather than climate action. Therefore, when messengers advocating for climate action come from within holdout constituencies, such messengers are likely to be perceived as adopting a non-stereotypical, and even perhaps counter-normative position. Thus, such messengers are ‘unconventional’ in the sense that they raise the cause of climate advocacy within a social identity that is stereotypically positioned in conflict with that cause. Little is known about whether and how these unconventional advocates become engaged with climate change, their influence on identity-aligned constituencies, and how they are positioned in relation to conventional advocates for climate action. In this paper we theorise that ‘unconventional climate advocates’ could play a key role in social change by being better placed than conventional advocates to engage holdout constituencies on climate (Box 1), and empirically explore the latter question regarding their relationship to the environmental movement.

First, we establish our theorising by drawing on literature from social psychology. We then identify examples of unconventional climate advocates from a contemporary environmental context and use social network analysis to explore how they are positioned in relation to conventional advocates for climate action. Drawing on our theorising and social network analysis we consider the implications for climate engagement and

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Box 1: | Key concepts

Conventional advocates: The conventional advocates for climate change are those associated with the stereotypical environmentalist identity. They are conventional in the sense of who they are, not their actions.

Unconventional advocates: Unconventional advocates are those who advocate for climate action from within a social identity that is not the prototypical environmentalist identity.

Conflict-spanning unconventional advocates: A type of unconventional advocate that is positioned within an identity with a history of tension or conflict with environmentalism, environmentalists, and environmental issues, who as a result spans the conflict between their social identity group and the cause of climate action.

Role-based unconventional advocates: A type of unconventional advocate that is positioned within an identity that does not have a history (or reasonable social expectation) of conflict with environmentalists but is not typically associated with climate advocacy, thereby challenging or broadening the perception of who engages in climate advocacy.

Holdout constituencies: Social categories that may be defined by any salient dimension of identity (e.g. sector, geography, gender, values, politics), which exhibit, or are typically expected to exhibit, lower levels of support for climate action compared to the broader publics within which they exist.

communication and outline an agenda for research on unconventional climate advocates.

To situate unconventional advocates in the context where data were collected, we begin with an exploration of the Australian climate debate. Climate change and climate policy have a troubled past in the Australian public and political spheres. Australia was the first developed nation to repeal a price on carbon¹¹, climate change has been implicated in the overturn of several Prime Ministers^{12–14} and Australia has, for multiple years, been singled out by the international community for climate action recalcitrance (e.g.^{15,16}). But, in 2021 under a conservative (Coalition) government Australia committed to reaching net-zero emissions by 2050. Following a change of government to a centrist (Labor) administration in 2022, an increase to the ambition of the 2030 emissions reduction target has also been formalised with the United Nations Framework Convention on Climate Change and accompanied by a range of other policy measures to accelerate the transition to a ‘net zero’ economy¹⁷. At the same time, new fossil fuel projects continue to be approved.

Throughout the ups and downs of climate policy and politics, advocates for action on climate change have made important gains in raising public awareness, as illustrated by research and public polling indicating that since 2018 a stable majority of Australians support action on climate change^{18–20}. The gains are all the more remarkable given that advocates for climate action have had to work against the entrenched influence of the fossil fuel sector in Australian politics and its prominent opposition to climate and environmental concerns^{21–25}, polarisation of climate change in the media^{26,27}, and increasing criminalisation of protest by state and federal governments^{28,29}.

The advocates who have conventionally advanced the climate action agenda in Australia include a broad range of actors ranging from localised community groups through to non-governmental organisations with a national reach^{30,31}. Although not without exception, advocates for climate action have been stereotypically aligned with left-leaning politics, environmentalism and the ‘environmentalist’ identity: the prototypical climate advocate is a politically-left aligned person who identifies as an environmentalist³².

Even with majority support for climate action in Australia, some social constituencies have proved more challenging than others to engage on climate change, with research and opinion polling yielding lower levels of support for climate action, and representative organisations tending toward climate hesitance or even outright denial. Given the importance of establishing a broad and durable social basis of support for climate action, constructively engaging these constituencies on climate change is essential. Key holdout constituencies identified in Australia include political conservatives^{4,33,34}, the business sector^{23,24,35}, farmers^{36,37}, resource industry workers^{38,39}, and some religious denominations^{40,41}, and social institutions characterised by masculine norms such as competitive sport^{42–44}.

We propose in this paper that although the specific relationship between each of the consistencies and climate change is unique, threads that

weave across the constituencies include economic and resource production, rural and regional areas of operation, masculine norms, and partisan alignment with conservative belief systems and politics.

We propose that among these climate hesitant constituencies it is less likely that stereotypical environmentalist-identified climate advocates will be influential, in comparison to the gains they have made amongst other constituencies in the Australian public. For these constituencies, unconventional climate advocates may hold a unique and special influence.

Our proposition rests on a growing body of work in social identity models of communication, which predict that audiences who do not share the ‘environmentalist’ identity are less likely to be persuaded by messages coming from an ‘environmentalist’ identified source^{9,45–47}. A shared “social identity” or sense of “we-ness” signals shared norms, interests, and values. Accordingly, messages about causes that are associated with a distinct social group can fail to resonate with people that do not identify with that social group due to the expectation that the cause is not “for them”^{48,49}. In other words, if a person considers environmentalists to be an untrustworthy social “other”, then causes closely associated with environmentalists are unlikely to be embraced due to suspicion about the environmentalist advocate affecting perceptions of the cause itself³².

Studies of persuasion show that when a dominant social group is seen to hold attitudes counter to one’s own attitudes, greater processing of the premise for the attitude tends to follow compared to if the attitude was associated with a niche or fringe group^{50,51}. Importantly, dominant or fringe group status is relative to the message receiver’s experience of the social world, and a group that is dominant in one context will not necessarily be dominant in another. For instance, some demographic minority groups – such as farmers (approximately 1.2% of the Australian workforce in 2016^{52,53}) – may be experienced as dominant groups in a person’s life due to the composition of their social network or place of residence. To illustrate, a person living in a regional community in which farmers are the dominant social group can be expected to invest more cognitive energy in considering a persuasive argument – for instance regarding climate change – from the dominant ‘farmer’ group than from a fringe outsider group such as ‘environmentalists’, who are locally thin on the ground. Such social dynamics are only more pronounced in the modern era, as the behavioural and algorithmic tendencies of online social media enable the construction of opinion-aligned ‘echo chambers’⁵⁴.

An early experiment in minority influence found that a message from a relevant lower social power group was less likely to be persuasive because of a suspicion that the messenger is self-interested⁵⁵; in this case ‘environmentalists’ would be the relevant lower power social group. The implication is that a person or group advocating for a cause that is not stereotypically aligned with their identity may be perceived as more credible as they are seen as advocating for something that departs from their anticipated self-interest. Further, when a message comes from a surprising source, disconfirmation of expectations about group interests is thought to cause message recipients to pay more careful attention to a message,

compared to when the message comes from an unsurprising source that confirms expectations about group interests⁵⁶. In other words, if a person expects farmers to oppose action on climate change and environmentalists to support it, when they hear a farmer advocate for climate action, they are more likely to attend to the message than if the same message came from an environmentalist.

From this theoretical perspective, the capacity to increase support for a movement amongst novel constituencies may be greater for a sub-set of climate advocates that are explicitly identified with social constituencies that are *not* environmentalists. We label these *unconventional advocates*, as they combine advocacy for climate action with a social identity that departs from the prototypical environmentalist identity. We position unconventional advocates in contrast to *conventional advocates*, who are stereotypically associated with an ‘environmentalist’ identity. We label these advocates conventional in the sense that the issue of climate action remains within the bounds of what is a socially expected cause for the group to support; they are the “usual suspects”⁵⁷. In other words, they are conventional in the sense of *who they are*, not what they do.

In the present paper, we further delineate between two types of unconventional advocates. Of particular interest are those unconventional advocates who position themselves within an identity with a *history of tension or conflict with environmentalism, environmentalists, and environmental issues*. We consider these to be conflict-spanning unconventional advocates because, by advocating for climate action, they span the divide between the cause of climate action and the historically stereotypical opponents of climate action. Conflict-spanning unconventional advocates whom we observe in the Australian public debate are those reaching out to political conservatives (the Blueprint Institute, the Coalition for Conservation), farmers (Farmers for Climate Action), resource industry workers (the Hunter Jobs Alliance), the corporate sector (the Investor Group on Climate Change), sports fans (FrontRunners), and religious people (the Australian Religious Response to Climate Change).

A second type of unconventional advocate that we propose is important to study is those that advocate from an identity that does not have a history (or reasonable social expectation) of conflict with environmentalists but is not typically associated with climate advocacy. Thus, through their social category identity, the advocates challenge or broaden the perception of who engages in climate advocacy. We label these actors role-based unconventional climate advocates. Examples of role-based unconventional advocates for climate change action whom we observe in the Australian public debate include parents (Parents for Climate Action), doctors (Doctors for the Environment), veterinarians (Vets for Climate Action), and firefighters (Firefighters Climate Alliance). While both groups of unconventional climate advocates are engaging with social constituencies based on a role, the conflict-spanning UCA *also* are contextualised within a legacy of conflict on climate action.

At present, little is known empirically about the conduct and effect of these unconventional climate advocates, including both conflict-spanning and role-based. Are they more likely than conventional advocates to foster a broad base of public support? Do their messages resonate with different segments of the population? Is their place in the climate debate accepted or contested by conventional advocates? The answers to these questions are not straightforward.

From a mainstream perspective, it is possible that unconventional advocates may not be perceived as authentically representing their group, and so their messages will be unpersuasive, just as those who breach a relevant social norm may be subject to sanction⁵⁸. For example, farmers arguing for climate policy may be seen as fringe members of the farming community and their messages therefore ignored by other farmers (e.g.⁵⁹). Climate policy messages coming from the finance sector may be treated with cynicism, with some audiences suspecting greenwashing (for example^{60,61}). It is even possible that the only people paying attention to unconventional advocates are the already ‘climate convinced’ audiences, because the messages align with their pre-existing views.

Given our present paper is – to our knowledge – the first to advance a definition of unconventional climate advocates, it is perhaps unsurprising that there is no existing specific literature addressing these questions. In this paper, we provide a first exploration of unconventional climate advocates. Using the Australian context as an example, we conduct a social network analysis that explores the place of the unconventional advocates in relation to the broader environmental movement (the conventional advocates for climate action). From this social network analysis, we consider whether unconventional advocates may be growing the social basis of support for climate action towards new social constituencies. Based on our study of the Australian context, we draw broader implications for climate advocacy and engaging across social divisions and identify research priorities for those seeking to contribute to an understanding of unconventional climate advocates in Australia and elsewhere.

Results

Social network analysis

To understand the nature of the relationship between unconventional and conventional advocates, we conducted social network analyses examining climate advocates in the Australian context with the use of an existing database of the Australian environmental movement³⁰. This database provided the conventional advocates in our analysis, and unconventional advocates are included based on our observations of those active in the Australian public sphere. We conducted analyses both within a ‘wider network’ (inclusive of all conventional and unconventional advocates and non-advocacy environmental groups), and network analyses within the relevant sub-networks (conventional advocates, conflict-spanning unconventional advocates, role-based unconventional advocates). Each of the sub-networks was established by first selecting the advocacy groups of interest, and then populating the network with all advocates of that type *and* all other groups in the database to which they are connected. We based our network analysis on data we collected from the groups’ publicly available statements on their websites about their associations with other groups, for instance reporting a formal association such as being a ‘partner’, ‘member’ or ‘affiliate’ or a hierarchical association such as being a ‘local group’, ‘branch’, or ‘chapter’. Below, we present a network diagram and key network statistics that provide descriptive insight into the position of unconventional advocates in relation to the conventional advocates for climate action in Australia.

We present descriptive network statistics for each category of advocacy groups (conventional advocates, conflict-spanning unconventional advocates, and role-based unconventional advocates) (Table 1). Amongst the

Table 1 | Advocacy (conventional, role-based unconventional, conflict-spanning unconventional) and non-advocacy (on-ground environmental action) groups included in the analyses

Unconventional advocates		The environmental movement		Total
Conflict-spanning	Role-based	Conventional advocates	Non-advocacy engaged environmental groups	
8 (12 including branches)	14 (76 including local/sub-groups)	1463	1670	3221

Note: Multiple counts are given for the unconventional advocates to reflect that some groups may be counted as the absolute total treating all groups as equal (for instance, counting many localised chapters of Australian Parents 4 Climate Action equally as individual groups in the same way that a single national group like Farmers for Climate Action may be counted), or by subsuming the sub-groups (such as the local chapters of Australian Parents 4 Climate Action into just the ‘parent’ group, i.e. a single count for the national Australian Parents 4 Climate Action inclusive of all its local chapters).

groups of most interest to us—the unconventional advocates—we differentiate between the total number of groups and the number of groups when branches, localised groups, and subgroups (such as local chapters of ‘Australian Parents 4 Climate Action’) are subsumed into their ‘parent’ groups. In our results, we discuss the unconventional advocates with subgroups subsumed, though we include descriptive network statistics for both approaches.

Figure 1 presents the full network of all climate advocates and their connections, visualised using Gephi. The network diagram highlights unconventional advocates with large nodes, displays all other groups included in the environmental movement as small nodes, and reports the associations between them as lines connecting the nodes. The visualisations: (a) suggest the story above that unconventional advocates are less publicly connected with the environmental movement; (b) identify role-based unconventional advocates as comparatively more publicly connected than conflict-spanning unconventional advocates; and (c) allow interested readers to consider the specifics of *how* particular advocates’ groups do and do not cluster.

Two clusters of role-based groups can be seen on the graph: Australian Parents 4 Climate Action and Labor Environment Action Network. While these have many subgroups, unlike other role-based unconventional advocates such as the Climate and Health Alliance and Surfers for Climate Action, they have few connections to the wider network. Most conflict-spanning unconventional advocates have one or two connections to conventional or role-based unconventional advocacy groups. The exceptions include the Investor Group on Climate Change, which has nine connections to conventional advocacy groups, while the Australian Religious Response to Climate Change is listed as a partner, member or alliance member of eight conventional advocacy groups including the Stop Adani Alliance, Climate Emergency Declaration and the Leard Forest Alliance and has three local sub-groups of its own (in the Australian states of Queensland, Victoria and

Western Australia). Comparison of mean degree statistics in Table 2 descriptively highlights differences in how publicly connected groups are *within* the network of each of the three advocacy group types. Each of the networks is a subset of all the groups included in the database, as the networks were created by selecting all the groups of interest for each type plus all the groups from the database with which any of the groups of interest have public connections (regardless of the group type). In other words, the network for conflict-spanning unconventional advocates contains all groups we identified as conflict-spanning unconventional advocates plus any groups from the database of the Australian environmental movement with which any of the conflict-spanning unconventional advocates report connections.

The conventional advocates’ network has a mean degree of 1.286. In comparison, role-based unconventional advocates have descriptively fewer public connections to other groups (1.159 mean degree), and conflict-spanning unconventional advocates have the fewest (0.939 mean degree). This indicates that unconventional advocates are, at least publicly, less connected to other advocates compared to conventional advocates. The conventional advocates network also has higher modularity (0.791) than the role-based unconventional advocates network (0.514) and conflict-spanning unconventional advocates network (0.659). Descriptively, these statistics indicate that the conventional advocates have a greater tendency to form clusters or ‘modules’ of groups that are closely connected within the module, but less connected to other groups outside of the module. Taken together, the statistics suggest not only that conventional advocates are more publicly connected, but also that they have a greater tendency towards forming cliques or clusters, than either type of unconventional advocate.

Discussion

To our knowledge, our research presents the first theoretical and empirical exploration of unconventional climate advocates. We present a con-

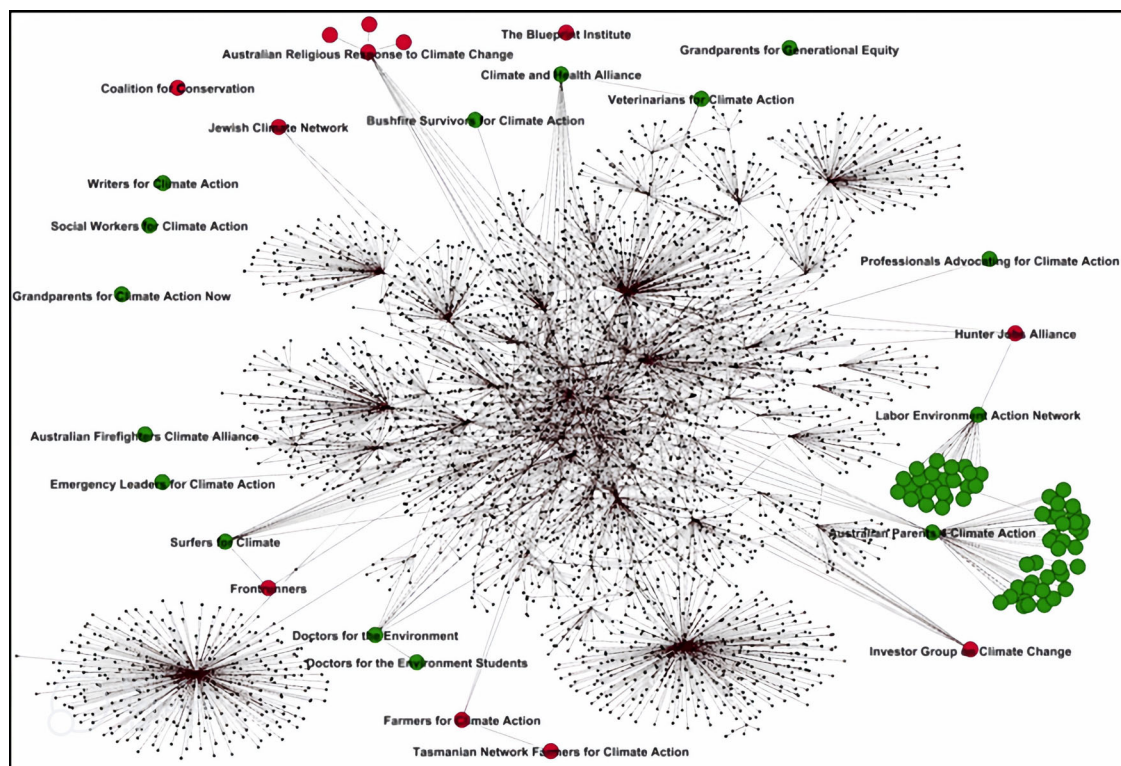


Fig. 1 | Network of climate advocacy groups and their connections. Note: Green nodes indicate role-based unconventional advocates, red nodes indicate conflict-spanning unconventional advocates. Unshaded nodes are all other groups in the network, which is comprised of groups included in a pre-existing

database of the Australian environmental movement. Lines indicate connections between the groups (i.e., ties between the nodes), taken from publicly available statements on the groups’ websites and Facebook pages.

Table 2 | Key statistics for networks, each of which includes conventional, role based unconventional and conflict spanning unconventional advocates respectively, plus the other groups to which they are connected

Network statistic	Conventional advocates network	Role based unconventional advocates		Conflict spanning unconventional advocates	
		Role based unconventional advocates with subgroups subsumed	Role based unconventional advocates with subgroups separate	Conflict spanning unconventional advocates with subgroups subsumed	Conflict spanning unconventional advocates with subgroups separate
<i>N</i> (number of vertices)	3134	44	105	33	37
<i>E</i> (number of directed edges)	4029	51	112	31	35
<i>⟨d⟩</i> (mean degree)	1.286	1.159	1.067	0.939	0.946
Max (<i>K_{in}</i>) (maximum indegree)	22	9	9	6	6
Max (<i>K_{out}</i>) (maximum outdegree)	311	10	36	9	9
Modularity	0.791	0.514	0.648	0.659	0.663
<i>C</i> (mean transitivity or clustering)	0.040	0.010	0.004	0.000	0.000
Average path length	4.968	2.418	2.603	1.635	1.786

Note: Number of vertices for each of the networks differs from the number of groups in the network category as the networks contain both groups in the advocate type, and the groups from outside of their advocate type to which they are connected. Key statistics for unconventional advocates are reported with all groups treated as nodes, and additionally with sub-groups subsumed into the parent node. *N* (number of vertices); the number of nodes. *E* (number of directed edges); the number of connections between nodes. *⟨d⟩* (mean degree); the average number of connections of each node. Max (*K_{in}*) (maximum indegree); the number of incoming connections to the node with the highest number of incoming connections. Max (*K_{out}*) (maximum outdegree); the number of outgoing connections to the node with the highest number of outgoing connections. Modularity: a measure of the extent to which nodes within a network exist within clusters (higher modularity indicates a greater tendency toward clustering within the network). *C* (mean transitivity or clustering): A measure of how often nodes that are connected to the same node are also connected to each other. Average path length: A measure of how closely connected the network is as a whole.

ceptualisation of unconventional climate advocates as those who advocate for action on climate change from an identity position that is not a stereotypical 'environmentalist'. The social network data support the claim that unconventional advocates are on the periphery of the environmental movement, who we consider to be the conventional advocates for climate action. Compared to conventional advocates, unconventional advocates share fewer links to other climate actors; and they are less centrally positioned.

What might this mean? One conclusion is that these unconventional advocates will be comparatively ineffective, due to not being connected with the network of conventional advocates. A lack of shared narratives and resources may undermine their capacity for coordination with the movement and for action. It is well established in the social movements literature that networked relationships between movement actors permit the flow of resources, strategies, and messages⁶². Further, movements seeking to advance some form of social change are most effective when they present messages that are coherent across the range of actors advocating for change⁶³. It is possible that the peripheral place of unconventional advocates could be due in some cases to their relatively new emergence in the Australian climate movement landscape, such that they haven't yet fully grown their connections within and beyond.

In our view, a more likely conclusion is that some of the unconventional advocates are deliberately distanced from the environmental movement. In a context where an environmental identity might not be influential with some holdout constituencies (e.g.^{48,64}), keeping apart from the main environmental movement might be an important part of achieving influence with their target audiences (e.g.⁹). For instance, in Australia there is a long-standing narrative of hostile relations between farmers and environmentalists⁶⁵, which is buttressed by prominent episodes of conflict about live animal exports, land clearing, use of fertilisers, herbicides, etc. As climate and environmental concerns are associated with the environmentalist identity³², farmers who express opinions that would stereotypically be expected to be associated with environmentalists risk their views being dismissed due to the association with the conflictual outgroup of environmentalists. The social consequences potentially extend beyond their views being dismissed; in research with residents of a coal producing region in Australia, Colvin and Przybyszewski⁶⁶ found that some people feared that "publicly discussing any concerns about or negative impacts of the coal mining industry would lead to being socially ostracised and pejoratively branded as a 'greenie'" (p. 5).

In this context, the lack of connections to conventional actors and each other signals a potential strength for unconventional advocates, indicating that the group is successfully maintaining a degree of 'independence' or 'distinctiveness' from conventional advocates who may be seen as an outgroup, and potentially a foe, to this holdout constituency. The unconventional advocates are thus expanding the range of advocates for action on climate change into novel social identity niches. The successful growth of some unconventional advocates in comparative isolation from the main environmental movement implies that the groups are occupying new spaces to build and exert their differential influences in the climate action ecosystem⁶⁷. If our explorations and interpretations here are correct, it raises questions about how to understand the relationship between relatively un-networked actors advocating for a common cause: are they best understood as part of a common social movement? Diani's (1992) seminal definitional work on social movements emphasises the presence of networks between movement actors, centring the importance of interaction for advancing the movement. In the case of climate change, where the nature of the issue demands an expansion of the social base of support⁵⁷ rather than consolidation and mobilisation of current supporters, it may be that a publicly un-networked group of actors provides the diversity of voices and cross-identity appeal that is necessary to establish a durable and broad social base of support.

While this paper makes a novel contribution in that we theorise unconventional climate advocates and provide an initial mapping of their position in relation to the broader environmental movement, we note some

limitations of the research that also serve as opportunities for future research. First, the network connections between target groups were based on publicly documented associations between groups as per the groups' publicly available websites and Facebook pages. It is entirely possible that 'hidden' relationships of support and social learning between groups may exist, and if so, tell a different story. This particularly relates to the question of whether the apparent sparseness of public network connections implies a lack of interaction and exchange outside of the public gaze. As we collected these data manually, it is also possible that we may have missed some important connections (e.g. a missed connection could result in some groups being missed). However, we used a second round of coding to attenuate this risk. Further, we used our observations of advocates active in the Australian public sphere in combination with our theorising to identify the unconventional advocates included in the present study. Alternative conceptualisations of who are relevant unconventional advocates may yield results that depart from ours. We have also examined the unconventional advocates in relation to the environmental movement, taking the latter as the stereotypical or conventional advocates for action on climate change. Other network comparisons would likely provide additional perspectives of interest, for instance exploring unconventional advocates' network connections with groups that share the social identity (such as religious organisations, business groups, agricultural bodies, conservative political groups, and so on). We expect our study of unconventional advocates and their relationship to the broader environmental movement in Australia to be instructive for scholars and practitioners in other countries, especially those with holdout constituencies that mirror the patterns we have observed. Future research should interrogate this directly, and we suggest particular attention could be given to both comparison between our Australian findings and other similar cultural contexts, as well as specific exploration of comparison across cultural contexts. Alternative ways of exploring unconventional advocates such as through case studies, qualitative research, and experimental work, in Australia and other contexts, will offer fruitful insights into addressing the limitations we have noted about our current study.

We also note some other pressing questions for a novel research agenda on unconventional climate advocates. Understanding the strategies of these groups should be a priority: are they intentionally peripheral to the environmental movement, or working towards embeddedness and centrality amongst the conventional advocates? How might strategy differ based on the identity-context for each type of unconventional advocate? What conditions or events led to their formation? What impact do these groups have on target audiences, particularly holdout constituencies? Are they any more effective than 'environmentalist' identified advocates? Are they perceived as being legitimate or fringe members of their social identity groups? Do unconventional advocates manage to spread climate messages into otherwise climate-hesitant echo chambers? Does the presence of unconventional advocates potentially advance broad support for climate action whilst further entrenching group-based division (e.g. between environmentalists and holdout constituencies)? Does our distinction between conflict-spanning and role-based unconventional advocates offer clarity in practice? How do unconventional advocates manage the tension between a message and social identity that departs from social norms and stereotypes? If they do have an impact on target audiences and holdout constituencies that is different from conventional advocates, what mechanism is at play? Potential mechanisms include those explored in the introduction: a relatively straightforward influence resulting from a shared social category, or perhaps more attention being paid to the message because the unconventional advocate is a surprising source for the message. Such questions are well suited to a range of methods, including qualitative research with advocates and holdout constituencies, analysis of web and social media content (including imagery, comments, and 'shares'), and experimental work testing the impact of manipulations about source identity and message content. Research of this nature may help to identify practical steps toward establishing a broad base of social support for action on climate change, and identifying what role unconventional advocates may play.

Methods

In this paper we use social network analysis. This approach offers formal models to describe relationships between entities, and to enable researchers to identify ties between different actors within and external to a network, identify which actors are most central to a network and uncover commonalities between connected groups⁶⁸. Research indicates that the structural patterns of relationships between groups within a social network can impact the actors' behaviours⁶⁹. This approach permits us to examine the relationships between unconventional climate advocates and the conventional advocates of the environmental movement.

To undertake the analysis we examine network connections between 508 organisations engaging in climate advocacy in Australia. We used a pre-established dataset of environmental organisations created and maintained by R.E.G. in the author list, which provides the most comprehensive insight into groups which engage in advocacy, such as campaigning and lobbying, in Australia on environmental issues³⁰. This pre-existing database provides the conventional advocates in our study. We additionally identify unconventional advocates, based on our observations of groups active in the Australian public sphere. The unconventional climate advocates included in our study are:

- The Blueprint Institute: <https://www.blueprintinstitute.org.au/>;
- The Coalition for Conservation: <https://www.coalitionforconservation.com.au/>;
- Farmers for Climate Action: <https://farmersforclimateaction.org.au/>;
- The Hunter Jobs Alliance: <https://hunterjobsalliance.org.au/>;
- The Investor Group on Climate Change: <https://igcc.org.au/>;
- FrontRunners: <https://www.frontrunners.org.au/>;
- The Australian Religious Response to Climate Change: <https://www.arrcc.org.au/>;
- Australian Parents 4 Climate Action: <https://www.parentsforclimate.org/>;
- Doctors for the Environment Australia: <https://dea.org.au/>;
- Vets for Climate Action: <https://www.vfca.org.au/>;
- Australian Firefighters Climate Alliance: <https://australianfirefightersclimatealliance.org/>.

For the purposes of the current study we added the unconventional advocates to the database with the conventional advocates, and included classification of each group into this conceptual structure. As noted above, the database was a pre-existing resource created and managed by R.E.G. in the author list. When the database was first created, prior to commencing the analysis in the present study including unconventional climate advocates, the database was populated through purposeful and snowball searching of publicly available information about environmental movement organisations. Potential groups for inclusion in the database were first identified by reviewing the Australian Register of Environmental Organisations⁷⁰ which captures environmental organisations registered for donation tax exemptions, and then supplemented with a snowball search system to follow linked groups and networks where listed. Screening and keyword searching identified groups in the Register engaging in some form of advocacy or activism, and that had a web presence and focus on environmental issues. Groups' web content was downloaded and coded to construct a record of the type of activities undertaken by the groups. This database was progressively added to over two years and by 2022, the database included 508 groups engaging in climate advocacy in Australia, including the addition of 'unconventional climate advocates' that we identified as being of interest to the current project. The combination of searching a central register and iterative rounds of snowball searching over years has produced a comprehensive list of environmental organisations in Australia.

Data

The dataset for this project was created through analysis of the websites of each of the 508 advocacy organisations in the pre-existing database developed and maintained by R.E.G.³⁰. Website content was analysed specifically

to identify network links between groups in the database and to examine the nature of ties between unconventional advocates and the broader network of climate advocates. Our overarching research question is: To what extent are unconventional climate advocacy groups a part of, or separate to, the broader Australian network of conventional advocates for climate action?

To prepare the network data for analysis, website searching was undertaken by R.E.G. in June–September 2022 to manually record public statements of associations ('network connections') between groups. Network connections occurred in two overarching relationship types. The first relationship is between groups which are publicly and to some extent formally associated with another group, usually defined by terms such as 'members', 'partners', 'affiliates'. The second type of network relationship is found with groups which have their own 'subgroups', which can also be described as 'local groups', 'branches', or 'chapters'. To identify the full extent of these subgroups a search of Facebook groups was undertaken, as these subgroups may emerge at a faster pace than parent groups are able to list them on their websites. This parent-subgroup relationship is particularly prevalent in groups focusing on civil resistance – such as Extinction Rebellion – which may aim to achieve rapid mobilisation in civil resistance actions across multiple communities⁷¹. We found 49 advocacy groups structured this way (categorised as 'parent' groups), with a total of 1,043 subgroups between them (categorised as 'subgroups'). A total of 459 groups were categorised as 'distinct', that is, they are structured as individual groups with no parent or sub-groups.

At the conclusion of this process a total of 1551 advocacy groups were identified. Of these, we categorised 76 (4.9% of total) as role-based unconventional climate advocates and 12 (0.7% of total) as conflict-spanning unconventional advocates.

Furthermore, an additional 1670 environmental groups that were *not* engaging in advocacy (such as Landcare groups or groups such as the 'Friends of Yarra Valley Parklands') were identified. While these groups do not engage in advocacy, it is important to include them as constituents of the wider environmental movement. There are two reasons for doing this: first, these groups fit the definition of movement agents, namely they have a shared identity, they work together collectively and they are linked by network connections to other groups with shared characteristics⁷². Second, some groups within a movement may actively eschew the language of campaigns and lobbying to overcome negative stereotypes about activists or focus on more project orientated activities⁶⁴. An example of this are the many volunteer groups seeking to build renewable energy systems in local towns and communities, who do not frame their activities as campaigns yet seek to bring about change including new infrastructure and policy support. It is possible that unconventional advocates may also build network connections with these groups as well as groups that overtly engage in advocacy, and as members of the broader environmental movement it is thus beneficial to include them in the analysis.

A total of 2185 network connections were found amongst 190 advocacy groups (inclusive of the unconventional advocates), while there were 2025 network connections between 150 advocacy groups (inclusive of the unconventional advocates) with non-advocacy groups. The full list of environmental advocacy and non-advocacy groups and their network connections can be found in the Open Science Framework (OSF).

As the network was constructed manually through searching and documenting publicly available information about groups' connections, there is a risk that a missed connection or missing group might result in the network being represented inaccurately. While this remains an important limitation of our study to note, the reliability of the network data collected from the websites was ensured through a process of second coding, undertaken by A.A. in the author list in November 2022. Websites from 14% of all environmental advocacy groups from the dataset were visited and checked. A total of 278 new network connections were identified by the second coding process, in addition to the 4210 network connections identified in the first round of coding. We considered this to be a very small addition, some of which can be attributed to regular website updates as network connections change over time.

Analysis

Social network analysis was undertaken on Gephi, with network statistics presented on the OSF. Network statistics were calculated for three networks: conventional advocates, role-based unconventional advocates, and conflict-spanning unconventional advocates. Each of the three networks was constructed by first selecting all the groups that fit the category of interest (i.e. conventional advocates, conflict-spanning unconventional advocates, or role-based unconventional advocates), then including all other groups in the database that shared a connection with the groups of interest. In other words, the three networks analysed were the ‘sub-networks’ based around the different types of advocates of interest to our inquiry. For the networks, we were particularly interested in the mean degree (d) statistics as this provides a metric of the amount of connectedness within the network (total number of groups divided by the total number of connections in the network). Modularity was also of interest, as this describes the degree to which the network is comprised of ‘modules’ that have higher levels of connection within the modules than between the modules. We present these descriptive statistics of the network without conducting inferential analyses. We note that any inferential analyses may be subject to poor robustness or validity because the addition or removal of a single connection could affect conclusions drawn from hypothesis testing with networks containing so few nodes.

Data availability

Data are available on the Open Science Framework: <https://osf.io/6rhjw/>.

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Author contributions

R.M.C., R.E.G., W.R.L., and K.S.F. conceptualised the paper. R.M.C. wrote the introduction and discussion, and contributed to writing the results and methods. R.E.G. prepared the dataset and conducted the social network analysis, producing all statistics and the network diagram, wrote the methods and results, and contributed to writing the introduction and discussion. A.A. provided data checking and cleaning, and supported the social network analysis. W.R.L., K.S.F., S.J.B., X.W., and A.A. contributed to writing the paper. All authors read and approved the final manuscript.

Competing interests

The authors declare no competing interests.

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