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A Part of the Energy “In Crowd”

Changing People’s Energy Behavior via Group-Based Approaches

ONE OF THE MOST CRITICAL AND PRESSING SOLUTIONS NEEDED TO ADDRESS global climate change is the transition to secure, affordable, and sustainable-energy systems. This transition is usually considered a technological challenge because it involves the integration of renewable energy, a trend toward decentralizing energy generation, and more demand-side participation. However, involving consumers in the transition is crucial for its success. For example, sustainable-energy transitions may require consumers to adopt sustainable-energy sources, technologies, and energy-efficiency measures as well as change their direct and indirect energy use behaviors to the limited and fluctuating supply of (renewable) energy. However, such behaviors may not always be easy for consumers to adopt, as they can entail personal sacrifice and discomfort or require them to change habits or infrastructure, which can be cognitively and financially demanding. To guarantee a sustainable future for all, it is critical that we understand *what* motivates consumers’ energy behaviors and *how* we can promote consumers’

By Lise Jans, Thijs Bouman, and Kelly Fielding

motivation to engage in sustainable-energy behaviors and act beyond immediate personal interests.

Most approaches to promote sustainable-energy behaviors conceptualize people as individuals motivated by self-interest. Yet, the social context—and in particular the groups people are part of—play an important role in how people think and behave, even though they often don't realize this. We do not live in a social vacuum. Rather, we are members of various groups—friendship, professional, and community—that have the potential to influence our energy attitudes and behaviors. For instance, when you buy an electric vehicle, you may feel that this was your decision, yet the fact that most people in your neighborhood have an electric vehicle may have (consciously or unconsciously) motivated you to buy one too. In this sense, the adoption of an electric vehicle is not merely an individual decision; it may be motivated by the fact that you belong to a particular neighborhood. Your membership of that neighborhood group can guide your actions, in this case whether or not to buy an electric vehicle. In addition, the adoption of an electric vehicle could also signal to others that you belong to a particular group, namely, the group of people who care about sustainable energy (assuming electrical vehicles are good for sustainability). This example illustrates that people's sustainable actions and attitudes can be guided by the groups to which they belong (see Figure 1).

In this article, we will discuss how groups and group-based approaches can be used to promote more sustainable-energy behaviors among group members. We will first outline the key theoretical lens within social psychology—the social identity approach—that provides an understanding of why groups influence attitudes and behaviors. We will then discuss how this theoretical lens enables a better understanding of energy-related attitudes and behaviors. We will use these insights to discuss different group-based

approaches to encourage sustainable-energy attitudes and behaviors. We hope these insights enable readers to better assess the important role of groups in promoting a sustainable society and help them to better take into account the human dimension of the sustainable-energy transition in their professional practice.

How Can Groups Influence Energy-Related Attitudes and Behaviors?

A central proposition of the social identity approach is that our self-concept is made up of both personal and social identities. Our personal identity is comprised of the distinctive and idiosyncratic aspects of ourselves that makes us different from others. Social identities, on the other hand, are the identities that arise from membership in specific social groups. For example, a reader of this article may have a self-concept that is made up of the social identities of being a woman, an electrical engineer, and a member of the IEEE Power & Energy Society. Our social identities can relate to large social categories like gender, profession, or nationality, to small groups such as friendships or work group, and to medium-sized groups such as a neighborhood or a school. The social identity approach contends that our membership in any of these groups can influence how we think and behave.

The social identity approach outlines the conditions under which our membership in a specific group (i.e., our social identity) will influence our attitudes and actions. When the situation makes our personal identity come to the fore, we define ourselves in terms of our distinctive attributes, and our behavior is driven by individual motives. As an example, a conversation with another electrical engineer that highlights that you are someone who cares strongly about the environment, whereas he/she does not, may activate this personal identity (“I”) and influence your decision about whether to invest in sustainable-energy technology (see Figure 2 for an illustration of salient personal identity).

In contrast, when a particular social identity becomes salient, our personal identity is pushed to the background and we define ourselves in terms of this group membership; we internalize the content of that group identity (i.e., its needs, goals, norms, and values), and our attitudes and behaviors are driven by the group's motivations. Group members are also more likely to communicate with and influence each other as well as cooperate and act collectively to pursue their group's interests. Group members' relations with other groups can also change. Members aim to see themselves as positively distinct from

figure 1. Engaging in sustainable-energy behaviors, such as the adoption of an electric vehicle, may well be influenced by the group(s) of which you are a member. (© Marlies Bouman, used with permission.)

The social context—and in particular the groups people are part of—play an important role in how people think and behave, even though they often don't realize this.

other groups (i.e., different and better than other groups) and may, under certain conditions, compete with or come into conflict with other relevant groups. As an example, imagine you and your colleague have been invited to an interdisciplinary climate change conference, and you are debating with social scientists about the best solutions to address the issue. In this situation, your social identity as an electrical engineer (“we”) will likely come to the fore, and the arguments you make will be consistent with your electrical engineering identity. You might even find yourself thinking that electrical engineers are more concrete and rational than social scientists, hampering the likelihood that you and the social scientists will reach an agreement (see Figure 2 for an illustration of this social identity salience).

The extent to which a social identity influences our sustainable-energy-related attitudes and behavior will depend on the extent to which the issue is relevant to the identity. The take away message from the social identity approach is that, to the extent that sustainability is relevant to it, social identity can strongly influence our sustainable attitudes and behaviors as well as who we collaborate or come into conflict with over energy-related issues. Which social identity becomes self-defining and influential depends on the person as well as the particular situation he or she is in.

With regard to the person, certain social identities (i.e., group memberships) may be more accessible to a person than other social identities, depending on the person's prior experiences with the group and his/her motivations. For example, the strength of identification that a person has with a group is important. Individuals who identify strongly with a particular group are more likely to define themselves in terms of this membership and be influenced by it than individuals who identify more weakly with the group. In the context of sustainable energy, research suggests, for example, that the more one identifies with a community energy group, the more willing he or she is to engage in sustainable-energy behaviors, independent of one's personal motivation to engage in these behaviors.

With regard to the social context, specific social contexts can

make certain group memberships stand out. People are more likely to be seen as a group when they are perceived as similar to each other and different from other people. This is why in the debates around climate change and climate change believers and sceptics are increasingly seen as two clearly distinct and opposing groups, in which members of each group are seen as increasingly alike and as increasingly different from members of the opposing group.

The social context can also influence the perceived content of the group's identity. Depending on the characteristics of other group(s) in a particular social context, the group's distinctive features can be fluid. For example, when the British compare themselves to Americans (whom they perceive to be less pro-environmental than they are), they are more likely to see themselves as pro-environmental and engage in behaviors aligned with this normative position than when they compare themselves with, for example, Scandinavians.

Furthermore, processes within the group can foster the experience of shared membership. Through interactions among members, individuals actively contribute to what the group is about and develop a consensus about important aspects of their group's identity. Particularly in new groups, interactions among group members are needed to establish what a membership entails and enable people to identify with the group. For example, interactions among community members may facilitate setting up or becoming engaged

figure 2. Whether people define themselves in terms of their personal identity, (a) “I” (or social identity) or (b) “we,” is dependent on the social context they are in. (© Marlies Bouman, used with permission, inspired by S.A. Haslam, S.D. Reicher, M.J. Platow, (2011). *The New Psychology of Leadership: Identity, Influence and Power*. New York: Psychology Press, 2001. ISBN 978-1-84169-610-2.)

The insights offered by the social identity approach provide suggestions for group-based approaches to encourage sustainable-energy attitudes and behaviors.

in community sustainable-energy groups and thereby developing a new social identity that can motivate sustainable-energy behaviors.

In summary, our group memberships (i.e., social identities) and the processes that relate to these groups can strongly influence our attitudes and behaviors related to sustainable energy. When a particular group membership becomes self-defining, personal interests are pushed to the background, and people's sustainable-energy attitudes and behaviors are motivated by the content of their group's identity (when sustainability is relevant to that group identity). This can promote cooperation among group members in the service of sustainability but also conflict between groups over energy-related issues. The influence of membership is particularly strong for people who highly identify with their group and when the social context makes them stand out as a group. These insights highlight the important role of group processes in the context of sustainability.

Group-Based Approaches to Change Consumers' Energy Behavior

The insights offered by the social identity approach provide suggestions for group-based approaches to encourage sustainable-energy attitudes and behaviors. To date, most interventions to promote sustainable-energy attitudes and behaviors target people as individuals, aiming to change their individual motivations (e.g., save energy to save money). Yet, the transition toward sustainable energy is inherently social and particularly suitable to be addressed by group-based approaches.

Evidence for this position comes first from the fact that the unsustainable usage of limited energy sources fostering climate change has often been defined as a collective problem. Collective actions of individuals and groups have caused the unsustainable usage of limited energy sources, and cooperation among individuals and groups is needed to transition toward a more sustainable-energy system. One example of the potential for cooperation can be found in Denmark, where the community on Samsø has made their island the first fully renewable energy-powered island in the world.

Second, evidence for the social nature of the sustainable-energy transition lies in the fact that different groups in society have contributed to and will be affected by this collective problem to different degrees. For example, whereas groups of higher socioeconomic status (e.g., large, often western, industrialized nations) are contributing to climate change

significantly more than groups of lower economic status, it is particularly members of economically disadvantaged groups (e.g., small island developing states) who will experience the harmful impacts of climate change the most. This enhances the likelihood that group memberships become salient in the context of sustainable energy and that group memberships influence one's position on sustainable energy.

The important role of groups and group processes in the context of sustainable energy makes evident why group-based approaches are particularly well suited for changing attitudes and behaviors in the context of sustainability. Addressing people as a group, rather than as individuals, can help them to overcome their differences and to act in accordance with their shared group membership in the energy domain. As we will discuss later, groups can either support or discourage sustainable energy, depending on their social identity content.

Social Identity Content: Supporting or Discouraging Sustainable Energy

Groups influence how we see ourselves, with whom we connect, and what kind of beliefs and behaviors we think are appropriate in a situation. Clearly, these influences depend on our shared understanding of what the group is about (its content), which is in part based on the group's values (i.e., general principles that are important for the group) and group norms (i.e., what is considered appropriate to do and think within a group). Sustainable attitudes and behaviors are most likely when group memberships are made salient in which sustainable values are focal and norms promote sustainable-energy behaviors. We will explain these two factors in more detail.

The Importance of Group Values

Group values indicate what a group stands for. For example, green political parties have protecting the environment as a central value whereas conservative political parties usually privilege economic growth. Group values are strongly intertwined with the group's identity, believed to be relatively stable over time, and are seen as underlying factors that consistently affect members' behaviors and beliefs. According to Schwartz's universal value theory, there is a set of values that can be found across individuals and groups worldwide. Individuals and groups endorse most of these values to a certain extent but differ in the way they prioritize them.

Two value clusters—self-enhancement and self-transcendence values—are generally considered to relate to

The transition toward sustainable energy is inherently social and particularly suitable to be addressed by group-based approaches.

environmental behaviors and beliefs. Values are relevant for groups as well as for individuals (for a discussion of individual values, see Steg et al. in this issue). Self-enhancement group values focus on benefits for the group and its members (e.g., pleasure, gratification of desires, power, and resources), whereas self-transcendence group values focus on the welfare of others and nature (e.g., social justice, being helpful, and respecting and protecting the environment). Generally speaking, the stronger a group endorses self-transcendence values, the more likely the members will act sustainably; whereas the stronger a group endorses self-enhancement values, the less likely that members will act sustainably. Self-transcendence and self-enhancement group values are often believed to be in opposition but can coexist. The relative strength of both value clusters determines which value is more influential for behavior.

Group values can be operationalized in two ways. First, and most commonly, group values can be operationalized as the aggregate of group members' personal values. That is, the group's value system equals the sum (or mean) of all the group members' personal value systems. Assuming that members actively contribute to what the group values through interactions, this appears to be a relatively objective way of measuring group values. This operationalization can be useful in characterizing groups and comparing them with each other, to identify what members, on average, value. By knowing that, arguments for sustainable-energy behaviors can be made more persuasively by tapping into these values. For instance, members of a community who, on average, endorse self-transcendence values more than self-enhancement ones may be more persuaded to invest in photovoltaic panels by arguments that fit with their group values (e.g., focusing on environmental benefits rather than on financial profits).

Second, group values can be assessed by asking members how strongly they think a typical group member endorses each value. This more subjective approach assesses how members *perceive* the values of the group. According to the social identity approach, this would be particularly likely to influence group members' behaviors as it is these values that people internalize when a particular social identity is salient. These subjective group values could also be more easily changed by the context or an intervention. For instance, making a community member aware that typical members place strong value on the environment and nature can strengthen the perceived self-transcendence values of

this group, which in turn can increase the willingness of this community member to invest in energy-efficiency measures.

The Importance of Group Norms

Often linked to the groups' core values, groups can have stronger or weaker norms, indicating whether sustainable-energy behaviors and beliefs are appropriate or inappropriate within a group (e.g., use energy efficiently or install energy-efficient technology). Group norms are more concrete than values and often focus on specific actions or behaviors. Whereas group values are believed to be relatively stable over time, group norms are more flexible, which makes them more suitable for interventions.

There are two main types of group norms: injunctive and descriptive. Injunctive norms describe which actions are approved of or desired by a group. For instance, an organization can state that employees should switch off their lights when leaving the office. For an injunctive norm to be influential, it should be clearly and strongly communicated and focal when the required action is desired. To be effective, injunctive norms should fit with the values of the group. If this is not the case, it could be seen as illegitimate, "greenwashing" (i.e., presenting the group as more sustainable than it actually is) and might exacerbate tensions between subgroups (e.g., they, the management, versus us, the employees).

Descriptive norms focus on what group members do in general. For instance, an employee observes that most colleagues switch off their lamps when leaving the office. When the desired behavior is clearly (made) visible, a positive descriptive norm could be very powerful in promoting this behavior. For instance, when all of your colleagues commute by public transportation to a meeting, you'll be more likely to also use it instead of your car. Descriptive norms might be particularly effective for group members who slightly underperform on the norm, since these individuals see others performing better. When someone already outperforms most other group members, confronting this individual with the behaviors of others (e.g., that you are saving more energy than others) could backfire if that person defines him or herself in terms of personal identity ("I'm doing better than others, so I don't need to try so hard"). However, when one accentuates that these behaviors are strongly valued by the group, well-performing group members are likely to feel good about their own performance, as it signals that they are exemplary group members. This

A central proposition of the social identity approach is that our self-concept is made up of both personal identities and social identities.

could increase the motivation to keep on performing well and motivate other members to change their behavior to align with the group's descriptive norm.

Note that the use of descriptive norms to change behavior needs to be approached with caution. Normative feedback must always be authentic; that is, accurate feedback must be provided. There is often a temptation to highlight that there is a problem by communicating a negative descriptive norm (e.g., people aren't saving energy); the problem with this is that it may send the wrong message to group members (e.g., "no one else is saving energy, so why should I?"). If it really is the case that people aren't saving energy, then it would be better to focus on communicating a strong positive injunctive norm.

Bringing Supportive Social Identity Content to the Fore

Groups can promote sustainable attitudes and behaviors among its members when the content of its social identity is supportive of sustainable energy. Therefore, for a group-based approach to change energy behaviors in a more sustainable direction, it is key that the group is clearly perceived to have sustainable group values (i.e., self-transcendence values) and norms (i.e., norms promoting sustainable-energy behaviors). This raises the question of how sustainable values and norms be brought to the fore.

One way to accentuate or even change the perceived values and injunctive or descriptive norms of a group is by introducing a particular comparison group (an out group). If a lack of environmental concern is a central characteristic of an out group, in-group members might come to see sustainable-energy behaviors as more normative and central to their group, as a way to positively distinguish themselves from the out group. For instance, after the United States withdrew from the Paris Climate Agreement, sustainable norms were emphasized in many other countries all over the world, such as Germany, China, and India (to name a few), potentially as a way to reinforce in-group values and differentiate from out-group ones. This also signals the importance of choosing the right comparison group; telling group members that other groups are behaving more sustainably than they are might not motivate group members to do "better." Rather it may lead members to assume that their group does not really care about sustainability, thereby decreasing, rather than increasing, the motivation to behave in a sustainable manner.

When aiming to accentuate or even change perceived values and injunctive or descriptive norms, group leaders can play a vital role. Such exemplar members can be very powerful in setting group norms and communicating group values. Leaders can advocate for sustainability, and their actions can provide a clear indication of what is normative and valued in relation to sustainable energy, thereby motivating members' sustainable-energy behaviors. However, the influence of leaders depends on the extent to which they are seen as prototypical members of their group, that is, typical and representative of the group as a whole. Hence, to promote sustainable behaviors, leaders should not only advocate for sustainability, but they should also make sure that they are seen as representatives of their group. They can do this, for example, by emphasizing the group membership they share with their followers, by using words such as "we" and "us," rather than "I" and "me."

In summary, the content of a group's identity, as reflected by its values and norms, can influence sustainable attitudes and behaviors. The "right" values and norms can be brought to the fore by changing the comparative context or having representative in-group members advocate for sustainability. Yet, in certain cases, the group may not value sustainability at all and may even endorse unsustainable behaviors. In these instances, it may be better to have people redefine themselves in terms of another identity, by making another group membership salient.

Bringing Supportive Groups to the Fore

As discussed earlier, groups can have a strong influence on members' behaviors, but only when the group identity is salient. Accordingly, a promising strategy to promote sustainable-energy behaviors is to make social identities that are supportive of sustainable-energy behaviors salient, fostering identification with these groups, and shifting the focus away from groups that do not support sustainable energy. This can be done as described previously, by reminding people of the similarities between groups that engage in sustainable behaviors and highlighting their differences from ones that do not. Other approaches to make these memberships salient and strengthen identification with these groups can be to stimulate positive interactions among members and have them focus on their common outcomes, rather than their individual ones. For example, feedback systems on energy usage often give assessments on an individual level; however, providing group-level feedback, say for the organization

as a whole or a particular neighborhood, can accentuate shared group membership and may foster the willingness to cooperate on problems of sustainable energy.

In addition to highlighting or focusing on existing group memberships, new groups can also be formed to further sustainable-energy actions. People can form groups with others holding similar sustainable-energy attitudes to advocate for sustainable-energy transitions. Groups focused on sustainable energy can attract new members, who can then be motivated toward sustainable-energy use. Thus, by creating or emphasizing shared group memberships, groups can influence the attitudes and behaviors of its members and foster cooperation among people in the context of sustainability.

Neighborhood groups that form to facilitate the installation of solar panels or meet to discuss ways to make their neighborhood more sustainable are examples of this approach in action (see Figure 3 for a picture of such a neighborhood initiative).

Although making particular group memberships salient can enhance cooperation among group members, it can at the same time make it more difficult for groups to cooperate on sustainability issues. Indeed, strong national identities are an important reason why negotiations between members of the United Nations to mitigate climate change are so difficult. In these negotiations, the focus seems to be on the subgroup identities of these different nations, and what is in the interest of these (national) subgroups, rather than on what is in the interest of the United Nations as whole. Highlighting shared group membership at a superordinate level can be a way to overcome such frictions and to foster cooperation for the greater good.

Summary

In this article, we have discussed the important role that groups play in the context of sustainable-energy issues and the important influence they have on people's attitudes and behaviors regarding energy. We have outlined the key theoretical approach within the field of social psychology to understand the influence of groups on people's attitudes and behaviors in general as well as specifically in the context of sustainability. Based on these insights, we have discussed different group-based approaches to encourage sustainable-energy attitudes and behaviors and foster cooperation around sustainable-energy issues. We hope these insights enable the readers, and in particular our colleagues in electrical engineering, to better assess the importance of group

figure 3. A neighborhood in Eindhoven, The Netherlands, in which neighbors started an initiative to increase energy saving and sustainable energy in their neighborhood. (©Buurkracht, used with permission.)

memberships in the transition to a more sustainable society and help them to better take into account the social dimension of the sustainable-energy transition when designing sustainable interventions.

For Further Reading

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