The sense of social influence
pluralistic ignorance in climate change
Michelsen Kjeldahl, Esther; Hendricks, Vincent Fella

Published in:
EMBO Reports

DOI:
10.15252/embr.201847185

Publication date:
2018

Document version
Publisher's PDF, also known as Version of record

Document license:
Other

Citation for published version (APA):
The sense of social influence: pluralistic ignorance in climate change

Social factors play key roles in human behavior. Individuals tend to underestimate how much others worry about climate change. This may inhibit them from taking collective climate action.

Esther Michelsen Kjeldahl & Vincent F Hendricks

We have been aware of the threat of anthropogenic climate change caused by the production of greenhouse gases for more than 50 years. Yet, emissions continue to increase at an alarming rate, resulting in dangerously high levels of CO2 in the Earth’s atmosphere. Our meager response is a puzzling phenomenon given what we stand to lose. It is apparent that something is holding us back from making a serious effort to adjust our carbon-intensive behavior.

“Merely focusing on stimulating individuals’ motivation for changing behavior—whether be it psychological, economic, or moral—may prove ineffective if there are other social forces involved as well.”

Indeed, our collective failure to comprehensively respond to climate change is not the only issue that appears in conflict with a broad scientific consensus. For example, recent studies show that a growing number of parents are applying for exemptions due to social pressure from other parents with strong anti-vaccine sentiments, despite the fact that routine childhood vaccines save thousands of lives every year [see Oraby, Thampi & Bauch (2014), recommended reading]. It is easy to dismiss such behaviors as irrational. However as C. T. Bauch, one of the researchers of the quoted study, notes: “Our research suggests that health officials need to have a really good understanding of the social context to better understand vaccine scares and why people refuse vaccines”. Reason and rationality are not the only driving forces for understanding collective attitudes and groupthink. We also need to consider aspects such as social pressure and the sense of social influence.

“Research shows that individuals tend to misjudge others’ beliefs about climate change.”

A well-known psychological explanation, known as the cognitive dissonance theory, suggests that individuals tend to adjust their beliefs rather than change their behavior once they become aware their behavior and beliefs are in conflict. This can be observed where individuals have strong anti-vaccine sentiments. It can also be applied to climate change, where the theory predicts that individuals prefer to adapt their beliefs and attitudes concerning climate change rather than change their carbon-intensive behavior. Such rearrangements include denying or doubting climate science, arguing that one’s personal emissions are too insignificant to make a difference, blaming “America” and “China”, arguing that global warming is not as bad as scientists say, and engaging in wishful thinking [for instance, see Shapiro, Rooney-Varga & Niepold (2017) and Hedberg (2018), recommended reading]. However, it seems clear there are more complex social phenomena in play as well.

“Being able to travel all over the world, buy new things, and so on, used to be regarded as an absolutely positive thing. But much has changed since 1959.”

What the above explanations have in common is an emphasis on the way individuals perceive and handle facts about climate change. Yet, merely focusing on stimulating
individuals’ motivation for changing behavior—whether be it psychological, economic, or moral—may prove ineffective if there are other social forces involved as well. Indeed, social psychology has shown that beliefs and actions of individuals are heavily influenced by what they perceive the actions and beliefs of their peers to be [see Myers (2014), recommended reading]. In social psychology, a concept known as pluralistic ignorance precisely describes situations where social forces overrule individual thinking and decision making.

Daniel Katz, Floyd H. Allport, and Margaret Jenness introduced the concept in 1931 to label and explain situations where group members, in an attempt to conform to a perceived “group opinion”, act contrary to their private opinions, attitudes, feelings, or preferences [1]. Later, the term came to be identified with the belief that one’s private attitudes and judgments are different from those of others, even though one’s public behavior is identical [2,3]. Furthermore, it has been used more broadly to describe situations where group members significantly underestimate the popularity of a majority opinion [4–6].

Social scientists have applied the concept to a number of real-life social situations to explain why harmful, unhealthy, or simply outdated social practices continue to be accepted despite being privately rejected by many of those partaking in the practices. For example, it has been used to explain the persistence of norms of racial segregation in the mid-1900s [1,5], of excessive drinking habits at universities [3], and the slow pace of the resolution of issues such as gender inequality [4]. In all these cases, the mere fact that individuals falsely believed most others supported the practices was sufficient for the individuals to comply with them.

Biased higher-order climate beliefs

Now, what are the private beliefs, feelings, and attitudes of the European, the USA, and the Chinese public concerning climate change? A recent Eurobarometer revealed that 92% of European citizens view climate change to be a serious problem and, of these, 74% view it as a very serious problem. Likewise, an even fresher report conducted by the Yale Program on Climate Change Communication and the George Mason University Center for Climate Change Communication showed that 73% of registered American voters think global warming is happening, that 59% think it is caused
mostly by human activities, and that 63% are worried about it [see European Commis-

sion (2017) and Leiserowitz et al (2018), recommended reading]. In China, no less
than 98% believe global warming is happen-
ing [7]. The majority of people living in
some of the most carbon-emitting areas of
the planet agree that climate change is real.

“The mere fact that

individuals falsely believe

most others support

carbon-intensive practices may

be sufficient for individuals to comply with them.”

At the same time, research shows that

individuals tend to misjudge others’ beliefs

about climate change. Most notably, a recent

examination of higher-order beliefs of Am-
erican and Chinese citizens and of political

and intellectual elites in the USA showed

that all groups greatly underestimated

the public’s pro-climate change beliefs [7]. Simi-
larly, another large study demonstrated that

Australian citizens generally overestimate

the proportion of people who think climate
change is not happening and, likewise,
 underestimated the proportion understand-
ing climate change to be human-induced
[6]. A third study showed that American

students systematically underestimated the

number of other people who believe climate
change to be a serious problem, and as a
consequence, they were less willing to
discuss the issue with their peers [8].

Remarkably, even climate change experts
have fallen victim to pluralistic ignorance: A
poll measuring experts’ estimates of the

opinions of other experts about the Intergov-

ermental Panel on Climate Change (IPCC)’s

2007 assessment of global sea-level rise indi-
cated a tendency to overestimate the climate
change optimism of other experts [9].

Causes of pluralistic ignorance

There are several theories about the causes
of pluralistic ignorance, many of which are
clearly applicable to the climate change
text.

One is that individuals take the opinions
of outspoken group members to reflect the
opinions of most others in the group [4]. In
cases where the most outspoken people hold
an opinion only shared by a minority within
the group, group members may get the false
impression that most others hold the minor-
ity opinion in question. In their 2011 book,

historians Naomi Oreskes and Erik Conway
found that a handful of professional climate

contrarians garnered a disproportionate
amount of attention in the media landscape
around the turn of the millennium. While
the views of climate contrarians were widely
refuted within the scientific community,
biased reporting created a distorted belief
that contrarians represented a large propor-
tion of scientists [see Oreskes & Conway
(2011), recommended reading].

Media bias may be explained by the
structural conditions of the current informa-
tion market. Information consumes the
attention of its recipients and, in the infor-

mation age, attention is a prime asset. This

generates an economy heavily geared toward capturing attention. Attention may
be converted into money, power, status, or

influence. Actors in this new market have

an incentive to speculate as to which infor-

mation will best attract audiences of, say,
online users, independently of whether the

information is true. This can create an envi-

ronment conducive to misinformation, fake

news, and agenda-setting in the media [for a
detailed analysis of the market of attention

in the information age, see Hendricks &

Vestergaard (2018), recommended reading].

Numerous robust studies confirm that our
attention is more likely to be captured by
content that rouses activity-mobilizing senti-
ments like anger, fear, and indignation [for
instance, see Berger & Milkman (2013),
recommended reading]. This has been
observed in many issues where there is a
strong consensus among the scientific
community. For example, minority views on
the alleged danger related to the human papillomavirus (HPV) vaccine in teenagers
have featured centrally in debates—despite
having no scientific grounding—as they feed
on people’s fear. This gives reporting on
such issues a false balance, as it provides

disproportionate airtime to what is very

much a minority view, elevating its status
alongside the views of the majority of scien-
tists. Similarly, the views of climate contrari-
ans have disproportionately dominated discus-
sions on anthropogenic climate
change for similar reasons—even minority
anger may turn into an attention grabber.

A second theory about the cause of

pluralistic ignorance relates to how humans
interpret and explain the behavior of others.
In a famous experiment, social psychologists
Dale Miller and Cathy McFarland showed
that pluralistic ignorance arises precisely
when individuals observed others who
behaved exactly like themselves but falsely
assumed that others’ behavior reflected
internal states or opinions that differed from
their own [2]. Here, the cause of pluralistic
ignorance is not that minority opinions are
too prominent in the social environment,
but instead that individuals silently attribute
opinions to others based on what they
observe their behavior to be. In wealthy
countries, where levels of consumption are
high, similar factors may be in force—afflu-
ent inhabitants, privately aware that their
lifestyle is unsustainable, may falsely infer
from observing similar carbon-intensive
behaviors of others that most people believe
this practice is acceptable.

“Interventions providing
correct information to the
public and policymakers about
the distribution of climate
opinions may be the key to
solving our current dangerous
collective climate inaction.”

A third, related explanation concerns
times of social change where individuals
gradually change their private opinions
about an issue, although the social struc-
tures do not change at the same speed. In
these cases, the social structures become
misleading in the sense that individuals
assume most others still support the old
practices, even though they themselves are
perfectly aware that the practices are
outdated [3,4]. For example, in David J.
Schwartz’s classic self-help book The Magic
of Thinking Big from 1959, he states:
“Success means many wonderful, positive
things. Success means personal prosperity: a
fine home, vacations, travel, new things
(…).” Being able to travel all over the
world, buy new things, and so on, used to
be regarded as an absolutely positive thing.
But much has changed since 1959. We now
have information in abundance available on
how damaging such a lifestyle is. Yet, the
majority of people still uphold these carbon-
intensive practices and—publicly—look up
to those who are “successful” in Schwartz’s
outdated sense of the term. This creates a misleading social environment where people are mistakenly led to think that most others do not view climate change as a serious problem—at least, not a problem so serious that individuals should make an effort to reduce personal emissions, and publicly demand political action.

**Consequences of pluralistic ignorance**

Studies in social psychology demonstrate that people’s perception of the social norm influences their behavior. If individuals mistakenly believe they are more or less alone in worrying about climate change, they may be less willing to reduce their personal efforts and openly demand political climate action. In other words, the mere fact that individuals falsely believe most others support carbon-intensive practices may be sufficient for individuals to comply with them. Early researchers of pluralistic ignorance hypothesized that social conformity leads individuals to alter their behavior to be in accordance with a misperceived group opinion. In other words, pluralistic ignorance may result in group members acting contrary to their own preferences and opinions [1]. Related to this point, philosopher Clive Hamilton and psychologist Tim Kasser stress that the fear of being ridiculed as an “eco-obsessive” may prevent worried individuals from changing to a more sustainable lifestyle [10].

Recalling the results from the public opinion studies in Europe, the USA, and China, it is likely that a vast majority of these public in fact want to make a greater effort to combat climate change but avoid doing so out of fear of deviating from a misperceived social norm. A distorted view of the public’s lack of climate concerns and support for pro-climate policies inhibits political action.

From a game-theoretical perspective, Matto Mildenberger and Dustin Tingley argue that individuals’ participation in actions that are individually costly but collectively beneficial may depend on their perceptions of others’ beliefs. If individuals do not believe others are willing to cooperate, their own motivation for cooperating likewise decreases: “actors may not invest scarce time or resources in political climate activism because they don’t believe their efforts will help elect a pro-climate political official, will help pressure an existing official to support some pro-climate policy or will help mobilize peers to engage in climate-friendly behaviors” [7].

Therefore, pluralistic ignorance about climate change may be a key factor in our hesitation to adjust our carbon-intensive behavior, on both individual and national level.

**What to do about it?**

By providing information about the true distribution of climate opinions, pluralistic ignorance may be corrected—for climate change, moral integrity, and obligations to reduce individual greenhouse gas emissions. Ethics, Policy Environ 21: 64–80

**A review and discussion of norm-based interventions to change behavior**


**Recommended reading list**

**On the history of climate science**


**On cognitive dissonance in climate change**


**On change as a “tragedy of the commons”**


**On the role of education to stimulate change of behavior**


**On the role of ethics to stimulate change of behavior**


**More empirical studies in pluralistic ignorance**


**A review and discussion of norm-based interventions to change behavior**


**Some recent public opinion studies on climate beliefs**

15. European Commission (2017) Special Eurobarometer 459: Climate change

**Societal pressure and the spread infectious diseases**

Pluralistic ignorance in climate change

Esther Michelsen Kjeldahl & Vincent F Hendricks

While it is difficult to directly measure if an intervention has caused overall behavioral change, it may be fruitful to look more closely at various subgroups in follow-up studies. Oftentimes, a certain proportion correctly perceives the majority opinion, but do not themselves agree with it. If they are provided with information about the true distribution of opinions, they probably will not change their behavior, since they are already to some degree aware of the true distribution. The interesting subgroups to look at from a post-intervention perspective are those who clearly have false perceptions of the majority opinion, and, even narrower, those who actually hold the majority opinion but mistakenly believe they are part of a minority. In the case of climate change, the majority opinion in Europe, the USA, and China is that climate change is a real phenomenon and that it is a serious problem. If a certain proportion of those people falsely believe their opinion is only shared by a minority, and if this perception is what inhibits them from taking climate action, interventions targeting such a group may lead to much more collective action and in turn make the public’s climate concerns more visible to policymakers.

Conflict of interest

The authors declare that they have no conflict of interest.

References