To trust or not to trust? Young people's trust in climate change science and implications for climate change engagement

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ABSTRACT
This article discusses young people's trust or distrust in climate change science. The aim is to show how the emotional dimension of trust in climate change science plays a role for an engagement at two levels: how young people relate to climate change at large, if they worry or deny climate change, and how young people deal with ambivalence regarding behavioral advice about, for example, climate-friendly food choices. The article ends by elaborating on the need for more research about what role trust/distrust in climate change science plays in young people's everyday climate engagement, meaning-making, and identity development.

Introduction

Recently there has been great public interest in youth as an important stakeholder group regarding climate change. Young people are seen either as 'saviors' who, through their involvement in Fridays for Future and the global school strikes, will rescue us, or as an especially vulnerable group regarding climate anxiety (Sanson, Van Hoorn, and Burke 2019). However, young people are not a homogeneous group (Valentine, Skelton, and Chambers 1998). This is also true regarding how they relate to climate change. Some are active at both personal and collective levels (O'Brien, Selboe, and Hayward 2018), while others are uninterested (Hibberd and Nguyen 2013; Wray-Lake and Flanagan 2012). Some feel low self-efficacy and pessimism (Ballantyne, Wibeck, and Simone Nesset 2016), while others deny the seriousness of the climate threat (Corner et al. 2015; Ojala 2015).

In this viewpoint paper, I will discuss one aspect of young people's climate change engagement that has not been much in focus in the past, namely their trust or distrust in climate change science. This trust concerns both scientists that are involved in creating knowledge about climate change at large and those that are involved in research about mitigation efforts, but it is also about a trust in science itself. A focus on young people's trust in climate change science is important in three ways: (1) Climate change cannot be experienced directly by people, but needs to be mediated through scientific experts, and therefore everyone who relates to the climate problem must also relate to science (Cologna and Siegrist 2020; Lidskog 1996); (2) The main claim of the biggest climate change youth movement, Fridays for Future, is that politicians and other societal actors should 'listen to science,' meaning that science is at the core of this youth engagement (Thomas, Cretney, and Hayward 2019; Zulianello and Ceccobelli 2020); (3) Research about how young people cope with climate change shows that both those who use constructive and less constructive coping (seen from the

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perspective of engagement and well-being) relate to science (Ojala 2012a, 2013; Ojala and Bengtsson 2019). Youth are not passive victims of climate change worry but in fact actively cope. However, a more in-depth understanding of the use of science in these coping efforts is needed.

The aim of this paper is to argue for the importance of more research about young people and climate engagement that takes into account trust/distrust in science. To this end, I will first refer to earlier empirical research and take a theoretical stance that emphasizes both the importance of social trust as a developmental asset for young people and the emotional character of trust in science. Thereafter, I will show how trust in climate change science plays a role at two levels: (1) How young people relate to climate change at large, whether they worry or rather deny the seriousness of climate change and if they feel hope or not; (2) How young people in everyday life deal with ambivalence and uncertainty regarding behavioral advice regarding, for example, climate-friendly food choices. Finally, I will elaborate on the implications for future research about young people and climate engagement.

Emerging adulthood and the importance of social trust

When I use the word 'young people' in the paper, I refer to those from the age of 11 years up to late adolescence and young adulthood. Late adolescence and young adulthood, also called 'emerging adulthood,' is a particularly interesting developmental stage, because it is a transition phase where many young people are about to leave, or have already left, their home of origin and are about to start their life as adults (Arnett 2000). Transitional phases are considered to be particularly important in taking in new information and breaking with norms and habits created in for instance the childhood home or in peer groups (Lenz 2001). Therefore, this age can also be of critical importance regarding everyday climate-crisis activism (Verplanken, Roy, and Whitmarsh 2018).

An important developmental challenge in adolescence and emerging adulthood is to relate to the larger world and its problems and challenges (Arnett 2002; Flanagan 2015). In this process, social trust, that is, a belief that people, in general, are trustworthy and a positive view of humanity at large, is vital for whether youth will thrive, be civically engaged, have trust in political institutions (if they live in a democracy with stable political institutions) (Flanagan and Winn 2018). Social trust is therefore also important for democracy and can be seen as an important part of social capital (Putnam 2000). Often developmental psychologists focus on the relation of social trust to trust in political institutions and on its importance for wellbeing and civic engagement. However, in a world characterized by complex global problems and risks such as climate change, another form of trust becomes important to acknowledge, namely trust in science.

Living in a risk society and trust in science

Trust in science has largely not been emphasized by youth researchers. Instead, it is a topic of sociological research on scientific knowledge (Gustafsson and Lidskog 2012; Wynne 2006; Yearly 2005) and in risk-perception research (Poortinga and Pidgeon 2003). Trust in science and expert systems is seen as a precondition for everyday life (Giddens 1990). Every human must in some way deal with the fact that we are living in a global society with risks whose consequences are life-threatening, very extensive, and beyond the control not only of individuals but often of individual countries as well (Beck 1992; Giddens 1990). Giddens emphasizes that concrete meetings between experts and the general public in so-called 'access points' are very important for people's trust. These access points could for example be when an expert provides information to the public about climate change in the media.

A high degree of trust in science can be seen as a pre-requisite for climate change engagement. For example, a recent meta-study involving adults showed a strong positive correlation between trust in science and climate-friendly behavior (Cologna and Siegrist 2020). However, not much research has been conducted with young people about how this form of trust is related to different kinds of

climate engagement and about factors that predict trust in science. The in-depth meaning of trust in climate change science is also important to study, not least in the light of theories claiming that trust is an emotional phenomenon closely related to identity development.

Trust as an emotional phenomenon

Trust is a multifaceted concept, built on a view of humans as profoundly social beings; it is about oneself in relation to others (individuals, groups, institutions) (Barbalet 2009; Flanagan 2003). The essence of trust touches upon expectations of other people; it encompasses an orientation towards the future, and it is necessary for cooperation, not only at an interpersonal level but also for societies to be able to hold together (Barbalet 1996; Poortinga and Pidgeon 2003). Trust is important for humans at different levels, from concrete interpersonal trust, via trust in various institutions, to a more abstract, existential, belief in humanity, and the possibility of existence itself.

Giddens (1990) describes a kind of trust that is important for people in all cultures. This form of ontological security includes a sense of a coherent self and a feeling of confidence that objects in the outside world will not change from one day to another. Giddens (1997) also relates this ontological security to theories of developmental psychology, and mainly to Eriksson's concept of 'basic trust' (Erikson 1968). Through early relationships with primary caregivers, ideally, a broader trust in others (social trust), the object world and one's own self arises. This trust helps the individual to deal with changes, risky situations, and crises. It gives the child courage to venture into new situations and new relationships with an optimal degree of confidence in humanity at large (see also Bowlby 1977).

Trust is about investing in something outside oneself, despite the inherent uncertainty in that relationship; trust can thus entail risk at the same time as it stabilizes one's existence (Barbalet 2009). Trust is, therefore, closely related to emotions. These could be emotions of hope but also worry, as well as anger when taking a stance towards or against something. Barbalet (1996) sees trust itself as a main social emotion because it is the emotional foundation for cooperation. It is a positive emotion of expectation. When trust is broken, however, it can lead to strong negative feelings of anger toward others as well as self-blame. This can also be the case regarding social actors such as politicians or experts.

In addition, trust is about delegating responsibility to someone else (Cologna and Siegrist 2020). Although this is necessary in a complex society, in some cases it can lead to avoidance of taking on responsibility oneself and can be used to avoid feelings of guilt. Trust in this sense is a way to cope with problems and uncertainties, as well as related emotions. In this regard, distrust is seen as a separate concept, although closely related to trust (Van De Walle and Six 2014). To have distrust in science can also be a way to cope with the emotional dimension of climate change (Feinberg and Willer 2011; Jylhä 2016; Ojala 2012b). In the next two sections, I will argue that a more in-depth understanding of not only trust but also distrust in climate change science could shed a new light on different forms of climate change engagement among young people such as private sphere climate-friendly behaviors, engagement in organizations like Fridays for Future, but also engagement among those who resist the low-carbon subjectivities of today's society.

Young people and trust in climate change science

Many studies performed in different parts of the world show that large percentages of young people worry about climate change and the global future (for review, see Corner et al. 2015). Furthermore, it has been argued that not only how young people cope with this worry but also how they go about creating hope can be related to both wellbeing and climate engagement (Ojala 2012b). In this research, it has been found that trust in science plays a role in two different ways:

(1) The most constructive way to deal with climate change, from a wellbeing and engagement perspective, seems to be meaning-focused coping (Ojala 2012a, 2013; Ojala and Bengtsson 2019). Regarding coping in general, Folkman (2008) found that one important aspect of meaning-focused coping is to find meaning in a difficult situation and to draw a kind of basic trust from spiritual beliefs. In coping with climate change young people's meaning-focused coping includes having trust in various societal actors. It is most common to have trust in climate change science and technological progress (Ojala 2012b; Pettersson 2014; Zummo, Gargroetzi, and Garcia 2020). The positive emotions of hope that are created by this trust, in a theoretical sense, are assumed to help the young face their climate change worry and do something constructive with it. Hope can shield young people from the inherent stressfulness of taking personal responsibility for a problem that cannot be dealt with at a personal level only, but also needs to be handled at a political and structural level. Hope based on trust in science, therefore, gives strength to be active although the problem cannot be solved directly.

(2) When young people cope with climate change, there is in all age groups a small percentage that cope by de-emphasizing the seriousness of climate change (Ojala 2012b; Pettersson 2014). This form of coping includes being distrustful of climate change science, for instance, arguing that the scientists are exaggerating the seriousness of climate change. This way of relating to climate change is associated with a low degree of self-efficacy and a low degree of trust in societal institutions (Ojala 2012a, 2015). Research with adults indicates that this could sometimes be a way to cope with negative emotions (Feinberg and Willer 2011; Jylhä 2016). However, distrusting climate change science could also be regarded as a more active way of relating to climate change. Dahl (2014) argued that it can be seen as a way of actively resisting the low-carbon subjectivities of today by downplaying personal responsibility.

Trust in science seems to play an important role also in terms of collective engagement. Young people engaged in organizations focused on global sustainability problems mentioned that trust in science, and also social movements, made them hopeful and fueled their engagement in these problems (Ojala 2007). In addition, the biggest climate youth movement, Fridays for Future, argues that politicians and other societal actors should 'listen to science'; in this way, science is at the core of this youth engagement (Thomas, Cretney, and Hayward 2019; Zulianello and Ceccobelli 2020). Fridays for Future expresses a high degree of trust in climate science, and science is put in opposition to an otherwise cynical view of the adult world, especially young people's view of politicians.

Trust in science-based behavioral advice

Trust in science at a general level, in the sense of believing that climate change is a real and serious problem because scientists can be trusted, is not always the same as having trust in scientifically based behavioral advice. Deciding which behavioral option that is most sustainable is a complex and difficult task for both lay-people and experts, because of different trade-offs that have to be considered in light of environmental, social, and health aspects. This makes an in-depth investigation of the role of trust in science, scientific knowledge claims, and specific experts important, not least because trust is often seen as something that reduces social uncertainty and complexity (Poortinga and Pidgeon 2003).

Trust in science could, therefore, play an important role in the form of everyday youth climate engagement that O'Brien, Selboe, and Hayward (2018) call 'dangerous dissent.' This is a form of engagement that is similar to the concept prefigurative politics, where change agents act in everyday life and aim to experimentally actualize their political ideals, and/or ideals about the future, in the here and now (Trott 2016). They are ' … embodying 'the change they want to see,' showing through their personal actions what is possible … and thereby invite curiosity from others who might well make the same changes.' (North 2011, 211). For O'Brien and colleagues, this is the most 'dangerous'

form of engagement, since it gives concrete alternatives to the present societal order and thereby challenges the status quo in a way that is 'off the radar' of those who have power.

Why then does trust in science, most probably, play an important role in this form of everyday engagement? If we take the example of food activism in relation to climate change, it is obvious that if a young person would like to make climate-friendly food choices and change his/her lifestyle regarding this issue, he/she needs to relate to science about which alternatives are the best to choose from a climate change perspective. Not seldom, scientific uncertainty can be great concerning what food is better for the climate. In addition, seen from a broader sustainability perspective, a mixture of health, ecological, climate, and justice-related issues may play a role when a person makes a specific food choice (Johnston, Fanzo, and Cogill 2014). Sometimes current knowledge supports the view that certain food choices are sustainable from all of these perspectives; other times these perspectives clash, with something ecological being unhealthy and vice versa. This complexity can trigger ambivalence and dissonance among young people. In addition, complexities related to other aspects such as structural conditions, social norms, emotional attachments, habits, and taste can make these emotions even stronger. How young people cope with their ambivalence and dissonance, if they cope in a black-or-white manner or if they instead use dialectical thinking to bridge the ambivalence, seems to play a role for whether they will try to make climate-friendly food choices or not (Ojala and Anniko 2020). Regardless, what role trust in science plays in these coping processes needs to be further explored in future research.

Conclusion

In this article, I have argued that in order to get an in-depth understanding of young people's climate change engagement we need to conduct more research about how young people relate to climate change science, both at an overarching level but also in regard to behavioral advice. It is particularly important to focus on trust and distrust in science. How do trust and distrust relate to different forms of engagement? What are the preconditions for feeling trust, or instead feeling distrust, towards science? Here, socioeconomic factors, gender, place attachment, personality dimensions, general social trust, cultural norms, and so on, could play a role. Furthermore, in-depth studies are needed to explore what role trust/distrust in climate change science plays in young people's coping efforts and identity development. Is trust in science and technological solutions a way to avoid taking on responsibility oneself, or is it rather something that makes it worthwhile for young people to be engaged? In this research, I argue that it is vital to see both young people's trust and their distrust as a form of active engagement with climate change.

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