

### 4.3 Statements related to efficacy

That to a certain extent responsibility attributions depended on the power and influence societal actors held was prominently mentioned in the interviews:

... and then there is this kind of implicit approaching of responsibility in terms of agency or opportunity or true power [over societal outcomes]...

Academic (sustainable consumption)

Initially, this connection was mostly portrayed as being quite straightforward:

... to say it bold and simple: it's like with spiderman. With a lot of power comes a lot of responsibility.

Academic (sustainability innovation)

Accordingly, it was stated that more could be asked of privileged people who had the means for more climate action, they were however often the ones that allegedly contributed the least.

It was also reported that this relation between responsibility- and efficacy considerations had previously extensively featured in some of the experts' work. This surfaced for example in terms of the concept of 'competencies' and in this case was framed as follows:

I used to have a little pre-text, 'searching for the next step', [...], where it was asked: what can the consumer do next? What can the politician do next? What can corporate actors do next? A corporation can indeed somewhat shift the structures that it is influenced by. [But] it cannot jump out of them. [...] This is precisely my perspective [...], so to say: how can the single consumption decision be transformed or initiated in a socially relevant way?

Expert 2 at federal environmental agency

Relatedly, another one of the experts painted a picture of an 'architecture of responsibility':

... where everyone makes use of his or her opportunities that exist in their field and makes sure that when they are in that position [...], they extend other areas of opportunity; because industry as well as politics have the ability to also increase the scope for action, including that of consumers. And consumers have the ability to increase politics' scope for action, when they accept certain laws more or vote for a

party that pushes certain things through. Thus, you have this kind of dependency, because you can increase or lessen the agency scope of other actors.

Academic (sustainable consumption)

In most of the interviews it was soon acknowledged that this relationship between responsibility and efficacy was one of the key aspects that rendered the attribution of responsibility for climate action so fundamentally complex and difficult:

So, it can be seen particularly clearly in the agricultural sector: so you have farmers. And then you could say: you are overusing fertilizers on your fields. And you produce too much manure. You need to produce less manure. But the fact that the farmers themselves are embedded in this quasi-industrial complex, where there is also a chemical agribusiness industry and one that produces utility vehicles and so on... So that the farmers are also embedded and that they are actually only the last... the interface or the border agent towards nature and that so much plays into this situation that hardly leaves them much room to act differently...

Academic (sociology and sustainability)

One interview partner did however reject the idea that a lot of influence brought more responsibility:

If this was the case [...], then you would get to push responsibility away. Because if I have less influence, then I also have less responsibility. And right now, I definitely have much less efficacy than Merkel... (Interviewer: yes, but as a teacher, you also have a lot of efficacy...) Yes, you are right...

Teacher secondary education

Thus, while this deep complexity was acknowledged and with it the recognition that finding the most effective measures brought considerable uncertainty, one academic went on to argue that taking responsibility for certain things as a consumer, this imposing matters upon oneself through consumption practices resulted in others (with more actual influence) being let off the hook:

... so of course there is an agricultural sector and an agricultural lobby and industries that serve agriculture, that at the end of the day all work towards this butter ending up on the shelf.

Academic (sociology and sustainability)

Additionally, in the eyes of another expert, holding the single individual accountable was not ever going to be sufficient since consumers were not willing to display the dedication needed to achieve meaningful climate action:

Exceedingly few or nobody actually is willing to go that far. And this we see in all markets, no matter whether it is fashion, even vegan and vegetarian diets that are having an enormous boom in the last ten years [...], that's still only a fraction, a couple of percentage points, we see a lot of flexitarians and so on but this corresponds to this escaping a guilty conscience...

Academic (sustainability innovation)

As a result, one of the experts emphasised that besides these intricate interdependencies and all this complexity, there were still areas where there was much agreement over the necessity of implementing measures for climate action and for her it was fairly obvious that political agents were the ones needing to take action, for example in the meat industry. She believed that whilst politicians held significant influence over such matters and did have the means to initiate changes, they instead opted to even more effectively responsabilise the single consumer:

... whenever I visit conferences [by the government] for sustainable consumption, every time they present this app, 'too good for the trash', for them, that's climate action, that people have an app with which they can determine whether the best before date is even relevant for them, well, great! [...] [but] this is going to make zero difference!

Academic (sustainable consumption)

It was further granted that effective political environmental action consisted in actually restricting consumption and the challenge therefore lay in gaining the necessary societal acceptance.

Consequently, for one of the experts, acting responsibly as an individual began with considering the areas that one actually had an influence over:

I believe that where my actions actually make a difference, where I can do this or this, that is where one should take responsibility and consider: do I really have to get the maximum out of something? Do I have to act strategically here? Or can I maybe actually just act out of solidarity in this case? [...] And take responsibility for the mutual relationship and not for the maximisation of my utility. [...] but these areas are quite small and maybe they are getting even smaller...

Academic (sociology and sustainability)

She went on to say that in her eyes it was central to involve oneself and contribute to one's community. Here she stressed that the means to do so differed, and somebody struggling to make ends meet may not have the capacities to do so. Thus, the initial inherent complexity of ascribing responsibility for climate action was exacerbated by people in modern life being exposed to multiple pressures, especially in young adulthood when trying to make a living, raise children and in some cases also care for their elders. Climate change communicators often failed to establish some form of connection to these everyday realities of people. Furthermore, individual consumption decisions for more climate action were welcome but at the end of the day, they were no more than *a drop in the ocean*.

For these reasons, there was a general consensus (except to an extent amongst the conservative politicians) that this focus on the single consumer was unhelpful if not counterproductive in everyday life:

The consumer is told that they can do so much for climate action, thousands of little things, things that systematically overstrain them, if with each coffee they buy they have to consider whether from a climate perspective this makes sense or not....

Academic (sustainability innovation)

Or in another interview:

I think that this is a kind of overstrain, because firstly you cannot really know exactly all that comes with this piece of butter that you are buying and at the same time, as I said, in many cases, one is embedded in certain necessities where you don't really have a choice...

Academic (sociology and sustainability)

In conclusion, with respect to the role for climate action of the single consumer, the predicament was described as follows:

... climate change will only work if every single one contributes. On the other hand, there are a lot of people who are right in saying: it's completely irrelevant whether I go by car or not. And at first, this is a completely rational statement because it is true. [...] But on the other hand, if we want to achieve a climate neutral society, this of course has to be reflected in the actions of the individual...

Expert 2 at federal environmental agency

However, there was also an argument with respect to the efficacy of the individual that went into the opposite direction. In this respect, Greta Thunberg was for example referred to as an ‘ignition spark’ that then mobilised the *Fridays for Future* protests (chairperson socio-ecological think-tank). Yet arguably this once again has to be put into (social-scientific) perspective as Greta Thunberg did not achieve this momentum for the climate movement truly on her own. Instead, the issue had already been simmering in society for quite a while and when she started her school strikes, the time was right for collective action to mobilise and have an impact.

Therefore, in the eyes of one expert, the influence that could actually be exerted by the individual over societal outcomes consisted in the following:

... exerting pressure from within society... through the formation of coalitions... yes, and being present, being uncomfortable, being loud, being seen. With demands that are articulated clearly...

Head of environmental NGO

Overall, many interviewees reasoned that political actors held particular responsibility as they actually had the most influence over societal outcomes. One expert was hesitant at first with regard to this point, arriving however at the following conclusion:

... it is often marginal groups [that initiate change]... as long as you are in this stage, you cannot really criticise state actors for not reacting fast enough, as the state is hardly ever a first-mover and you also need a whole lot to have majorities, you need a majority in parliament to pass laws or to get funding approved, yes. But at a certain point, when a problem has been known for twenty years, then you can and you have to hold the state responsible. Yes, because the state is not acting and it is the only one who can. The state cannot give this obligation [...] back to civil society, even though this happens all the time: you people simply have to scream a bit louder and then we create some legislation. Of course, politicians need acceptance, you see this in the example of the yellow vests... that’s very discouraging to politicians.

Chairperson socio-ecological think-tank

Yet, there was considerable scepticism over whether state actors actually met this responsibility:

Let me put it like this: they [the politicians] are effective in legitimising politics, so politicians legitimise their role, so they do do something, they carry responsibility in their political role, but they don't carry responsibility as climate protectors.

Academic (sustainable consumption)

This participant went on to say that in her perception political actors often saw themselves as very limited in their own actual agency by the will of the voter and in her eyes this was true to some extent as polemics and elections did in fact limit their efficacy. Political actors themselves confirmed this perception:

Our influence over outcomes, it does exist, but it is much more limited than you would sometimes think – also how we ourselves would want it to be.

Member of Bavarian State Ministry (Freie Wähler)

Or in another interview:

But if we, say, raise taxes at just one segment (-)... and then we don't even know whether people will only get mad but still continue to drive their cars. Then I have ruined more than I have gained.

Member of the Bundestag (CDU)

While these politicians by and large accepted their special responsibility for intensifying climate action, they perceived their ability to make a difference, so their own efficacy, to be much more limited:

At the moment, I see a certain discrepancy between: do you want politics to do more for climate action? 80 percent agree. Do you want carbon pricing? 70 percent reject this. And that is the great challenge we face...

Member of Bundestag (CDU)

Elsewhere in the interview she did however express that she did feel self-efficacious:

So I would certainly say that in the position that I am in I have a lot of power. Also because I am really close to the chancellor. And to her employees. Last week I spoke on the phone to the person who is drafting her foreign economic policy [...] but

then again, I don't have the final say. I am not transport minister or energy minister. And therefore, my power is limited once again by what I can attain within my fraction. But if I manage to achieve things by going via the chancellor... I like that she is making this [climate action] a matter for the boss<sup>5</sup>...

Member of Bundestag (CDU)

Wondering why conservative parties were however not recognizing the extent of the urgency and threat climate change presented and thus not trying harder to win people's acceptance, one expert said:

... at the end of the day climate action has a lot to do with where you come from, your place of origin... and with conserving these places... and thus it would make sense for the CSU to be the typical climate action party [...]. And they do try to some extent, but at the same time they want to keep economic liberalism because it secures our standard of living, at least allegedly, but to me it is obvious, we cannot keep this form of affluence that we generate at the moment, no way, in fact we must not! [...] but they simply keep clinging onto familiar patterns and it is hard to let them go [...]

Head of environmental NGO

This clinging to what is familiar he also ascribed to the politicians' need for convenience and thus demanded that laws would be introduced that forced actors to leave their comfort zone. Relatedly, there was particular disagreement on the use of regulations. Whilst the conservative politicians interviewed were against 'telling people what to do', some of the other experts demanded their implementation:

... at the end of the day, issuing laws and actually also prohibitions, even when people will say this is socialism and [call them] the "prohibition parties" and so on, at the end of the day we have seatbelt regulations and non-smoking laws. They also used to be prohibitions and today nobody cares about that, they are commonplace... [...] only then will we see some development.

Head of environmental NGO

This expert also voiced incomprehension regarding the legislature's failure to harvest even the 'low hanging fruits' as in a recent poll, one third of people had said they would give up their cars if there was sufficient public transport available close to where they lived. He further criticised the government's reported inconsistencies,

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5 *Chefsache* in German original statement.

for example them wanting to protect 40.000 jobs in the coal industry whilst passing legislation in 2011 that “killed the entire photovoltaic sector” where considerably more people were employed. Thus, while he believed it was politicians who held the largest responsibility for climate action, he saw them as displaying only limited efficacy. On the other hand, he attested the growing movements from civil society (*Fridays for Future, Extinction Rebellion*) considerable supportive (vis-à-vis politics) efficacy even though in his view, these efforts could not readily be expected of civil society. Yet, another participant saw it like this:

At the end of the day, civil society can also not be successful if it continues to only criticise state actors as an instrument of capital and of the lobbies and so on... often enough this is true but government is also the miracle tool of democracy... I'm not saying that government doesn't make mistakes and isn't structurally venous [at some stages]... [...] I think civil society and these young people can be criticised for this tendency to have very little faith in politics and then I wonder: who else is supposed to make the laws?

Chairperson socio-ecological think-tank

On numerous occasions it was also noted that in Germany one was much too dependent on the automotive industry. One participant voiced deep disappointment in its executives as instead of being a role model, its representatives had been setting such a bad example:

They truly would have been the ones who had the power, and I mean financial resources, intellectual resources, technical resources, to initiate and push change themselves and instead they sacrificed this for profit...

Academic (sustainability innovation)

Another expert also observed a concentration of power with large companies, but she did however not attest them the corresponding amount of responsibility, as these actors were also embedded in power relations. She thought that framework conditions should be established that allowed or forced those who have this kind of power to act properly and that this was the task of politics, even if this resulted in less votes or donations:

I think a certain amount of courage to become unpopular is part of being responsible.

Academic (sociology and sustainability)

On the other hand, it was recognised that within a corporation one could have a much larger impact as a single person than as a consumer:

... if I campaign in my company that from now on, we only use recycling paper, this is not peanuts anymore, because suddenly we are talking about an organisation with one hundred employees, with a paper demand of potentially tons, several tons. That adds up and can really make a difference.

Expert 2 at federal environmental agency

It was further pointed out that, in line with consumers, corporate actors also had the strategic option to operate in climate neutral ways and whilst there was already some movement into this direction, this remained below what could be expected, given that consumer demand is already shifting to more climate-friendly products.

The scientific community was deemed very efficacious, especially through the international institutionalisation of the subject of climate change within the IPCC:

The IPCC has caused a societal level of knowledge for a specific environmental challenge that is unique in my opinion...

Expert 2 at federal environmental agency

At times, one could notice in the interviews a deep trust in the efficacy of technological innovation, mainly in the case of the more conservative participants:

The topic of climate action and sustainability will be advanced with the help of technological solutions...

Member of Bavarian State Ministry (Freie Wähler)

One expert said in relation to the efficacy of the scientific community:

Science does indeed play a role, I think. But more indirectly. In what the media then brings to the public. But not, I think, nobody really notices these things... [...] since the eighties it cannot actually be said any more that scientific knowledge is superior [to practical knowledge]. But of course, there is some knowledge in any kind of practice. I think it is right that science as an entity that generates secured or legitimised or neutral knowledge is centralised. And I think it is important to integrate local knowledge into this.

Academic (sociology and sustainability)

On the other hand, one other academic (who also worked in more inclusive, trans-disciplinary research projects) reported that this was much more complicated than often assumed, and this was very difficult to convey. She said that in relation to this, she faced a lot of scepticism towards science with people saying that what she was doing was completely irrelevant.

It was also criticised that currently, ministers were ignoring even their own expert panels (expert 2 at federal environmental agency), pointing towards science also sometimes lacking efficacy and assertiveness. Furthermore, on numerous occasions it was pointed out that messages were heard most where there already was established concern for climate action.

In line with all these presented incongruences between responsibility attributions and efficacy estimations, one of the academics came to the following testament:

So, there is actually this cut between the action and its effect that I can take responsibility for. [...] And I believe this holds true for both directions, so on the one hand I take responsibility for things that others could indeed for once also see themselves responsible for. And also, I am being made responsible for things that I cannot even fathom what they are about. [...] So I think it is really difficult to establish this nexus between action and responsibility [for action].

Academic (sociology and sustainability)

Furthermore, it was emphasised that climate action remained a topic exceptionally difficult to communicate as it was firstly so abstract and secondly there was this problematic uncoupling of cause and effect with respect to climate change. This was exacerbated by the fact that carbon emissions could not be experienced directly by people's senses:

... the further away or the more abstract or the more invisible a danger is, say poison for example, fertilizer, in small amounts CO<sub>2</sub> is harmless anyways, is part of nature, all this makes us less and less able to react to this danger...

Chairperson socio-ecological think-tank

#### 4.4 Statements about knowing

This relates to the dominant view that the public needs to be provided with more detailed information about the threat of climate change in order to act responsibly