

## 5. Global Climate Change as Perceived by the Public<sup>1</sup> (Ester Höhle)

### 5.1 Introduction

The results of the risk survey on the perception of global climate change make one sit up and take notice: All in all the public experiences global climate change as a serious threat: Compared to much discussed topics such as crime rate, genetic engineering in food production, nuclear power or even BSE, which had triggered a massive boycotting of beef products in 2000, the fear of climate change takes up the top position in the evaluation of our survey's interviewees. But this is not the whole extent of the matter: more than half of the interviewees associate with climate change a high potential for catastrophe, and that even though Germany in general and Baden-Württemberg in particular do by no means count as being particularly disaster-prone areas. Two remarkable natural disasters, namely hurricane ›Lothar‹ of December 26th, 1999, which claimed 15 lives and 5 % of the country's indigenous forests, and the flooding of the Oder in July 1997 are matters of the past and are not reflected in the 62 qualitative interviews. Thus, the ascription of disasters hardly seems covered by primary experience. All the more the question emerges: What do people really understand by global climate change? What makes them afraid? And how can it be that despite the stated fears, thinking and acting differ as widely where climate protection is concerned, as in hardly any other sphere of life? (cf. Preisendörfer/Franzen 1996, Tanner/Foppa 1996, Renn/Zwick 1997: 13) The survey's data prove that the individual and social benefit of motorized passenger car traffic - one of the main factors causing the release of greenhouse gases - is assessed as being very high, maybe high enough to consider the climatic risk caused by it, among other factors, as inevitable.

The following analyses refer to the qualitative data material described in the previous chapter by Heinßen/Sautter/Zwick. The answers to two sets of questions out of the comprehensive manual will be evaluated in the following. For one, statements made on the introductory open question: »*What comes to your mind on the subject of risk?*«. For another the interviewees were, in the course of the interview, shown small cards with symbolic representations of the surveyed risks - among others a picture of the earth's globe surrounded by smoking industrial smokestacks and smoking exhaust pipes.<sup>2</sup> The interviewees were then asked to make statements on the risk in question.

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1 Many thanks to Ortwin Renn and Michael Zwick for suggestions which were of great help in the making of this paper.

2 See appendix.

Finally, more detailed questions were asked on the specific risk, when necessary, in order to learn what makes a risk appear as especially dangerous, what causes the risk, which damage is expected at what time, whether the risk is increasing or decreasing, who are the main groups of persons affected by it, who is made responsible for the development, but also for the potential control and reduction of the risk and how the acceptability of the climate risk is assessed. The interviewers were instructed to create a conversational setting as open and natural as possible, leaving a lot of space for descriptions and explanations.

## 5.2 Statements on climate change in the open introductory question

»What comes to your mind on the subject of risk?« The qualitative interviews were opened with this question. The statements evoked by this question are of special interest as they reflect the cognitive presence of themes. On the subject of ›risk‹, most interviewees think of everyday, so-to-speak ›tangible‹ hazards, which can be perceived with one's senses, such as road traffic, followed by health and leisure risks. Climate change - in the widest sense of the word - was mentioned eight times by the 62 interviewees in the course of their answers to the first open question. Thus, climate risk - analogous to nuclear power, BSE or genetic engineering - is one of those risks which were rarely stated spontaneously. As a rule, climate change was not mentioned explicitly, but rather more or less loosely related symptoms. Thus, the subject was embedded into a wider semantic context. In part, however, it will remain a question of interpretation whether statements relating less specifically to »*environmental development, i.e. concerning all the resources, and energy*« (R24.1.022)<sup>3</sup> can be referenced to climate or not. Other statements generally speak of »*contaminated air*« (R35.1.088), »*environmental pollution*«, »*the destruction of nature*« (R22), »*acid rain*«, »*trees are losing their leaves*« (R35), »*sky poisoned by kerosene*«, »*destruction of the ozone layer*« (R07), or »*environmental risks and the ozone hole*« (R50.1.019). It is doubtful, whether these statements can be interpreted as related to climate change, since the respondents were free to state all sorts of conceivable aspects of risk.<sup>4</sup>

But there were also more specific statements on »*the stance of the USA in the Kyoto Protocol*« (R07), »*global warming*« (R31), »*climate change*« (R36), »*climate catastrophe*« (R42), »*climate summit*« (R71) or the perception of »*a too mild winter*« (R72). On the

3 R24.1.022 signifies Interview No. 24 on the subject of risk, 1<sup>st</sup> side of tape, tape section 022.

4 The difficulty is that the point cannot be to measure the statements of the interviewees on environmental changes against a scientifically founded definition of climate change, but to reconstruct whether a mentioned phenomenon can be considered as belonging to climate change or not *from the point of view of the interviewees*.

whole it seemed appropriate to use those eight interviews which from the beginning related to the ›climate change syndrome‹ relatively clearly.<sup>5</sup> In all these cases risk is evaluated relatively negatively or is at least put into a pejorative context, its consequences are assessed as risky or threatening: of the eight interviewees initially speaking of climate change, six counted climate change among the worst threats. It is noticeable that climate risks are frequently mentioned in combination with other rarely remembered risks: i.e. Ms. P. (R72) also mentions, apart from the too mild winter, BSE, old-age pension politics, Chernobyl, poverty and social welfare. Ms. R. (R35) states, apart from the environmental risk and others, the decline in social values. Mr. X. (R42), who already mentions during the introduction that he is interested in »*things like ecology, the consequences of technology, nuclear power*« includes under the subject of environmental influences, apart from climate catastrophe, also problems resulting from nuclear power and BSE. In addition to climatic changes, Mr. V. (R71) also speaks of the industrial nations' handling of resources, of BSE and the safety of food. Apart from contamination of the environment, the ozone hole and American climate politics, Ms. K. (R07) considers euthanasia, genetic engineering and chemical substances contained in cleaning agents and food as being risky. Finally, Ms. R. (R50) mentions, apart from the ozone hole, environmental risks and the transportation of radioactive material.

It is conspicuous that in the statements the majority of the mentioned subjects are frequent topics in current media reporting. Thus it is not implausible to assume that persons who spontaneously cite climate risk are particularly well-informed individuals attentively following the daily events reported in the mass media. It is likely that they have an increased interest in political and ecological matters, or a special sensitization for more abstract problem fields. Despite indications of the higher educational level of these interviewees<sup>6</sup>, the qualitative material hardly proves the conjecture that ›global warming‹ is associated with high political interest and special attention for political matters.

All in all it becomes obvious that climate risk, compared to risks which can be experienced directly in everyday life, has a markedly *lower cognitive presence*. Thus it is fair to assume that this is more a *latent subject* concealed by daily political events, but which can be ›activated‹ easily in case of harm or relevant communication.

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5 R07, R31, R35, R36, R42, R50, R71 and R72.

6 R07: female pensioner in her mid-seventies with college-degree; R31: male teacher in his mid-fourties; R35: female manager of several travel agencies; R36: male owner of a financial consultancy business in his mid-fourties; R42: male software developer in his mid-twenties who had occasionally worked in the German branch of ›Friends of the Earth‹; R50: female insurance clerk in her mid-twenties studying business sciences in addition to working; R71: male graduate engineer in his early fourties working in the IT field and R72: female employee in her mid-fourties working for a cellular phone company.

### 5.3 The global climate risk in direct questions

When enquiring directly about global climate risk the interviewees were shown the small card with the symbol for global climate change and the word »*climate change*«. After the interviewees had studied the symbol the specific question was asked: »*What comes to your mind on the subject of climate change?*«

#### *Fact or Fiction? Climate change as an evident event*

Uncertainties as to whether there is a climate change at all seem to be a thing of the past. Almost all interviewees take it as a fact: »*That it [the climate] changes is no question to me.*« (R04.1.169) It is remarkable that in the qualitative material the individual's own primary sensual experience markedly dominates the expert opinions communicated by the mass media: »*The climate change can even be felt here nowadays...*« (R48.1.126) »*I mean, even here in Europe it has become noticeable that something has changed*« (R60.3.750). »*There is a shift - there is no longer a real winter here!*« (R50.1.198) »*When you just look at our forests, ... over the years. Years ago ... we didn't have such mild winters and all the forests, they weren't so sick. Today there are only sick forests and yes, you can tell by the storms. They are real hurricanes, we never used to have those before. And all the landslides and, and floods.*« (R72.1.024) Although the interviewees describe climate change and its consequences as directly perceived, obvious events, it is nevertheless plausible to assume that the mass media play at least a small role where the perception or perceptibility and ascribability of events representing climate change is concerned. I.e., that symptoms recognizable as effects of climate change can only be interpreted as such with sufficient knowledge about changes in weather patterns: »*You know, I don't watch much television. But the Swiss mountains, they're melting. ... That thing with climate change, that's out of balance, you can see that ... I mean I just interpret it that way.*« (R21.1.533)

Opposed to this, interviewees consider expert opinions on climate change with some skepticism: »*I believe even today scientists still do not quite agree with each other whether this is global warming that we have here.*« (R35.1.258) Climate change is included in the list of topics where it is important »*which study was ›in‹ just then, who the scientist was who just proved that there is global warming - ›oh no! Not as bad as you think, quite the contrary!«* (R27.2.004) The perceived uncertainty and conflicting expert opinions cause some interviewees to speculate about effect, extent and course of climate change and the risks involved. In most cases, the stated visions are outright horror scenarios: »*Basically [this is] a time bomb!* (R36.2.475) »*Climate change? You know, I don't want to walk around with a gas mask, but I think it's quite possible that this will happen some day.*« (R46.1.704) »*... then there will be a fiasco. And then it are the later generations who will have to go through all this or maybe won't even survive it. I mean, it is not only that the sea level*

*will rise and a few islands will be inundated ... that will be a catastrophe: the ozone hole and skin cancer will increase massively!*« (R07.1.433) »*I find it really bad. You just don't know where it will end. At some point we will live in the desert or everything will be iced over. Climate change is a big issue.*« (R55.1.248) Unclear and conflicting expert opinions and, as a consequence of those, communication by the mass media of uncertainties, ambivalences and contradicting findings are prone to cause feelings of insecurity and fear; they open the scope for speculation, dramatization and apocalyptic visions. That lack of knowledge and uncertainty about risks may cause the public to fill ›gaps of knowledge‹ with speculation, aspects and assessment criteria gained by everyday experience, has already been proven by qualitative research on the risks of genetic engineering (Zwick: 1998) - such mechanisms are also recognizable here. They illustrate that communicated uncertainty seriously interferes with the rational perception and assessment of risks; consequently this is an important responsibility of science and those institutions involved with risk communication.

Only sporadically climate change is perceived as an artefact or as being staged: »*Sometimes I have the impression that this is a summer-gap-filler: you always hear different things but it no longer registers with me. That's why it is no conscious risk.*« (R62.1.303) »*The whole thing is played up a little too much, I think it is a natural process of the earth.*« (R58.1.140) However, such opinions are the exception in the interview material.

*Atmospheric disturbance instead of climate change - the wide semantics used with climate risk*

Global warming, the threatening melting of the polar caps, the increasing frequency of storms and floods, the spread of the deserts or the rising sea levels are the effects of global climate change mentioned the most frequently. In doing so, climate change is put into a wider semantic context by the interviewees. »*Climate change is a huge problem. For years there have been prognoses which seem to come true: that it is a high risk, the whole ecosystem ›earth‹ is at stake, it may be threatened, and it can at least massively endanger highly developed life.*« (R42.2.599) In about one in three interviews, the ozone hole was mentioned in the same breath as climate change: »*Yes, well, the greenhouse effect - that's really bad and I think it will become steadily worse. One knows nowadays that the earth is warming up faster than thought before and that meanwhile icebergs are melting too... The ozone hole, one knows that too, has grown much bigger than one had thought that it would.*« (R03.2.344) Climate change is understood as the generic term for anthropogenic damage of the atmosphere in general, a circumstance which makes it seem justified to retrospectively classify - in the interpretation of the initial statements - those text sections aiming at the ozone hole rather than global warming, as belonging to ›climate risk‹.

### *Bad outlook - the evaluation of climate change*

Almost all interviewees agree that climate change represents a massive risk. Answers concerning this point show a surprisingly narrow bandwidth. Even those individuals who did not think of climate risk in the open statement at the beginning assess climate change as an ›important subject‹ and ›considerable danger‹: »I think, [...] that this is one of the most threatening problems of all.« (R53.1.112) »I consider this ... - let's use the term ›pressing‹.« (R37.1.190) Two other properties mentioned in the interview material are characteristic and basic for assessing climate change: »The risk will increase - global warming is progressing!« (R58.1.150) and »The way we treat the environment is irreversible!« (R57.1.080) Both statements are typical evaluations of the interviewees.

Almost without exception the interviewees speak of a dreadful, looming and growing risk and differentiate between space-related and temporal aspects of being affected by the climate risk.

### *Insidious risk*

Generally the interviewees are unsure about when the starting point of climate change was. Fearful expectation of serious events threatening one's living space is held mainly for the following generations, i.e. climate change is perceived as an insidious risk with long-term consequences. Here, assessments as to when precisely climate change will occur or when it will assume threatening proportions vary. For some the time is so far away that they themselves will not be affected, but future generations will. »The word climate change makes me think - in the extreme case - that we will destroy ourselves. But that will take some time... So seen in the long run - in centuries - it will probably become even more dangerous. But as I said, we are not affected yet. [The risk is] so insidious it's imperceptible.« (R09.1.280) »[Climate change] is a horrible risk. Because it is so insidious. Because people are not aware of it... and they don't see the consequences contained in it. That is why it is such a big risk.« (R17.1.254) »I am thinking the whole time, thank God that my children will probably not be so affected, because I believe that climate change will be a slow process.« (R04.1.168)

To others the time will come earlier. They assume that it will be within their lifetime: »Climate change is naturally something which causes great fear as you don't know how the weather will be here in 20, 30 years and whether we will all still be here or whether will all be frozen or burnt.« (R55.2.111) Still others believe to be able to perceive alarming effects even today, which do by no means have disastrous properties but which are nevertheless perceived as threatening ›signs‹ and interpreted as symbolic harbingers of potential looming disasters: »In the meantime the climate change can even be felt here. For

*example on Christmas Eve or one day before Christmas Eve we had 16 or 17 centigrades. That is a clear sign to me.» (R48.1.126) »I believe that it is not reversible. I think, the risk has taken its course. That's dramatic!« (R38.1.090)*

To not few of the interviewees the dynamics of this risk, classified as irreversible and as having a high disaster potential, give rise to fatalism and a profound pessimism regarding the future: *»It will boil down to the fact that I won't even be able to say whether there will be a place to live for my own child... If they don't find a solution within the next say 20-30 years you no longer need to have any children at all.« (R24.1.200) »I think it is really awful. You simply don't know where this will end. At some point we will live in the desert or we will all be iced over.« (R55.1.248) »Well, a lot of things will have to happen, otherwise our children or our grandchildren will have nothing left of the earth the way we knew it.« (R30.1.110).*

#### *Globalization of the risk*

The question of who will be affected most by the effects of climate change resulted in three response patterns. Type 1 assumes a risk which is ›equalized‹ even today without positive or negative disparities in distribution: According to this opinion, risk nowadays is completely globalized ..., *»as we all live on the same earth and climate changes everywhere. That is why really all of us are affected.« (R55.1.260) »I think that we are all in the same boat.« (R38.1.084)*

Type 2 sees the effects of climate change restricted to particularly risk-prone areas and populations. They localize particularly affected population groups to either geographic regions, such as easily flooded areas, regions with an increased ozone hole problem - Australia, the polar areas -, to regions where nuclear tests are carried out (R36.2.511) or to places where obsolete production facilities emit climatically harmful gases: Such as *»the whole East«* as people there *»fiddle around with old facilities«* (R36.2.512). However, developing countries such as India are listed, too. Moreover, some interviewees consider certain population groups as being particularly threatened by climate risk due to their health-related vulnerability, e.g. the elderly and the sick, people with bronchopathies or persons who are particularly predisposed to heart attacks and collapses (R35.1.279). It is noticeable, that those who identify especially threatened groups do not count themselves as belonging to these threatened groups of individuals. This ingroup-outgroup pattern also implies that predominantly non-European regions are considered endangered zones: It are mainly ›the others‹ who are affected, not the interviewees themselves: *»It rather seems [to be a risk] for people living in tropical areas, close to the sea. They will then be affected by the rising waters, by hurricanes - I believe it is North America where they are more frequent, and in Southeast Asia. I believe in Europe we*

*are in one of the safest places as far as climate change is concerned.» (R42.2.071) »Well, I can really deal with it quite well. I can accept it. There are of course people who are more affected than I am. For example the inhabitants of the Netherlands or of the Maledives.« (R58.1.152).*

Type 3 interviewees assume a temporal differentiation of affectedness. Analogous to Type 1 they feel caught up in the terminology of Ulrich Beck and assume a globalizing ›world risk society‹ (1996: 44): *»For a long period of time everyone is equally exposed to risk; only some are affected earlier than others.« (R20.1.275) »Of course, people living somewhere in the Carribean are [especially affected]. On a small island which will be inundated within three years. Naturally they are affected first. We may be affected later. Because we're simply lucky enough to live here, where we are not directly affected. But ultimately it will hit us as well.« (R17.1.263)*

### *The acceptability of risk*

Type 2 ›outgroup‹ interviewees prevail in numbers over Type 3 ›globalization‹ interviewees. This indicates that spatial and temporal risk distribution is an important key to understand the perceived impression - high disaster potential, moderate subjective affectedness and high ambivalence. This spatial and temporal distribution permits maintaining the difference between ›global consternation‹ and ›individual reservedness‹: *»For us personally - i.e. in Europe - prognoses are quite good, which means that not so much will happen here. And as far as one can assess the situation it will not happen within the next 30, 40 years: So it really doesn't concern me! ... To me this is no risk, I am not afraid!« (R34.2.195) »Yes, I can accept [the risk]. I think it won't come that fast, that it would be a risk to me.« (R09.1.280)* In a highly individualized society the individual lifespan can easily become the all-dominating reference point. Under these circumstances the demand for sustainable economization with the goal of an ecologically sound inter-generational justice should hardly be able to develop motivating power.

### *What does risk consist of?*

The following effects were mentioned the most frequently as consequences of climate change: the ozone hole, global warming, floods and destruction, occasionally the greenhouse effect, melting glaciers, El Niño, changes in weather patterns - e.g. onsets of winter-type cold weather in the Near East, no snow for Christmas in Germany -, extinction of animals species - corals, amphibians; animals in general -, and of plants - plants in general; forests -, natural disasters, earthquakes, air pollution (R36.2.438), the collapse of the earth as an ecosystem and - as a result - consequences for food and the chances of mankind's survival (R42.2.599). Social effects such as diseases, poverty and increase in crime are seen as effects of changes in the climate. Reflected as basic



tenor of this potential imperilment of the essential living conditions by humans themselves, the interviewees' interest to preserve nature or the environment can be heard in some statements, not so much due to a biocentric motivation ›for one's own sake‹, but rather from an anthropocentric point-of-view, in order to maintain health and prosperity. From the understanding »that the ozone hole is there and that the risk of cancer is increasing, which directly concerns people, where you can't say: ›oh well, now we're missing a couple of animal species‹, that may not impress some people very much - but when their health is at stake, then it must be relatively simple to recognize that this is a very important issue.« (R41.1.340) »And of course you can argue that first comes man and then nature, but ultimately this is shortsighted. Because at some point in the future there will be no more people if we keep on as we do.« (R30.1.139) Climate change is »really one of the most important subjects at all, I think, as it simply affects every person, nature, animals, plants, our whole preconditions for living.« (R41.1.333) According to the opinion of the majority of interviewees global climate change ultimately affects the whole ecosystem of the earth. Moreover, some interviewees see long-term, profound effects on health and social politics, where a separation of the ecological and social system would no longer make any sense.

#### *Anthropogenic influence*

Except for one single (female) interviewee who interprets global warming as natural variations which were just not detectable before (R58.1.136), all interviewees have no doubts that climate change is caused by human activities. The socio-technical system in combination with certain basic social values are responsible for the creation of this risk. Only in some individual cases interviewees believe that the responsibility lies with industry or politics: »Climate change? ... That concerns the chemical industry, the power industry, in fact everything that has to do with processing or production.« (R57.1.100) When technical artefacts or technical progress are mentioned as originators, then with the connotation of social utilization rather than in combination with ascriptions of guilt to industry or politics: The item mentioned most frequently is the motor car, however, this could also be explained by a reactance effect caused by the cards shown. Other causes mentioned are flying (e.g. R07.1.032; R28.1.332), the emission of CO<sub>2</sub>, nitrogen oxides, exhaust gases (R59), or CFCs, and quite generally »the combustion engine«, heating (R55), refrigerators (R18), and finally technical progress in general (R36.2.438). Some of the interviewees (R04.1.240; R07.2.429; R24.2.002; R36.2.511) also counted nuclear power plants and nuclear tests among the causes for climate change. Finally, there were also arguments about values (e.g. R.71.1.532), e.g., that climate protection and the pursuit of profit are conflicting issues.

The naming of general patterns of action or products used in great numbers illustrates that it is not the technical product itself which is identified as the cause of climate change but its embedding in a certain socio-technical system, namely western industrial society. The citizens of the western world with their lifestyles full of amenities, comfort, mobility and consumption are considered mainly responsible, whereas developing countries are seen as victims but not perpetrators, if one disregards the cutting down of tropical rain forests: »Here in the western world we committed the whole thing in the last century due to industrialization.« (R57.1.105) »It can hardly be stopped now, that's why I think that it's becoming increasingly dangerous. I think it's just too late to change anything, as everyone drives a car, we all heat with the same natural gas and the rainforest is gone too.« (R55.1.262) »I mean, so far, poor countries were not in a position to contribute very much, I think the major contribution is made by the industrialized countries, all the CO<sub>2</sub> comes from the industrialized countries after all.«

The following commentary expresses the fascinating aspect that we are ›captives of a seemingly autonomous development of the modern industrial age, a development which can intensify curse and blessing equally, and from which an escape hardly seems possible, both on the benefit side and the side of globalized risks‹: (cf. Zwick 2001: 29) »Climate change - well, what do I think of climate change? Our life is based on the industry! ... Basically I consider the risk as not acceptable, but we just can't live without industry, without car!« (R56.1.112)

*The ›climate risk‹ challenge: fatalism or required activism?*

When assessing the acceptability of climate risk, opinions differ just as much as with the question of how to deal with this risk in the future and which institutions or actors ultimately hold the responsibility for the management of this risk. But let us first take a look at the acceptability of the risk.

Three argumentative patterns can be made out here. »Not affected« is the first line of argument: due to the time lag and the, for the time being spatially limited damage, one considers oneself as not (yet) affected. Accordingly, the acceptability of the risk is high and the urgency for risk minimization measures is small: »Yes, I can accept [the risk]. I think it will be quite a while before this will be a risk to me.« (R09.1.280) This attitude is rather an exception.

To the majority of interviewees the risk is not acceptable<sup>7</sup>, an attitude which can result in two different strategies. For one: a fatalist attitude ›you can't do anything about it‹

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<sup>7</sup> In this issue the qualitative findings do not correspond with the survey's data.

because *»the individual person will not be able to change anything.«* (R16.1.209). *»I think, it's simply too late to still change anything...«* (R55.1.262). *»Climate change? I have to live with it anyway no matter what, it's already happening.«* (R09.2.212)

Due to the lack of acceptability, the third strategy demands for action and countermeasures. It can be found even more frequently: *»It is highly urgent that some action is taken here!«* *»A lot of things will definitely have to be done here!«* (R30.1.113) The risk *»can not be accepted. We are living and we have an obligation to our descendents - no matter whether these are mine or yours. One should simply try, here too, to preserve some things.«* (R36.3.004) Here the question comes up as to who is responsible for the demanded measures.

#### *Responsibility and problem solving strategies*

Three groups are listed as being potentially responsible for risk minimization: the citizens themselves, politics (with a differentiation made between national and international politics) and industry (groups, companies, economy). Other actors, such as environmental organizations, local groups etc. were not listed.

The economic sector is made responsible only in individual cases and if so, with a critical undertone: *»Industry only provides solutions - and this is proven by the automobile - when the pressure becomes too high. Then they change it. (R37.2.385) »Where climate change is concerned there are some approaches, ...in nuclear power plants, with desulphurization facilities... Or now the automobile industry or the oil and gasoline prices. But only when pressure is exerted, otherwise they don't - not voluntarily! ... And probably more would be possible ... in the industrial sector.«* (R37.2.410) The following statement is markedly more critical: *»Of course, as small consumers we are not to be blamed for the climate change, but really the big business bosses of the economy who give orders such as building cars and cutting down the forest. That's what comes to my mind. I think that the big business bosses are to be blamed for it, and you can't trust these people where this issue is concerned. It is just not right to expose us to such a risk.«* (R55.2.176)

Most interviewees, however, believe that climate protection is primarily a political goal. Industry is indirectly included in this too. It is expected that legislation sets limits for the economic sector ... The public however is ascribed the narrowest margin to act and thus the lowest responsibility.

The responsibility of private citizens is mentioned only in individual cases. The citizen's own possibilities to become active oneself are considered small. Proposals and appeals are usually directed to the ›generalized other person‹: *»I mean, everybody can of course do something: less car driving, use more public transportation, take the bicycle, go*

*on foot and such things. Insulate your house better in order to use less fuel, put solar panels on your roof, don't buy any nuclear power and so on. Of course everyone can do something personally. Logically!*« (R30.1.131) But the performance of citizens is judged ambiguously where environmental protection is concerned. Some consider their fellow citizens quite capable of environmentally benign behavior, others are quite skeptical: *»There are some people who take it seriously and actually say ›I accept the disadvantages‹ or ›I'll just pay more money so that the environment will be less burdened‹. But then there is a large number of people who simply don't care.»* (R31.1.279) *»I can only say ..., that I consider the majority of people as being relatively ignorant with respect to this issue. Otherwise they would, I think, behave differently in a lot of cases.»* (R38.1.073) However, statements such as this one are as rare as attempts trying to ascribe citizens a decidedly political role: namely that the responsibility of the individual citizen should consist of the exertion of *»pressure on politics. That one says nowadays: ›I accept a policy which takes this up as a global issue - on the one hand. On the other hand this also means to be aware of the problem in the personal sphere and, say, to do without the car when it is possible.«* (R31.1.273) Occasionally taking political influence by way of elections is also made an issue (e.g. R53.1.417; R53.4.059).

Most interviewees emphasize that climate protection is not the task of private citizens but a political affair and that legislation should take the responsibility for it: *»I think that you can't do very much as a private person, because most of what can be done has been done already ... I simply think that the government should intervene too, particularly where industry is concerned. I do think that the government is the institution which should take care of it.»* (R18.1.234) Legislation should, on a national level, provide binding regulations requiring environmentally benign behavior which industry and citizens should abide by. *»Certain laws should be passed in order to make the emission of ozone lower than before. Certain poisonous substances should also be prohibited.»* (R10.1.281) Politicians are expected to *»pass concrete laws, that the [environmental pollution] caused by factories must be decreased, that alternative energies will be supported, that fuel for flying will be taxed. This is a very, very important point to me. This cannot be seen only in relation to Germany but on an international basis. And that an energy source which is dangerous will simply become so expensive that we will handle it a little more sparingly.»* (R43.2.117)

However, the interviewees are skeptical as to whether politicians will tackle this task with responsibility and dedication: *»I think, that this is a political issue and above all an economic one and as money determines everything it is difficult to get a grip on this issue.»* (R14.1.286) *»I have an ambiguous attitude towards politicians, because it is conspicuous that the least of them ... could care less about what is really happening. The main thing for them is that their own issues are on the agenda and that they will be re-elected!*« (R16.1.411). Dishonesty and the tendency towards *›symbolic politics‹* are also mentioned critically

in the following statement: *»Well I think the biggest risk ... is dishonesty: Just to invent empty word husks in order to deceive others.«* (R37.2.378)

Citizens' criticism is not better where international politics are concerned. In this case, above all, the politics of the USA are given poor ratings. The ascription of high state responsibility coincides with poor state performance which leads to the articulation of political frustration and dissatisfaction: *»What I would like to do most now is complain about the Americans, and about our wonderful politicians meeting at great climate conferences for a lot of money where they ultimately produce nothing but hot air. I am very disappointed in that respect!«* (R54.1.303) *»When I hear that the great nation of America turns away from the climate conference, from what has been agreed upon in Japan - been agreed upon two years ago - that there is a world climate conference and that people all join forces because we're in the same boat, about the gases, the ozone hole which is becoming bigger all the time. And that at the moment America is withdrawing completely and no longer wants to participate in the world climate conference simply just to go easy on the economy. I think that's an absolute scandal, to say it straight, in this case really all countries should join forces for one purpose, as agreed upon, not only Europe on its own.«* (R19.1.168) According to the interviewees' opinions national and economic interests prevent the implementation of collective ecological benefit and an effective problem-solving approach: *»I don't even think that it's the individual person's fault. Most of the time it's big countries, big businesses, causing the whole thing here. What is about with all the conferences, what was decided at the highest level? That some countries think they don't have to stick to it. So I think there are many national interests in the game.«* (R24.1.196) According to Zwick, these findings show *»that there is a credibility and trust gap between the ascription of responsibility to politics and industry as well as the expectations of the citizens regarding the problem-solving ability on the one hand, and the capacity of these institutions on the other hand. The fact that the public does not feel to be taken seriously in its concerns and worries, neither by the actors of the economy nor by those of the political system, can be interpreted as an indication of the ›self-referential closure‹ of social systems described by Niklas Luhmann: They revolve around their specific codes and programs respectively - political power here, economic success there - and in their perception of the citizens, seem to have lost the ability to communicate with sensitivity with other systems - in this case with the worries of the public.<sup>8</sup>«* (2001: 31) This is also expressed in the following opinion of one of the interviewees: *»I think information is withheld, reports are suppressed which would maybe lead to even greater discontent in the population...«* (R04.2.097)

Even more radical is the perspective assuming merely ›symbolic politics‹ behind the climate conferences without concrete intentions of problem solving: It is the »*industrial nations and also the future industrial nations which deal with the environment, namely to mercilessly exploit resources and then call climate conferences which do not change anything, because they don't really want to change anything at all. It is about options, it's not really about climate change!*« (R71.1.061)

#### 5.4 Summary and outlook

In the qualitative interviews climate change is described with highly pronounced properties: People see it as an anthropogenic, maybe even irreversible risk with disastrous potentials for harm. This risk seems acceptable to a certain limit, only as the risks are opposed by high potentials of benefit expressed in a modern life of consumption and standard of living. This balance judgement is reinforced by the fact that the interviewees assume a distribution of the expected harm which will be uneven in space and time: Owing to a geographically privileged position, the majority of interviewees believe themselves to be less threatened in the medium term and expect disastrous damage only for the coming generations. Despite individual starting points for a behavior going easy on the climate, the main responsibility for the solution of this problem is ascribed to politics, but it is given only little credit for its willingness to solve this problem and its competence to actually do so.

»It is amazing with which ›awareness‹ the public perceives the issue of climate change, its conditions of origin, its effects and the paradox, maybe even unavoidable consequences of modern industrial times. It is mainly politics and industry which are made responsible for solving the climate risk, even though the public concedes that the climate is highly important, but that individual motorized transportation and energy intensive amenities offered by modern industrial society are very dear to them too. The fatalism with which predominantly somber perspectives as to redemption from the climate problem are mentioned, is founded by three aspects. With the poor problem-solving ability of politics and industry, with the fact that the development (of the climate change) has maybe even developed dynamics of its own, and finally with the fact that an aversion of disaster would possibly require a quick, radical and possibly not acceptable about-face in thinking, deciding and acting. Hence, one of the interviewees sums up: ›*Basically the risk is not acceptable. **Basically** it is not acceptable as we would have to completely change our overall ecological self-comprehension in the whole world and effect a complete change of society and all that is behind it, oneself, the environment, production, the pursuit of profit... All values of which we are aware or not so aware, they would have to be radically changed and considered in a totally different perspective. But nobody*

*is willing to do that. Due to that I think that the risk is really not acceptable but that we will continue to move towards chaos.*« (R71.1.532)« (from Zwick 2001: 31)

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