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Media Consumption and Regional Perceptions of Global Climate Change: Findings from Germany

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Abstract

Global climate change has been one of the most urgent problems confronting humanity in recent years. However, there are intercultural and intracultural differences in perceptions both of the dimensions of global climate change and the necessity of fighting it. It is assumed that these perceptions depend heavily on the quantity and quality of media coverage and individuals' media usage. To test how media consumption interacts with sociodemographic variables in affecting perceptions of global climate change, a regional survey was conducted in the southwest of Germany. A representative sample of 753 persons was interviewed face-to-face in February 2008. The study provides differential insights into the relationship between predispositions, media consumption, and orientations towards global climate change. Results show that media effects are relatively small and subordinated to attitudinal predispositions such as interest in climate change and personal concern about it. In addition to that, it is demonstrated that media can affect attitudes on global climate change both in a positive and in a negative way.

Keywords: climate change, public opinion, media consumption, media effects, Germany

1. Introduction

In contemporary "risk societies" (Beck, 2007), mass media coverage of hazards and threats is as common as interpersonal exchanges about these unintended consequences of modernization, industrialization, mechanization, and globalization. The factual dangers notwithstanding, global risks always represent "constructs of reality" that are socially, interpersonally, and medially produced (Heinrichs, 2010). Concerning the individual handling of risks, constructs of reality become all the more important the more specific dangers are withdrawn from individuals' direct, sensual experience. This applies particularly to global climate change, its construction in the mass media, and individuals' perception of it (Weber, 2008). In contrast to the weather, which is experienced firsthand, "climate" or the "ozone hole" are first and foremost scientific constructs based on theoretical model calculations and statistical analyses which extend to time spans and geographical spaces beyond the individual experience. They have to be rendered tangible by mass and online media (Taddicken & Neverla, 2011).

The last UN climate change conference in Doha emphasized that the perceived magnitude of climate change and the urgency of coping with it vary both inter- and intraculturally (Neverla & Schäfer, 2012). On the one hand, intercultural differences have economic, political and media-related causes. In addition to that, they are related to people's sensual perception, familiarity, and concern with regard to the (potential) consequences of the anthropogenic climate challenge. Intracultural differences are evidently dependent on chances to intuitively assess risks (correctly). In a society, these chances are unequally distributed. Furthermore, both the access to relevant information which is indispensable for awareness raising and the individual handling of that information can diverge. From this it follows that the construct "climate change" can be deconstructed on (at least) two levels: first, on the level of public discourse, particularly in the mass media (Good, 2008; Olausson, 2009; Schäfer, Ivanova, & Schmidt, 2011), and second, on the level of collective and individual perceptions, attitudes, and modes of behavior (Krosnick, Holbrook, Lowe, & Visser, 2006; Leiserowitz, 2006).

In recent years, both levels have been the subject of intensive research. Initially, the focus lay on media coverage and public and scientific discourse (Bell, 1994; Nitz, 2001; Boykoff & Boykoff, 2004; Good, 2008; Brown, Budd, Bell, & Rendell, 2011; Schäfer, Ivanova, & Schmidt, 2011; Neverla & Schäfer, 2012). By contrast, individual perceptions of the global warming process and the impact of media consumption on these perceptions have only recently gained scientific attention (Zhao, 2009; Arlt, Hoppe, & Wolling, 2010; Taddicken & Neverla, 2011; Scruggs & Benegal, 2012; Taddicken, 2013). It is exactly this subfield of research to which this paper wants to contribute. It asks how media consumption interacts with sociodemographic variables in affecting attitudes and behavioral intentions relevant to climate change. For this purpose, I look *exemplarily* at a specific region in Germany: the South Palatinate, a region located in the southwest of Germany, bordering on the Anterior Palatinate in the North, the river Rhine in the East, the French region of Lower Alsace in the South, and the West Palatinate in the West (see figure 1). The South Palatinate consists of two administrative districts: Germersheim and the Southern Wine Route on the one hand, and the city of Landau on the other. It has a population of 227,000. While the Rhine areas are affected by climate change to an average extent, other parts of the South Palatinate are affected more heavily (www.klimafolgenonline.com).

Figure 1. Location of the South Palatinate

In focusing on a specific region, I take into account that globalization and the associated rapid increase in global risks also accelerate a process of *glocalization* (Robertson, 1998). If I want to discuss the impact and the realization of the worldwide globalization process and its dysfunctions, I need to look at the day-to-day "small world", that is localities and regions (Weber, 2007). Nevertheless, this approach is rare (Brown et al., 2011), especially when it comes to representative polls in Germany and other member states of the European Union (EU) (Borgstedt, Christ, & Reusswig, 2010; European Commission, 2011; Engels, Hüther, Schäfer, & Held, 2013).

Below, I will first give a short overview of current studies dealing with climate-related awareness and the supposed impact of media use (section 2). Here, the main focus will be on the national level in Germany, since there is a lack of comparable regional studies. Secondly, the methodological approach will be presented (section 3). Thirdly, I will investigate climate-related attitudes among people living in the South Palatinate empirically. Here, I will look intensively at the impact of sociodemographic predispositions and media consumption (section 4). In conclusion, the most important results will be summarized and discussed (section 5).

2. Climate Change as Mediated Daily Threat

In 2011, climate change was perceived as second largest global challenge (behind the issue "poverty, hunger, and shortage of drinking water") by the people of the 27 EU member states: 50 per cent of EU citizens stated that climate change was one of the most urgent problems; it was the greatest danger for mankind at the moment, said every fifth EU citizen and every fourth German (Kuckartz, 2010; European Commission, 2011). Women generally display a greater sensitivity to risk concerning the consequences of global warming than men (Leiserowitz, 2006). In addition, environmental protection, including the fight against the results of the climate change, has been top of the political agenda in Germany and other EU member states for years (besides labor market policy, economic policy, and fiscal policy) (Wippermann, Calmbach, & Kleinhückelkotten, 2008; Borgstedt, Christ, & Reusswig, 2010).

Awareness of the global climate challenge is an attitudinal construct which embraces cognitive, affective, and behavioral components (Krosnick et al., 2006; Arlt et al., 2010). These include a) the *interest* in and *knowledge* about reasons and consequences of global climate change, b) its *emotional* and moral evaluation, c) trust and distrust towards responsible actors, and d) the disposition to *behave* in a climate-conscious manner.

By and large, the representative polls conducted regularly in Germany in recent years have pointed to exceptionally high levels of awareness of risks concerning the climate challenge (Deutsche BP, 2007; Wippermann et al., 2008). However, awareness is strongly connected to ignorance and uncertainty (Weber, 2007). This is crucial, since the use and evaluation of media supposedly affect climate-related awareness – in all its dimensions. It seems that the more media people consume (habitually or with regards to specific information about global warming), the more they know about climate change (Taddicken & Neverla, 2011). This effect might be the larger the more salient the issue of climate change is on the media agenda, that is, when people hardly can avoid media reports on climate change even if they do not intentionally look for them (Besley & Shanahan, 2004; Arlt et al., 2010). This was precisely the case in 2007, when Germany held the EU Council Presidency and accentuated climate policy (Schmid et al., 2010), and in 2008 before the global financial and economic crisis set in.

More specifically, media effects seem to vary a) with recipients' predispositions, that is, their sociodemographic background (age, sex, education) and their intention to seek information, (Krosnick et al., 2006; Zhao, 2009) and b) the kind of media they consume. If I first take a look at sociodemographics, it is females rather than males who show interest in, knowledge of, and concern about climate change – and environmental problems in general. In addition, the older the people get, the more they become aware of and concerned about global warming. The same holds true for their level of formal education (Schulz, 2003; Zhao, 2009). Second, when it comes to media consumption, empirical findings are less unambiguous. There seems to be a difference between the environmental concerns and actions of people who watch television and who read newspapers (Besley & Shanahan, 2004). For example, while use of public TV newscasts seems to stimulate climate-related awareness and even behavioral intentions among Germans, consuming print media seems to exert either no impact (Taddicken, 2013) or a negative impact – at least cognitively (Arlt et al., 2010). By contrast, newspaper consumption had a positive effect on global warming perceptions on a representative sample of Americans (Zhao, 2009). This supports the assumption of intercultural differences.

Against this backdrop of contradictory findings, I want to identify *how media consumption interacts with sociodemographic variables in affecting perceptions of global climate change*. I anticipate differences depending on a) the sociodemographic background of the respondents, b) their media usage, and c) the cognitive, evaluative or behavioral dimension of global warming perceptions that is addressed.

3. Method

In order to answer the research question, I initiated a representative survey in the South Palatinate. Based on official population statistics, I selected a proportionally stratified sample with the attributes "place of residence", "age", and "sex". Respondents were chosen randomly within in each stratum. The total sample consists of 753 persons who were interviewed face-to-face in February 2008.[1] 51.7 per cent of the interviewees were female, 48.3 per cent male. Roughly three fourth of the sample (77 per cent) were from the district Southern Wine Route, 16 per cent from the city of Landau, and 7 per cent from the district Germersheim. Respondents' average age lies at 47.7 years (SD = 17.0). Therefore, the sample is representative of the adult population of the South Palatinate.

The survey comprises 20 standardized questions, which took seven minutes on average to answer. I use the following seven questions to measure global warming perceptions (*dependent variables*):

- *Interest*: "How much are you interested in global climate change?" (scale: 1 "very much" to 5 "not at all")

- *Personal concern*: "Independently of the general public, to what extent do you personally feel threatened by global climate change?" (scale: 1 "very much" to 5 "not at all")
- *Evaluation of the government*: "All things considered, how would you evaluate the German government's fight against the consequences of climate change?" (scale ~ school grading system: 1 "very good" to 6 "very poor")
- *Acceptance of policies*: "To what extent would you accept policies to fight the global climate challenge, even if this meant personal costs and limitations?" (scale: "completely" to 5 "not at all")
- *Perceived behavior:* "In your own opinion, how climate-aware is your behavior?" (scale: "very strong" to 5 "not at all")
- *Activities:* "Which measures do you take personally to intentionally protect the environment and nature?" a) "I frequently do not use the car", b) "I abstain from air travel", c) "I switch off all electrical devices that I do not use", c) "I support environmental and nature protection organizations" (scale: 1 "agree completely" to 5 "do not agree at all")

For the *independent variables*, I turn to sociodemographics (sex, age, highest education achievement) and six media consumption variables, asking the question: "In the course of the last four weeks, how often have you used the following media for information?"

- *Newspaper use*: "read the political pages of newspaper"
- *Use of political magazines*: "read a political magazine such as 'Der Spiegel' or 'Focus'"
- *Use of public-service TV newscasts*: "watch TV newscasts of ARD or ZDF"
- *Use of commercially funded TV newscasts*: "watch TV newscasts of RTL, SAT.1, or Pro Sieben"
- *Radio use*: "listen to radio newscasts"
- *Internet use*: "use political information from the internet/online services"

The question asks about daily, habitualized consumption of media information and not about the directed use of climate-related information (Taddicken & Neverla, 2011), which might have been ephemeral in the total flow of information, despite Merkel's efforts to put the issue on the agenda.[2] Media consumption was measured on a five-point scale ranging from 1, "frequently", to 5, "never".

For the analyses, all scales of dependent and independent variables were transformed and standardized to a scale from 0 ("disagree completely"/"never") to 1 ("agree completely"/"frequently"). The data was analyzed both descriptively and inferentially.

4. Empirical Results

4.1 Climate Awareness – Orientations and Actions

As mentioned above, the construct "climate awareness" comprises several components. Mean evaluations and their statistical significance (F tests) are documented in table 1. At first sight, respondents' high level of interest in climate change (M = 0.63, SD = 0.25) stands out. It is even higher than their interest in politics in general (M = 0.59, SD = 0.25) and in economic issues (M = 0.57, SD = 0.24).[3] Similar to previous studies, also significant differences in sex and age have been detected (Taddicken & Neverla, 2011; Zhao, 2009): female respondents seem to be more interested in the global warming process than men. In addition, interest in climate change rises linearly, as anticipated, with age – up to the age group of 60+ – and with the educational level of the respondents.

Table 1 supports the assumption that interest in the global warming process and individual concern are not the same, although they strongly correlate (r = .51, n = 753, p = .00): while I find comparable sex- (Leiserowitz, 2006) and age-related correlations (see F tests), there is no significant educational effect. It is students, that is, those who will be affected the longest by the consequences of global warming, who are the most concerned. This might also reflect intensive discussions at school according to the curricula. On the other hand, those without any formal qualifications display the lowest degree of personal concern. Differences between the other educational groups are only marginal.

Concerning the evaluation of the German government in its fight against the consequences of climate change, respondents as a whole say it is satisfactory (M = 0.51, SD = 0.25). As mentioned above, this happened against the backdrop of Angela Merkel's intensive efforts to put the issue "climate change" on an EU-wide political agenda. There are no significant differences between sexes and age groups in assessing these efforts. Only one

educational group stands out: Once again, it is the students, those most concerned, who grade the government the worst (M = 0.33, SD = 0.12). To some degree, this might reflect students' general skepticism towards "old-fashioned", established political institutions such as the government, the parliament, or the political parties in Germany (Schneekloth, 2010). Still, it also shows to what extent the younger generations feel "lost" when it comes to the question of how to cope with the consequences of global climate change.

Table 1. Climate awareness in the South Palatinate (N=753, comparison of means, standard deviations in brackets)

	Interest	**Personal concern**	**Evaluation of the government**	**Acceptance of policies**	**Perceived behavior**
Sex					
female	0.66 (0.24)	0.62 (0.26)	0.50 (0.24)	0.60 (0.27)	0.57 (0.20)
male	0.61 (0.26)	0.56 (0.28)	0.52 (0.26)	0.56 (0.29)	0.56 (0.23)
F test	7.90**	11.58**	0.82	2.68	0.10
Age					
18-29 years	0.56 (0.25)	0.54 (0.27)	0.51 (0.22)	0.56 (0.27)	0.49 (0.23)
30-44 years	0.63 (0.24)	0.60 (0.25)	0.51 (0.24)	0.59 (0.26)	0.56 (0.19)
45-59 years	0.68 (0.24)	0.65 (0.25)	0.49 (0.26)	0.59 (0.29)	0.59 (0.20)
60+ years	0.64 (0.26)	0.56 (0.30)	0.53 (0.26)	0.59 (0.29)	0.59 (0.24)
F test	6.32***	5.55**	1.04	0.48	7.33***
Education					
no formal qualification	0.50 (0.26)	0.44 (0.35)	0.51 (0.30)	0.43 (0.33)	0.48 (0.22)
still student	0.50 (0.25)	0.67 (0.14)	0.33 (0.12)	0.50 (0.25)	0.50 (0.00)
certificate of secondary education	0.62 (0.26)	0.56 (0.28)	0.54 (0.27)	0.53 (0.29)	0.56 (0.23)
school-leaving certificate	0.62 (0.26)	0.59 (0.27)	0.52 (0.27)	0.54 (0.30)	0.57 (0.22)
advanced technical college entrance qualification	0.65 (0.23)	0.60 (0.30)	0.48 (0.26)	0.59 (0.21)	0.56 (0.23)
university-entrance diploma	0.62 (0.24)	0.60 (0.26)	0.51 (0.23)	0.62 (0.26)	0.55 (0.21)
completed studies at a university/technical college	0.70 (0.23)	0.63 (0.26)	0.49 (0.24)	0.67 (0.25)	0.61 (0.20)
F test	2.49*	1.42	0.76	5.24***	1.45
Total	**0.63 (0.25)**	**0.59 (0.27)**	**0.51 (0.25)**	**0.58 (0.28)**	**0.57 (0.22)**

*** p < .001; ** p < 0.01; * p < 0.05

Regarding behavioral aspects, two questions were raised: first, respondents' willingness to accept policies to fight climate change, and second, the assessment of their own climate-related behavior. Both dimensions lie slightly above average (acceptance of policies: M = 0.58, SD = 0.28; perceived behavior: M = 0.57, SD = 0.22). Once again it is the females and – on a significant level – the better-educated individuals who show top levels of acceptance (Arlt et al., 2010; but different Taddicken & Neverla, 2011). Therefore I can conclude that those citizens who are most interested in the global warming process and who are supposedly the most concerned (see below) are also those who are the easiest to convince that fighting climate change might cause personal restrictions. On the other hand, the group of people who are least interested and least concerned acts the least climate-consciously. This is the group of 18- to 29-year-old respondents.

Younger generations' supposed restraint in matters of climate change gained support when people were asked which measures they had taken intentionally to protect the environment and nature (see figure 2). Once again, the youngest respondents are the most reserved concerning all personal initiatives. This is surprising, given the well-established assumption that climate-aware behavior is widespread among younger cohorts (Schneekloth & Albert, 2010). However, this result might also reflect the question, which asked for "intentional" activities, while climate-related behavior is supposedly already habitualized to a large extent among younger cohorts. If this assumption holds true, their behavior would no longer be intentional. Besides this restriction, figure 2 demonstrates that choice of environment- and climate-protecting measures rises linearly with age (r = .19, n = 753, p = .00). Switching off electronic devices is already a "standard measure" routinely chosen by all age

groups – particularly the oldest. Compared to this, not using the car, abstaining from air travel, and supporting environmental organizations are activities chosen relatively rarely.

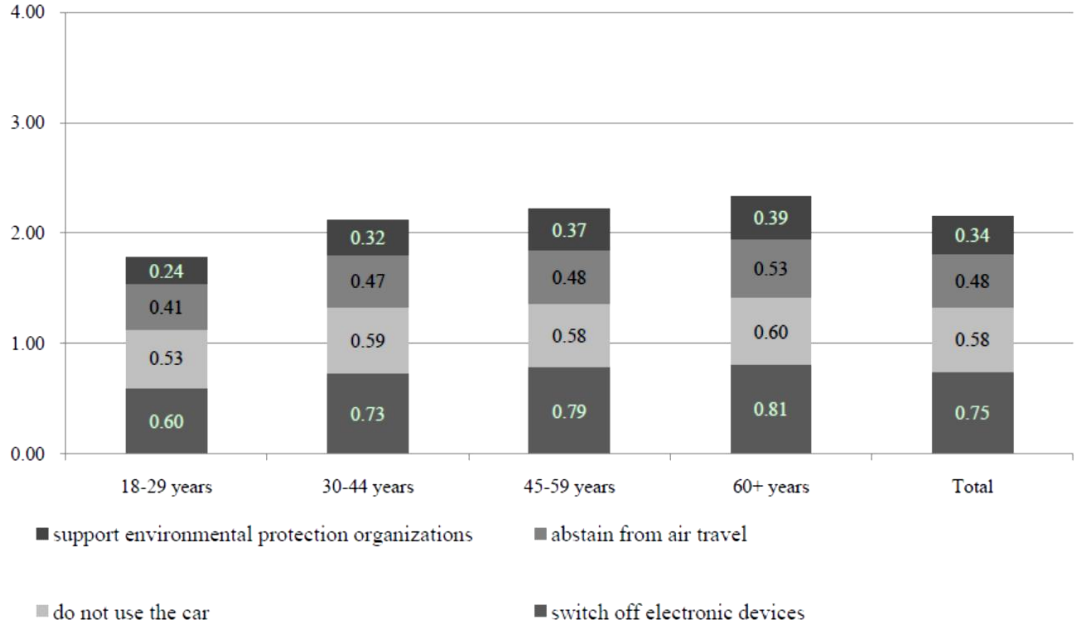

Figure 2. Climate-aware activities in the South Palatinate (N=753)

4.2 Climate-related Perceptions and Media Consumption

As mentioned above, global climate change represents a construct, something not directly linked to experience and out of daily reach, out of sight. Therefore, people interested in the consequences of global warming process have to rely on media interpretations. It is the media coverage that puts daily phenomena such as storms, drought, heat or floodwaters into the context of global warming (Weber, 2008). Against this backdrop, I assume that the climate-related perceptions presented above are highly dependent on the quantity and quality of media consumption. I want to know how powerful these effects are, and whether they affect the attitudinal dimensions in a positive or negative way.

Looking first at the correlations between media consumption variables and climate-related perceptions (see table 2), there are two mass media that exert a positive impact on *all* attitudinal and behavioral dimensions in a significant way. These are daily newspapers and public TV newscasts. Both the consumption of newspapers and watching ARD and ZDF newscasts correlate most strongly with behavioral components (acceptance of policies, perceived behavior). In addition, public TV newscasts increase recipients' interest in the global warming process – and vice versa ($r = .20$, $n = 753$, $p = .00$) (Arlt et al., 2010). While listening to the radio and reading political magazines also correlate positively with all dimensions (but on a lower level and not always significantly), the correlation of internet usage and watching commercially funded TV newscasts with attitudinal and behavioral dimensions is somewhat ambivalent. There is even one outstanding negative correlation: between the consumption of commercially funded TV newscasts and the acceptance of climate-related measures ($r = -.19$, $n = 753$, $p = .00$). In sum, the media's impact on perceptions of global warming seems not to be positive in general, as initially assumed (Lomborg, 2001). Rather, it seems to depend on the media chosen.

Yet this interpretation might be too far-reaching. Bivariate correlations simply do not allow for interpretations of *effects*, since the *direction* of correlation is unclear – and is sometimes reciprocal: to what extent does interest in global climate change have a positive effect on watching public TV newscasts, or to what extent do ARD and ZDF newscasts stimulate recipients' climate-related interest? If I want to answer that question and test how strong effects are when all relevant variables are considered in one model, I have to turn to multiple regression models (e.g. Schulz, 2003; Arlt et al., 2010; Taddicken & Neverla, 2011; Taddicken, 2013). Concerning this matter, OLS regression estimates for example give us an idea of the direction and strength of correlations between one dependent and multiple independent variables.

Table 2. Bivariate correlations between climate-related perceptions and media consumption (N=753, Pearson's r)

	Daily newspapers	Political magazines	Public TV newscasts	Commercially funded TV newscasts	Radio	Internet
Interest	.13**	.07	.20**	-.03	.09*	-.04
Personal concern	.12**	.10**	.13**	.07*	.12**	-.01
Evaluation of the government	.12**	.02	.11**	.04	.03	.03
Acceptance of policies	.23**	.21**	.19**	-.19**	.11**	.15**
Perceived behavior	.18**	.11**	.26**	-.04	.12**	.02

** $p < 0.01$; * $p < 0.05$

When I look at regression models concerning climate-related interest and personal concern (see table 3), media consumption variables turn out to be of minor importance. There is only one significant positive effect: watching TV newscasts of RTL, SAT.1 and Pro Sieben increases recipients' personal concern. On the other hand, interest in global warming processes is completely independent of media effects. It is most significantly the degree of personal concern which positively influences the degree of climate-related interest. In addition to this, the aforementioned linear correlation between interest on the one hand and age and educational achievements on the other is maintained. Regarding educational achievements and interest, sex-related differences disappear in the regression model. But they prevail with regards to personal concern: Women are in fact more concerned about global warming than men. In addition, the more interested people are, the more they feel personally affected by global climate change.

Table 3. OLS regression estimates for climate-related perceptions (N=753)

	Interest	**Personal concern**	**Evaluation of the government**	**Acceptance of policies**	**Perceived behavior**
	Beta	Beta	Beta	Beta	Beta
Sex	-.04	-.10**	.03	-.05	.02
Age	.14**	-.01	-.02	-.01	.09
Education	.10*	.05	-.09	.07	-.01
Newspapers	-.02	.05	.08	.11**	.05
Political magazines	.02	.02	-.00	.09	.02
Public TV newscasts	.07	.06	.09	.03	.12**
Commercially funded TV newscasts	-.06	.10**	.04	-.16***	-.04
Radio	.02	.00	-.01	.03	-.01
Internet	-.02	.01	.06	.05	04
Personal concern	.48***		.02	.31***	.33***
Interest		.49***	-.02	.19***	.11*
Constant	.23	.22	.46	.17	.19
R^2	.30	.29	.03	.32	.23

*** $p < .001$; ** $p < .01$; * $p < .05$

The evaluation of the government in its fight against the consequences of the global climate challenge cannot be explained by any of the media consumption variables, sociodemographics, interest in, and personal concern over global climate change. The explanatory power of the model is the weakest ($R^2 = .03$), which means that the aforementioned mediocre assessment of the government's performance is independent of any climate-related predispositions or media use. It rather seems to be a phenomenon that is influenced by general skepticism towards the government (e.g. Niedermayer, 2005).

The two behavioral dimensions, acceptance of policies and perceived behavior, are not influenced by sociodemographics, either. Here, I also control for the impact of attitudinal variables (interest, personal concern), because behavioral intentions require some degree of climate-related consciousness of the problem. When I look at the acceptance of policies and self-ascribed behavior, the strongest impact is rooted in the interest in climate change. In addition, personal concern affects both acceptance of policies and self-ascribed behavior positively.[4] The more the people of the South Palatinate are interested in global warming, the more they feel personally affected by the consequences of global climate change, and the more pronounced is their climate-conscious

behavior, even if it causes individual costs.

Consumption of three different media types also affects two behavioral components: First, the strongest but negative impact comes from watching commercially funded TV newscasts on the acceptance of policies. The more you tune in to RTL, SAT.1 and Pro Sieben, the less you are prepared to take any climate-protecting measures. Second, reading daily newspapers has a positive effect on the acceptance of climate-related policies. Both correlations were not found in previous research. Third, watching public TV newscasts also affects perceived behavior in a positive way (also Arlt et al., 2010; Taddicken, 2013).

To sum up, I can conclude that a) media effects are relatively small and subordinate to attitudinal predispositions, b) they are differentiated by media type, and c) they affect different perceptional dimensions in different ways. While some media – particularly TV newscasts and newspapers (Besley & Shanahan, 2004) – have an impact on climate-related attitudes and behavioral intentions, the use of other media – political magazines, radio, and internet – seems to be completely without effect. To some extent, these findings contradict other empirical research, which points, for example, at behavioral effects of the internet, too (Zhao, 2009; Arlt et al., 2011).

5. Conclusion

In recent years, the issue of climate change has ranked high both on the media agenda and in general awareness. As soon as the global financial and economic crisis ebbs away, the global warming process and its consequences for the entire ecological system will once again form a perennial issue with which politics, media, and society will be confronted equally (Scruggs & Benegal, 2012). It can be assumed that the basic coordinates in the relationship between media coverage on climate change, its perception, and individual processing will then shift successively due to the fact that the risks and consequences of global warming process will become more and more directly accessible. We can expect intensified melting of glaciers, rising sea levels, changing rainfall patterns, and an increase in weather extremes. Media and public discourse will emphasize that these phenomena are not only temporary weather caprices. As a consequence, climate-related awareness will rise and expand both interculturally and intraculturally. Connections between media consumption, climate consciousness, and corresponding actions that are currently emerging will then have to be put to the test again.

For the moment, I can summarize that perceptions of global climate challenge are highly dependent on attitudinal predispositions, that is, people's interest in global warming and their personal concern. This is in line with other studies (Schulz, 2003). Surprisingly, these predispositions not only cover up the impact of sociodemographic variables (in contrast to Taddicken & Neverla, 2011), but of media consumption variables also. Sex and age are important indicators for estimating people's interest in climate change (increasing with age) and their personal concern (women are more concerned than men). But independent of age, sex, or education, people accept certain policies in fighting negative consequences of climate change if they are interested in the topic and individually concerned. However, consumption of specific media (namely newspapers and TV newscasts) can modify their attitudes and particularly their behavioral intentions – mostly in a positive way. There is only one negative effect of media consumption: people watching commercially funded TV newscasts are less inclined to accept policies against climate change, although their personal concern increases.

These exemplary findings for a region in the southwestern part of Germany differ to some extent from studies based on nationwide representative polls. Thus they require validation. This brings me to some methodological remarks. I simply cannot say if the findings presented are typical for other regions in Germany also. Concerning this matter, comparable data that takes the glocalization process into account is needed desperately. I also do not know if the relatively small and differentiated effects of only two media types result from operationalization. If I had not asked for general, information-related media use but for specific consumption of climate change coverage, I might have found stronger effects (Taddicken & Neverla, 2011; but different Taddicken, 2013). In addition to this, weak media effects might also be explained by media coverage on climate change, which was – in the total flow of information – still ephemeral in quantitative terms. To test this assumption, survey data on attitudes and media consumption – panel data at best – would have to be combined with media content analyses. This has not been done in climate change research to date. Such an approach could help us to understand why certain media exert no impact on recipients, while others stimulate and/or weaken certain attitudes and behavioral intentions (in general e.g. Wolling, 1999). At any rate, findings lead me to believe that a correlation exists between the way in which the issue of climate change is handled journalistically and covered by specific media and its impact on recipients' perceptions. However, this question has to be left open for future analysis in this field of both high social scientific attention and urgent political and societal demand (Nisbet & Myers, 2007).

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Notes

[1] The survey was integrated into a project class of the University of Koblenz-Landau, Campus Landau. I would like to thank all participants for conducting interviews.

[2] In 2007, the six nationwide daily and weekly newspapers with the highest circulation (*Bild*, *Frankfurter Allgemeine Zeitung*, *Frankfurter Rundschau*, *Süddeutsche Zeitung*, *Tageszeitung*, *Die Zeit*) and the three political magazines with the highest circulation (*Focus*, *Stern*, *Der Spiegel*) published 2,164 articles in total dealing with topic "climate change".

[3] Both items – interest in politics in general and in economic issues – were measured separately, using the same scale (without illustration).

[4] All models were checked for multicolinearity between independent variables. There are none.