

The Influence of Institutional Trust and Perceived Control on the Perceived Risk of Terrorism

Author: Hannah Reusch

Date : 8/27/2010

1st Supervisor: J.M. Gutteling

2nd Supervisor: E.F.J ter Huurne

Abstract

Since 9/11 terrorism has become a prevailing issue in people's risk perceptions as well as it has become a frequently addressed and discussed topic in the news media. Although researchers disagree about the effects media have on risk perception it could be demonstrated that media can affect our risk judgments by influencing our emotions. Our first emotional reaction to media can affect risk judgments made later on and therefore can take the role of an indicator for risk perception. Goal of the present study was to assess the influence of institutional trust and perceived control have on the negative affective reaction towards terrorism. In a 2x2 between subject design in which participants were confronted with different versions of a newspaper article their negative affective reactions to the risk of terrorism were measured. Statistical analyses revealed that neither participants' degree of trust nor their self-efficacy could be successfully manipulated. Still an interaction effect between the concepts trust and control could be found for the immediate emotional reaction after reading the article.

Introduction

Since the terrorist attacks on the world trade centre on 9/11/2001, terrorist attacks as a risk have become a focus of attention in the media and the public attention. Directly after 9/11 86% of all participants in a European study stated that they are afraid of terrorism (European Commission, 2001). Another study about public opinions reveals that international terrorism is perceived as a threat to their countries by 91% of the US citizens and 65% of the European citizens (German Marshall Fund of the United States & the Chicago Council on Foreign Relations, 2002). In a study conducted by the European Union 6 years later, in 2008, 53% of the participating population indicated that they perceive terrorism as a major problem. The fact that most of the questioned people have never been a victim of terrorist attacks nor has a family member been, leads to the question what the factors are which give rise to this high risk perception.

Terrorism and the media. Media can rapidly convey news about recent events and inform the public about what is happening locally, nationwide or worldwide. Concerning many issues, especially events happening on an international level, media can provide information that would not be accessible for the general population without media. In the case of terrorism we strongly depend on media in order to receive our information, which assigns a great deal of responsibility to media. Media decide what are informed about, which information is retained and they can influence how we interpret the displayed events (Giles, 2000). In the case of terrorism a relationship of mutual dependence between media and terrorist organizations can be found. Terrorism can be seen as a psychological weapon, aiming at frightening and intimidating people by giving them an intense feeling of uncertainty. “The primary goal of terrorism is (...) to disrupt society by provoking intense fear and shattering all sense of personal and community safety. The target is an entire nation, not only those who are killed, injured, or even directly affected.” (In Bongar et al. [Eds.], 2007). Media are able to distribute messages to a wide public and that is why terrorist organizations depend on media as their platform to disseminate their threatening messages (Silke, 2001). Terrorism in turn is able to provide media with a wide variety of sensationalistic news stories. Situations as hijackings or the taking of hostages have the capacity of evoking the public’s interest and therefore enhance the audience or readership for a prolonged period of time (Wilkinson, 1997). As the media market is highly competitive and the aim is to enhance the numbers of audience or readership television transmitters, radio stations and newspapers are constantly

under the pressure of being the first to report about incidents and provide the most information.

The media and risk perception. Due to our dependence on media our perception of a certain risk can artificially be magnified or minimized. As media offer the possibility of reaching many people it is a custom of government agencies to use media in order to inform their public and to influence their behaviour and perception of certain media contents. Media carry over the frames provided by the dominant institutions that are active in the concerning debate, which means that those institutions for a great deal decide what is reported and what media information we are confronted with (Singer & Endreny, 1987).

It was found that risk perceptions differ for countries, dependant on media content, which makes it possible to state that media content influences risk perception (Slovic, Fischhoff & Liechtenstein, 1982). Media content in turn is influenced by scientists' calculations of a risk, but it is often biased toward the dramatic (Wahlberg & Sjöberg, 2000). This opinion is supported by Johnson and Covello (1987) who assume that media have a tendency to focus on drama and conflict.

Although it is frequently suggested that media play an important role in risk perception, there still is disagreement over the contribution of media in individual risk perception. Slovic and Combs (1979) related a high level of perceived threat to frequent media exposure, but there are few studies that have directly assessed the role of media in the process of risk perception. Some researchers emphasize the strong influential effect of media on risk perception (Kone & Mullet, 1994) and affirm that media can affect people's risk perception by influencing their emotions (Fischhoff, Gonzalez, Small & Lerner, 2005; Lerner, Gonzalez, Small & Fischhoff, 2003).

There are researchers who disagree with the view of media as a determining factor in risk perception and claim that our perceptions of information as risky or not depend on already existing views (Vallone, Ross & Lepper, 1985). This point of view is underlined by a study of Wiegman and Gutteling (1995): People who have no personal experiences with a certain hazard tend to rely on media in order to obtain their information and form their attitudes. In contrast, people who have already had personal experiences with one kind of hazard tend to rely more on their own experience and have a tendency to judge media information on this topic as inaccurate and ignore it. It is necessary to point out that the mentioned studies did not distinguish between the different kinds of media. Usually studies on the influence of media on risk perception focus on news and entertainment media, but it is hard to find studies which focus on the influence of targeted media campaigns. Furthermore there are no studies

comparing the effect of a media campaigns on risk perception with the effect of news or entertainment media. (Wahlberg & Sjöberg, 2000).

The emotional background of Risk Perception. Risk perception can be seen as a mental process, a product of the human mind, and therefore does not necessarily have to be an actual event (Renn, 2005). Jaeger defined risk as "a situation in which something of human value (including humans themselves) has been put stake and were the outcome is uncertain" (Jaeger, Renn, Rosa & Webler, 2001). It can be assumed that risk is about the probability that something undesirable could happen as a consequence of somebody's actions. But how do we perceive and judge risks?

Slovic, Finucane, Peters & McGregor (2004) distinguished the ways in which human beings evaluate risks: The term risk as feelings is used to describe our fast and instinctive reaction to danger whereas risk as analysis "brings logic, reason and scientific deliberation to bear on hazard management". Risk assessments are rarely made on the basis of statistical probabilities or pure logic (Fischhoff, Gonzalez, Small & Lerner, 2005). Emotional reactions have a consistent relationship with risk perception (Drotz-Sjöberg & Sjöberg, 1990) as they can influence cognition and guide subsequent behaviour (Lerner & Keltner, 2001).

Responses to situations in which a risk is perceived result in part from the first emotional reaction to that risk, which can include feelings as fear or anxiety (Loewenstein, Hsee, Weber & Welch, 2001) and our first reactions to stimuli influence further information processing and judgement (Zajonc, 1980). Therefore it can be concluded that these emotional reactions affect the risk judgement made later on and can be used as an indicator for the perception of that risk (Loewenstein et al., 2001). The emotions of fear and anger have a strong influence on risk perception. This influence works in opposite directions for these two emotions: Whereas fear is assumed to lead to a higher perception of a risk, anger is supposed to have a declining effect on risk perception (Lerner & Keltner, 2001). It is assumed that the elevating effect of fear on risk perception is caused by the characteristic features of fear: The emotion of fear is associated with appraisals of uncertainty and situational control (Lerner & Keltner, 2001, Lerner et al., 2003) and can arise from the feeling of not being able to control a situation (Smith & Ellsworth, 1985). If this is the case then it would be possible to elicit the emotion of fear in people by giving them the impression of not being able to control a situation. As mentioned earlier, emotional reactions have a strong influence on judgments of that risk which are made later on. Thus this fear in turn would enhance the level of perceived risk.

Self efficacy and Perceived control. Perceived self-efficacy in the context of risk perception can be defined as the personal evaluation of how capable a person sees him or herself in organizing and executing risk mitigating actions (Bandura & Adams, 1977). It is a state of mind which varies from one task to another. Several studies have shown a significant interaction between perceived risk and self-efficacy (Rimal, 2001). Perceived self-efficacy to exert control over threatening events has a strong connection with the raise of fear (Bandura, Adams & Reese, 1982). Persons who do not judge themselves as sufficiently potent to manage threats suffer from high levels of anxiety arousal and view their environment as hazardous (Bandura & Ozer, 1990). People high in self-efficacy do not evaluate their environments as hazardous and also tend to see themselves as more solid in distinguishing between risky and safe situations. Thus the threat that emanates from certain information or events can be seen as a conjunction between the perceived risk coping ability and the hazardous environment (Bandura & Ozer, 1990). A concept that is closely related to the concept of self-efficacy is the concept of perceived control. Results of a study by Weinstein (1980) in which people were to estimate the likelihood that positive and negative future events occur, such as getting married or becoming addicted to alcohol, showed that those estimates are strongly influenced by the perceived controllability of those events. The question that arises is if there is a certain manner of reporting about risks that mitigates the perceived risk by giving people a feeling of control over the situation. This is an especially interesting question concerning terrorism, as it differs from risks as car accidents. In this much more frequent case people are able to protect themselves taking preventive actions as closing the seatbelt and driving safely. In the case of terrorism, the uncontrollable nature is what makes people frightened. People are unable to exercise any kind of control over terror attacks and cannot protect themselves from being victimized. In a Canadian sample 67.6 % viewed the risk of terrorism as uncertain, 73.5% stated that they judge terrorism as difficult to control personally (Lemyre, Turner, Lee & Krewski, 2006). As mentioned in the section above having no control elicits fear which in turn has the effect of perceiving risks as greater than in conditions where a subject has a strong belief of control (Lerner & Keltner, 2001).

Hypothesis 1)

The more perceived control over terrorism is induced, the less fear is experienced.

Institutional Trust. The concept of institutional trust implies that an individual is willing to rely on public institutions and its representatives that have the expertise and capacity to make decisions and take action to protect the public in case of a threat to its safety and health (Siegrist, Cvetkovich & Roth, 2000). Perceptions of risk in part seem to depend on the trust people have in regulatory institutions, referred to as institutional trust. This trust has several determinants, and the main components are the degree of honesty the organizations or governments are thought to have, their degree of competence, their commitment to resolve a risk and the agency's concern for the people they have to care for (Poortinga & Pidgeon, 2003; Renn & Levine, 1991; Kaspersen, 1992). The level of trust influences acceptance or rejection of a risk: If the authorities concerned with a risk are not judged as trustworthy in taking control of that hazard the public will be less accepting of the associated hazards (Bronfman, López Vázquez & Dorantes, 2009). Furthermore a lack of institutional trust evokes feelings of anxiety and worry and the perceived risk is higher (Gutteling & ter Huurne, 2008). Similarly a high degree of institutional trust can prevent negative feelings about a risk. In an experiment people were presented with faked news clips with the same content, but in one condition the trustworthiness of a state agency was higher than in the other. This had significant effects on risk perception and emotions especially fear: The higher the trust, the less fear was experienced and the situation was judged as less risky (Sandman, Miller, Johnson & Weinstein, 1993). This assumption found further scientific support (e.g. Trumbo, 2008).

Hypothesis 2) The more the trust in the authorities is induced the less fear is experienced.

When people are confronted with a certain risk they first assess their personal abilities and competences to take preventive and protective actions. If this assessment results in the feeling of not being able to control the risk personally, they become more interested in the actions government agencies have taken or are going to take (Lion, Meertens & Bot, 2002). The emotion of fear makes people rely on political leaders and government agencies to a much greater extent than normal (Lerner, 2003). When people lack knowledge about a risk, social trust in regulatory authorities governs perceptions of risk and benefit (Siegrist & Cvetkovich, 2000).

Hypothesis 3) In conditions with a low level of perceived control the level of institutional trust is the determining factor for the affective reaction to the risk.

Method

Design and procedure. The present study was based on a 2x2 between-subjects design; the two explanatory factors *perceived personal control* and *institutional trust* with a *high* or a *low* level, respectively, were studied to investigate their influence on negative affect as an indicator for a high risk perception. The 2x2 between subjects design consisted of the conditions *high trust/high control*, *high trust/low control*, *low trust/high control* and *low trust/low control*. The Data for the present study were collected through an online survey in Germany and the Netherlands. In June 2010, 246 people were approached via a German online network for students and received an invitation to take part in the survey. The invitation contained a link which led the participants to the website on which the test was administered. The four different manipulation versions of the survey were randomly assigned to the people by including one of four different links in their invitation. Before starting the questionnaire people were briefly informed about the content of the survey and were assured that the given information would be analyzed and processed entirely anonymously. Content and items of each questionnaire were identical; they only differed in the manipulation condition, which was a short news article on terrorism.

The experimental text appeared on the screen with the information that the present text is an extract of a newspaper article which was published recently and the request to read it carefully and the information that further questions will follow. Based on a pilot study with $n = 15$ participants it could be concluded that more than 80% of the respondents viewed the article as moderately to highly credible. Participants of the pilot study showed no significant differences in demographic backgrounds with the participants of the final experiment. The articles presented to the participants according to their conditions had only minor modifications in terms of wording to assure that only the manipulation effect accounts for possible differences between the conditions. An example of the differences between the articles can be found below.

“Die Bundesregierung sei mit den getroffenen Massnahmen (nicht) in der Lage die Bevoelkerung vor einem eventuellen Anschlag zu schuetzen. Von Seiten der Regierung heisst es, dass es fuer den einzelnen Buerger (nur begrenzte) Möglichkeiten gibt um sich selber vor Anschlaegen zu schuetzen, [...]“. “

Sample and respondents. The response rate of the survey was moderate (54%), with 126 people taking part in the survey. The Data of 13 participants had to be excluded since they skipped questions measuring the manipulation effects. The age range of the 113 respondents who were used for the final analysis was from 17 to 30 years with a mean age of 23 years ($SD=2.01$). 40% of the respondents were male, 60 % female which indicated a slight dominance of female respondents. Statistical analysis showed that the demographical backgrounds of the participants were equally distributed between the conditions. The majority of participants (88.7%) indicated to be living in a major city with between one hundred thousand to one million inhabitants. Furthermore 94.7% of the participants indicated that there were big public buildings like soccer stadia or a central station in their city. This makes it possible to draw the assumption that they are susceptible to an objective vulnerability to terrorist attacks.

Instrument. The online questionnaire was divided into a pre- and a post manipulation part.

Pre-Manipulation. The first section of the questionnaire contained general demographic questions as well as questions in which participants were asked to indicate on a five-point Likert scale reaching from very low (*sehr gering*) to very high (*sehr hoch*) the danger they perceive from different five different hazards. The means of these risk ratings were later on computed to a total score in order to serve as a measure of *risk sensitivity*. After eliminating two of the five original items the scale had a reliability of Cronbach's $\alpha = 0.62$. After finishing the first section the experimental text appeared on the screen, according to the participants' condition.

Post-Manipulation. After reading the text participants were asked to answer questions concerning the level of their *negative affect*, their *perceived control* and the *trust* they have in government agencies. At the end of the survey participants were offered to give feedback and ask questions over the survey in a commentary field.

Affect. As a measure for risk perception the level of negative affect was assessed by asking the participants to indicate the extent to which they were tensed (*angespannt*), worried (*besorgt*), calm (*ruhig*), nervous (*nervös*), confident (*zuversichtlich*), anxious (*verängstigt*), safe (*sicher*) and scared (*erschrocken*). The first part referred to the emotional reaction after reading the extract of the article, the second part referred to the reaction when thinking of the possibility of a terrorist attack in Germany and the third part pointed to the emotional reaction when thinking about the consequences of a terrorist attack. Answers were given on a 5-point Likert-

scale ranging from not at all (überhaupt nicht) to very much (sehr stark). The positive adjectives were included in order to make sure that participants stay focused and therefore to control for biased answers due to lack of attention. The scales were later computed into 4 variables which were labeled Affect1, Affect 2, Affect 3 and Affect Total. Scores were computed separately for the three affect variables and then computed to a total score. Reliability was high for each of the single scales (all above Cronbach's $\alpha = 0.9$) as well as for the total scale (Cronbach's $\alpha = 0.94$).

Self Efficacy or Perceived Control. In order to assess the manipulation effect on perceived self-efficacy three questions were included in which participants were asked to indicate on a 5-point Likert scale ranging from not at all (überhaupt nicht) to very much (sehr stark) how they feel about their capability to protect firstly themselves and secondly their family and friends in case of a terrorist attack. In the third question they were asked to indicate how confident they feel about executing preventive actions in order to protect themselves from becoming victim of a terrorist attack. Answers to all three questions were then computed to an overall score. Reliability of the scale was good at Cronbach's $\alpha = 0.77$.

Institutional Trust. The degree of trust participants felt towards their government agencies was assessed by asking them to indicate on a 5-point Likert scale ranging from *not at all* (überhaupt nicht) to *very much* (sehr stark) firstly how competent they judge the government to protect people like themselves from terrorist attacks, secondly the degree of honesty and openness the government communicates about the risk and finally the trust that the government takes all possible actions to protect themselves from terrorist attacks. From literature it could be concluded that these factors account for a great deal of a person's trust towards government organizations. The answers to the three questions were computed to a total score. Reliability of the scale was good at Cronbach's $\alpha = 0.73$.

Results

Table 1: Means and Standard Deviations of Self-Efficacy, Trust and Affect Total

	N	Self-Efficacy		Trust		Negative Affect Total	
		Mean	SD	Mean	SD	Mean	SD
1 (High Trust/High Control)	26	1,96	1,02	2,46	0,88	2,62	0,79
2 (High Trust/Low Control)	27	1,93	0,98	2,61	0,89	2,42	0,63
3 (Low Trust/High Control)	33	1,82	0,66	2,38	1,06	2,49	0,72
4 (Low Trust/Low Control)	27	1,63	0,69	2,18	0,74	2,67	0,89
Total	113	1,83	0,84	2,41	0,91	2,55	0,76

Table 2: Means and Standard Deviations of Affect1, Affect2 and Affect3

	N	Negative Affect 1		Negative Affect 2		Negative Affect 3	
		Mean	SD	Mean	SD	Mean	SD
1 (High Trust/High Control)	26	2,01	0,62	2,77	1,06	3,10	1,04
2 (High Trust/Low Control)	27	1,87	0,56	2,41	0,84	2,97	0,85
3 (Low Trust/High Control)	33	1,98	0,59	2,59	0,85	2,90	1,02
4 (Low Trust/Low Control)	27	2,32	0,88	2,71	0,94	2,96	1,00
Total	113	2,04	0,68	2,62	0,91	2,98	0,97

Univariate Analyses of Variance (ANOVA) were executed in order to examine the manipulation effect.

Analyses revealed that there were no significant changes in *self-efficacy* which can be attributed to the manipulation condition of *high* or *low control* ($F(1,111) = 0.427$, $p = .515$ n.s.). For institutional *trust* no significant relation between the manipulation condition of *high* or *low trust* and participants' total score on the scale measuring the degree of trust could be established ($F(1,111) = 2.086$, $p = .152$, n.s.). Given the fact that the *high* or *low control* condition did not show to exert any influence neither on the total self-efficacy score nor did the *high* or *low trust* condition on the experienced degree of trust it has to be considered that

the manipulation was not effective. When analyzing the effect of pre-existing attitude towards the risk of terrorism and the affective reaction significant effects could be found. ANOVA revealed that negative affect in construct one and two as well as the total negative affective reaction was significantly influenced by the preexisting judgment of the degree of risk of terrorism (ranging from $F(1,108) = 4.79, p = .001$ to $F(1,108) = 3.02, p = .02$). Only negative emotions about the consequences of a possible terrorist attack were not influenced by pre-existing attitudes ($F(1,108) = 2.21, p = .72, n.s.$). This leads to the assumption that preexisting opinions and judgments about the risk have a strong effect on the risk judgment after reading the article. The rating of the perceived risk of terrorism correlated with two other risk ratings used in the pre-experimental part of the questionnaire at a significance level of $\alpha = 0.01$ ($r = 0.33$; $r = 0.34$; $r = 0.39$). The total score of these answers was computed and labeled as the concept of *risk sensitivity*. ANOVA with *risk sensitivity* as the dependent variable and *condition* as fixed factor revealed that scores on the risk sensitivity scale were equally distributed over the four conditions. ($F(3,109) = 1.491, p = .22, n.s.$).

Testing the hypotheses. To test the hypotheses Multivariate Analysis of Variance (MANOVA) was used at a significance level of $\alpha = 0.05$.

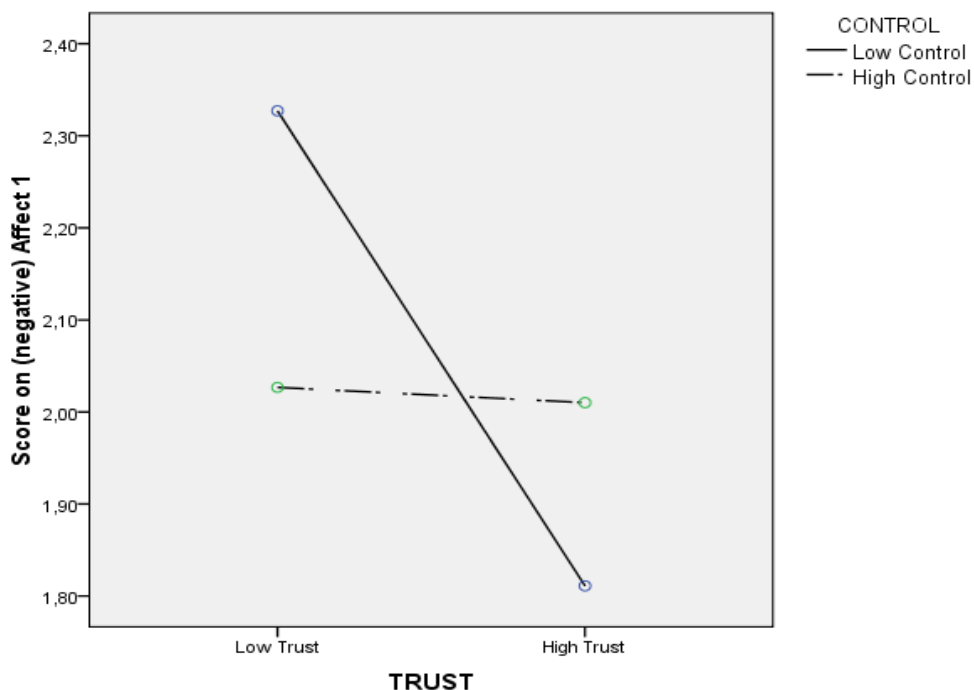
Hypothesis 1. The first hypothesis predicted that in conditions in which high perceived personal control is induced the negative affective reaction to terrorism as a risk would diminish. Analyses failed to reveal a significant difference between the *high control* and *low control* conditions on negative affect in total ($F(1,108) = 0.378, p = .54, n.s.$) as well as for all three subscales ($F(1,108) = 0.168, p = .68, n.s.$; $F(1,108) = 1.386, p = .24, n.s.$; $F(1,108) = 0.362, p = .55, n.s.$). Significant negative correlations at an $\alpha = 0.05$ level between the total score on the self-efficacy scale and the affect variables exist (ranging from $r = -0.2$ to $r = -0.24$), which means that high scores of self-efficacy lead to a diminished negative affective reaction to the risk.

Hypothesis 2. The second hypothesis assumed that the degree of trust in governments which is induced has an alleviating effect on the negative affective response to the risk of terrorism. This hypothesis could only partially be confirmed; Multivariate Analysis of Variance with *risk sensitivity* as a covariate showed that the *high* or *low trust* condition did not have a significant effect on the total sum used to measure negative effect ($F(1,108) = 0.824, p = .36, n.s.$) neither on the second ($F(1,108) = 0.746, p = .39, n.s.$) nor the third construct ($F(1,108) = 0.028, p = .87, n.s.$). A significant effect of the *high trust* /*low trust* condition could be identified for the first construct used to measure negative affect, which measured the negative

affect participants experienced after reading the article ($F(1,108) = 4.608, p=.034$). Results show that the manipulation of the degree of trust had a significant effect on this first construct which leads to higher ratings of negative affect in the *low trust* conditions than in the *high trust* conditions. All correlations of the total trust and negative affect were significant at a significance level of $\alpha=.01$ which indicates that the trust people perceive indeed influences their affective reactions. As correlations were negative (ranging from $r=-0.32$ to $r=-0.38$) those correlations support the hypothesis that high ratings of trust have a decreasing effect on risk perception.

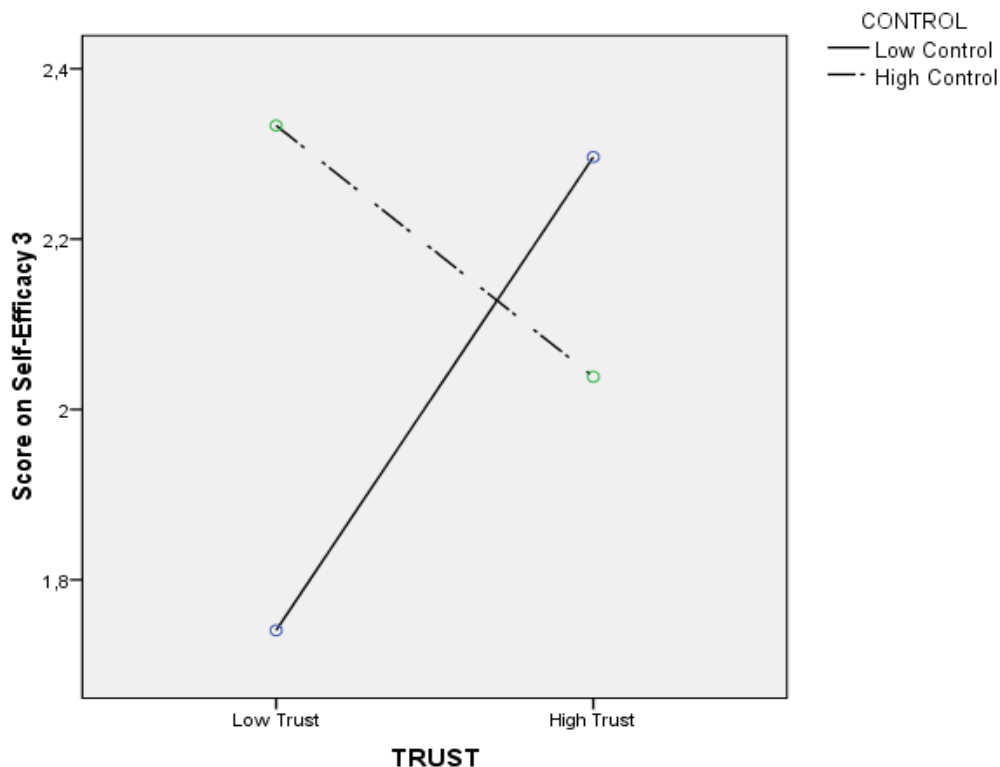
Hypothesis 3. The third hypothesis stated that in conditions in which *perceived control* was low the *trust* in authorities would account for the changes in *negative affect*. A significant interaction effect for *trust* and *control* on negative affect could be found for the first construct of negative affect ($F(1,108)=4.132, p=.045$) which referred to the immediate reaction after reading the article. In situations where perceived control is high, trust does not exert major influence on the risk rating. ($t=-0.179, df=57, p=.86, n.s.$) In contrast, in conditions where control is low trust is the factor that accounts for the changes in the risk ratings ($t=2.248, df=52, p=.03$).

Figure 1 shows the interaction effect of Control and Trust. In conditions in which perceived control is high, the degree of trust shows to have less influence on the affective reaction to the risk. In conditions with a low degree of control, the degree of trust determines the strength of the negative affective reaction to the risk.



Further testing. For testing the hypotheses no difference based on gender of the participants was made. Taking gender into account it becomes evident that gender exerts a significant influence on the negative affective reaction to risk (ranging from $F(1,113)=15.046$, $p=.00$ to $F(1,113) = 4.836$, $p=.03$) and risk sensitivity $F(1,113)=11.11$, $p=.01$). Men exhibited higher ratings of risk sensitivity than women in the beginning, which means that they have a tendency to judge the risks as more dangerous than women. Notwithstanding women showed stronger negative affective reaction after reading the articles. Univariate Analysis of Variance revealed that there is a significant interaction effect of trust and self-efficacy on the third variable used to established the Self-Efficacy scale ($F(1,109)=4.13$, $p=.045$). This variable measured the participants' confidence of taking preventive actions to protect themselves from becoming victim of a terrorist attack. Apparently it was possible to influence this risk coping self-efficacy of participants by a combination of *high trust* and *low control* or *high control* and *low trust*.

Figure 2 shows the interaction effect of Trust and Control on the third item of the Self-Efficacy Scale. The *Low Trust/Low Control* condition leads to the least score on that item. Highest Scores on this item assessing the degree of confidence to execute risk mitigating actions were obtained in the *High Trust/Low Control* and the *Low Trust/ High Control* condition.



Discussion

The goal of the present study was to examine the effect self-efficacy and institutional trust have on negative affect after reading newspaper articles on terrorism. It was assumed that self-efficacy and institutional trust both have a decreasing effect on fear of terrorism caused by these articles. With respect to the significant negative correlations between self-efficacy and negative effect as well as between trust and negative affect it can be concluded that indeed a high degree of control, which is connected to high self-efficacy, and a high degree of trust in authorities diminishes the experience of the emotion of fear. Furthermore the combined effect of self-efficacy and institutional trust was investigated. It was expected that in conditions in which perceived personal control and therefore self-efficacy is low, the degree of trust in government institutions or higher authorities would be the determining factor for the degree of negative affect experienced by the participants.

The hypothesis that in conditions which were supposed to enhance perceived control less fear was experienced than in those aiming at triggering a feeling of helplessness had to be rejected. This implies that the manipulation was not effective, which can possibly be caused by the features terrorism has for itself: Terrorism is used as a psychological weapon aiming at inducing intense fear, which is accomplished by its uncontrollability. Promoting feelings of control about a risk as terrorism which is perceived as rather uncontrollable might be more difficult than inducing feelings of control over risks as traffic accidents. It is plausible that in the case of terrorism the campaigns have to be equipped with different features than campaigns concerning the risk of traffic accidents.

In contrast to self-efficacy it has been demonstrated feasible to reduce negative affect in conditions with high trust in authorities. Even though participants in high trust conditions did not experience more trust in their authorities, they reported less fear directly after reading the article than participants in conditions decreasing trust. This effect disappeared when participants were to indicate their emotions towards a possible terrorist attack and its consequences.

Examining the relationship between perceived control and institutional trust it became evident that, according to the hypothesis, there is a significant interaction effect on the affective reaction. In the high trust conditions the experienced fear was less than in the low trust conditions. As for institutional trust this effect was only significant for the affective reactions with correspondence to the article. This phenomenon could possibly be explained by chance. Another explanation could be that this reaction shows because this variable is the only one

which refers to the feelings directly after reading the article. No further processing of the information is necessary in order to answer this question, it solely refers to the feelings the article evoked. For the following questions about the feelings concerning a possible terrorist attack in Germany or its consequences it is necessary to process the information given in the article. In this case it is possible that the affect judgment is influenced by pre-existing attitudes and therefore the information in the article exerts a minor influence.

Furthermore two combinations of trust and self-efficacy led to participants' enhanced perception of his capabilities of taking preventive actions to protect themselves from terrorist attack. Low personal control and high trust combined to a higher rating as well as the combination of high control and low trust. Possibly this can be explained by hypothesizing that in the first case the ability of protection is projected on the government institutions due to the lack of personal control and therefore only limited possibilities for taking action. As the government institutions are seen in a favorable light in this condition, this could evoke a feeling of safety when relying on these institutions and their protection recommendations. On the other hand low trust might lead to the feeling of being forced to take actions independently as there is no higher institution able to provide protection. A high feeling of control might encourage them and support them in their belief of being capable of taking these actions.

As already mentioned, pre-existing attitudes about risks take a major role in accounting for a person's risk perception. This finding of earlier research finds support in this experiment. Analysis revealed that previously existing judgments of terrorism as a risk mediate the emotional reaction to that risk. The fact that pre-existing attitudes and judgments affect risk judgments can possibly explain the ineffectiveness of the manipulation. If a risk has been judged as threatening or not threatening before, this attitude might exert a greater influence on the emotional reaction than the manipulation. This is especially relevant for issues of low involvement combined with high trust in authorities. In this case people tend to rely on pre-existing attitudes instead of processing the information (Petty & Cacioppo, 1981). Germany has never been directly affected by a terrorist attack nor have there been terrorist warnings in the last years. People might feel less vulnerable and therefore less involved than in other countries, as the United States which makes them rely more on pre-existing attitudes.

A finding that stands in contrast to previously executed studies is the finding that men initially exhibited higher risk sensitivity than women. Most research confirms the opposite distribution, namely men generally reporting lower risk estimates (Slovic, 1999). Although risk sensitivity of men was higher than in women, women exhibited stronger emotional

reactions to the article. This finding can be explained by the greater intensity of female emotion (Larsen & Diener, 1987) and women's higher levels of negative affect in comparison to men (Gove & Tudor, 1973).

Implications for risk communication and future research. Corresponding to the findings concerning the manipulation condition, it seems that the degree of institutional trust is more determining for risk perceptions towards terrorism than the degree of perceived control and the resulting degree of self-efficacy. This observation supports the assumption that inducing trust in authorities appears to be a more effective way of reducing fear of terrorism than intending to induce feelings of personal control. It is necessary to further assess the directions and the reasons of the interaction between institutional trust and the amount of perceived control more broadly.

Moreover, further research is necessary to determine the features that are important in order to successfully induce feelings of control about the risk of terrorism or to entirely preclude the possibility of enhancing perceived control about terrorism.

References

1. Bandura, A. & Adams, N.E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research*, 1 , 287-308.
2. Bandura, A., Adams, N.E. & Reese, L. (1982). Micoranalysis of Action and fear Arousal as a Function of Differential Levels of Perceived Self-Efficacy. *Journal of Personality and Social Psychology*, 43(1), 5-21
3. Bandura, A. & Ozer, E.M. (1990). Mechanisms governing empowerment Effects: A Self-Efficacy Analysis. *Journal of Personality and Social Psychology*, 58(3), 472-486
4. Bongar, B., Brown, L. M., Beutler, L. E., Breckenridge, J. M., Zimbardo, P. G. (Eds.). (2007). *Psychology of terrorism*. Oxford: Oxford University Press.
5. Bronfman, N.C., López Vázquez, E., Dorantes, G. (2009). An empirical study for the direct and indirect links between trust in regulatory institutions and acceptability of hazards. *Safety Science*, 47, 686-692
6. European Comission, Standard Eurobarometer (2001).
<http://ec.europa.eu/public-opinion/standard-en.htm>
7. Fischhoff, B., Gonzalez, R.M., Small, D.A., Lerner, J.S. (2005). Evolving judgments of terror risks: Foresight, hindsight and emotion. *Journal of experimental Psychology: Applied*, 11, 124-139
8. German Marshall Fund of the United States & The Chicago Council on Foreign Relations (2002). *Europeans see the world as Americans do, but critical of U.S. Foreign Policy*. Retrieved June 15, 2009 from
http://www.worldviews.org/key_findings/transatlantic_report.htm
9. Giles, D. C., Naylor, G. C. Z., & Sutton, J. (2000). *Psychological correlates of parasocial interaction: Attachment style, empathy and theory of mind*. Oral presentation, BSP Social Section Annual Conference, Nottingham Trent University.
10. Gove, W. R., & Tudor, J. F. (1973). Adult sex roles and mental illness. *American Journal of Sociology*, 78, 812-835
11. Jaeger, C., Renn, O., Rosa, E.A., Webler, T. (2001). *Risk, Uncertainty and Rational Action*. Earthscan, London.
12. Johnson, B.B. & Covello V.T. (1987). Agenda-setting, group conflict and the social construction of risk. In B.B. Johnson and V.T. Covello(eds) *The Social and Cultural Construction of Risk*, 179-181. Dordrecht : D. Reidel Publishing.

13. Kasperson, R.E., Golding, D. & Tuler, S. (1992). Social distrust as a factor in siting hazardous facilities and communicating risks. *Journal of Social Issues*, 48 (4), 161–87.
14. Larsen, R. J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. *Journal of Research in Personality*, 21, 1-39.
15. Lemyre, L., Turner, M.C., Lee, J.E.C. & Krewski, D. (2006). Public Perception of Terrorism Threats and Related Information Sources in Canada: Implications for the Management of Terrorism Risks, *Journal of Risk Research*, 9(7), 755-774.
16. Lerner, J. S., Gonzalez, R. M., Small, D. A., Fischhoff, B. (2003). Effects of fear and anger on perceived risks of terrorism: A national field experiment. *Psychological Science*, 14 (2), 144-150.
17. Lerner, S. & Keltner, D. (2001). Fear, Anger and Risk. *Journal of Personality and Social Psychology*, 81(1), 146-159.
18. Lion, R., Meertens, R.M. & Bot, I. (2002). Priorities in information desire about unknown risks. *Risk Analysis*, 22(4), 765–776.
19. Loewenstein, G.F., Hsee, C.K., Weber, E.U., Welch, N. (2001). Risk as feelings. *Psychological Bulletin*, 127 (2), 267-286
20. Petty, R, & Cacioppo, J. (1981). Attitudes and persuasion: Classic and Contemporary Approaches. Dubuque, IA: Wm. C. Brown Company.
21. Poortinga, W. & Pigeon, N. F. (2003). Exploring the dimensionality of trust in risk regulation. *Risk Analysis*, 23 (5), 961-972.
22. Renn, O. (2005). White paper on risk governance: Towards a harmonized framework. IRGC.
23. Renn, O., and D. Levine. 1991. Credibility and trust in risk communication. In Communicating risks to the public, ed. R.E. Kasperson and P.J.M. Stallen, 175–218. Dordrecht: Kluwer Academic Publishers.
24. Rimal, R. N. (2001). Perceived Risk and Self-Efficacy as motivators: Understanding Individuals' Long-term use of health Information. *Journal of Communication*, 51(4), 633-654.
25. Sandman, P.M., Miller, P.M., Johnson, B.B. & Weinstein, N.D. (1993) Agency Communication, community outrage, and perception of risk: three simulation experiments. *Risk Analysis*, 13, 585-598.
26. Siegrist, M., Cvetkovich, G. & Roth, C. (2000). Salient value similarity, social trust, and risk/benefit perception. *Risk Analysis*, 20 (3), 353-362.
27. Siegrist, M. & Cvetkovich, G. (2000). Perception of hazards: The role of social trust and knowledge. *Risk Analysis*, 20(5), 713-719.

28. Silke, A. (2001). Terrorism. The Psychologist, about Affect, Reason, Risk, and Rationality. *Risk Analysis*, 24 (2), 311-322.
29. Singer, E. & Endreny, P. (1987). Reporting hazards: Their benefits and costs. *Journal of Communication*, 37, 10-26.
30. Slovic, P. (1999). Trust, emotion, sex, politics, and science: Surveying the risk-assessment battlefield. *Risk analysis*, 19, 689-701.
31. Slovic, P. & Combs, B. (1979). Newspaper coverage of Causes of Death. *Journalism Quarterly*, 56, 837-843, 849.
32. Slovic, P., Fischhoff, B. & Liechtenstein, S. (1982). Facts versus Fears: Understanding perceived risk. In D. Hahnemann, P.Slovic and A.Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases*, 463-492). Cambridge: Cambridge University Press.
33. Slovic, P., Finucane, M., Peters, E. & MacGregor, D. G. (2004). Risk as Analysis and Risk as Feelings: Some Thoughts Koné, D. and Mullet, E. (1994) Societal risk perception and media coverage, *Risk Analysis* 14, 21–24.
34. Smith, C.A. & Ellsworth, P.C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813-838.
35. Survey by European Commission (2008). Results retrieved June 14, 2009, from <http://earthlingangst.blogspot.com/2008/09/europeans-fear-climate-change-more-than.html>
36. ter Huurne, E.F.J. & Gutteling, J.M. (2008). Information needs and risk perception as predictors of risk information seeking. *Journal of Risk Research*, 11(7), 847–62.
37. Trumbo, C.W., McComas, K.A. (2008). Institutional Trust, information processing and perception of environmental cancer risk. *International Journal of Global Environmental Issues*, 8 (1-2), 61-76.
38. Vallone, R. P., Ross, L. & Lepper, M. R. (1985) The hostile media phenomenon: biased perceptions and perceptions of media bias in coverage of the Beirut massacre, *Journal of Personality and Social Psychology*, 49, 577–85.
39. Wahlberg, A.F. & Sjöberg, L. (2000). Risk perception and the media. *Journal of Risk Research* 3(1), 31-50.
40. Weinstein, N. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, 806-820.
41. Wiegman, O. & Gutteling, J.M. (1995). Risk appraisal and risk communication: Some empirical data from the Netherlands reviewed. *Basic and Applied Social Psychology*, 16(1-2), 227- 249.

42. Wilkinson, P. (1997). The media and Terrorism: A reassessment. *Terrorism and political violence*, 9, 51-64.
43. Zajonc, R.B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151-175.

APPENDIX

1) Questionnaire

Vielen Dank, dass du dich bereit erklärt hast, einen Teil zu meiner Bachelorarbeit beizutragen.

Die Dauer der Umfrage beträgt ca 5-10 Minuten und deine Angaben werden natürlich anonym verarbeitet.

Ich möchte mit der Befragung Meinungen zu aktuellen Themen in der Gesellschaft untersuchen. Um aussagekräftige Schlüsse ziehen zu können, ist es wichtig dass du alle Fragen gewissenhaft beantwortest.

Wenn du jetzt auf "Weiter" klickst, kannst du mit dem Fragebogen beginnen.

Zunächst benötige ich einige allgemeine Angaben von dir.

1. Was ist dein Geschlecht?

- ☐ Männlich
- ☐ Weiblich

2. Wie alt bist du?

3. Welchen beruflichen Status hast du?

- ☐ Student
- ☐ Auszubildender
- ☐ Schüler
- ☐ Berufstätig
- ☐ Arbeitssuchend
- ☐ Sonstiges

4. Wieviele Einwohner hat die Stadt in der du im Moment wohnst?

- ☐ Unter 100.000
- ☐ 100.000 bis 500.000
- ☐ 500.000 bis 1 Million
- ☐ Über 1 Million

5. Gibt es große öffentliche Gebäude oder Orte (Stadien, Konzerthallen, Hauptbahnhof) in deiner Stadt?

☐

Ja

☐

Nein

6. Wie hoch schätzt du das Risiko von

	Sehr hoch	Hoch	Mittel	Gering	Sehr gering
Genmanipulierten Lebensmitteln	☐	☐	☐	☐	☐
Verkehrsunfällen	☐	☐	☐	☐	☐
Klimaerwärmung	☐	☐	☐	☐	☐
Terrorismus	☐	☐	☐	☐	☐
Kernenergie	☐	☐	☐	☐	☐

Bei dem folgenden Text handelt es sich um einen Auszug aus einem aktuellen Zeitungsartikel zu einem der gerade genannten Themen.

Bitte lies dir den Text gut durch. Danach folgen noch einige Fragen.

Berlin.

Wie der Bundesnachrichtendienst (BND) gestern vermeldete ist ein Video mit der Androhung von Terroranschlägen auf Deutschland erschienen. Urheber des Videos soll die Untergrundorganisation Ansar al Islam (Helfer des Islam) sein. Die Drohung wird mit dem Einsatz deutscher Truppen in Afghanistan in Verbindung gebracht. Es handelt sich hierbei um die zweite Drohung innerhalb des letzten Monats. Die Echtheit des Videos sei geprüft, man nehme die Drohung ernst und habe bereits Vorsichtsmaßnahmen eingeleitet, so ein Regierungssprecher. Konkrete Hinweise auf mögliche Ziele eines Anschlages gäbe es aber nicht. [...] Ein Sprecher des Bundesnachrichtendienstes zeigt sich wenig zuversichtlich: Die Bundesregierung sei mit den getroffenen Massnahmen nicht in der Lage die Bevölkerung vor einem eventuellen Anschlag zu schützen. Von Seiten der Regierung heisst es, dass es für den einzelnen Bürger nur begrenzte Möglichkeiten gibt um sich selber vor Anschlängen zu schützen, so wie das Meiden von öffentlichen Grossveranstaltungen und den aufmerksamen Umgang mit allein stehendem Gepäck an Flughäfen und Bahnhöfen.

1. Nachdem ich den Beitrag gelesen habe fühle ich mich...

	Überhaupt nicht	Ein bisschen	Einigermaßen	Ziemlich	Sehr stark
Angespannt	☐	☐	☐	☐	☐
Besorgt	☐	☐	☐	☐	☐
Ruhig	☐	☐	☐	☐	☐
Nervös	☐	☐	☐	☐	☐
Sicher	☐	☐	☐	☐	☐
Verängstigt	☐	☐	☐	☐	☐
Zuversichtlich	☐	☐	☐	☐	☐
Erschrocken	☐	☐	☐	☐	☐

2. Wenn ich in diesem Moment an die Möglichkeit eines Terroranschlags in Deutschland denke fühle ich mich...

	Überhaupt nicht	Ein bisschen	Einigermaßen	Ziemlich	Sehr stark
Angespannt	☐	☐	☐	☐	☐
Besorgt	☐	☐	☐	☐	☐
Ruhig	☐	☐	☐	☐	☐
Nervös	☐	☐	☐	☐	☐
Sicher	☐	☐	☐	☐	☐
Verängstigt	☐	☐	☐	☐	☐
Zuversichtlich	☐	☐	☐	☐	☐
Erschrocken	☐	☐	☐	☐	☐

3. Wenn ich in diesem Moment an die Konsequenzen eines Terroranschlags in Deutschland denke fühle ich mich...

	Überhaupt nicht	Ein bisschen	Einigermaßen	Ziemlich	Sehr stark
Angespannt	☐	☐	☐	☐	☐
Besorgt	☐	☐	☐	☐	☐
Ruhig	☐	☐	☐	☐	☐
Nervös	☐	☐	☐	☐	☐
Sicher	☐	☐	☐	☐	☐
Verängstigt	☐	☐	☐	☐	☐
Zuversichtlich	☐	☐	☐	☐	☐
Erschrocken	☐	☐	☐	☐	☐

1. Bitte gib an, wie sehr die folgenden Aussagen auf dich zutreffen.

	Überhaupt nicht	Ein bisschen	Einigermaßen	Ziemlich	Sehr stark
Ich fühle mich in der Lage, mich im Falle eines Terrorangriffs zu schützen.	☐	☐	☐	☐	☐
Ich fühle mich in der Lage, meine Familie und Freunde im Falle eines Terrorangriffs zu schützen.	☐	☐	☐	☐	☐
Ich sehe mich in der Lage, Vorsichtsmassnahmen zu ergreifen, so dass ich nicht direkt von einem Terroranschlag getroffen werde.	☐	☐	☐	☐	☐

2. Hier noch die letzten drei Fragen. Bitte gib an wie sehr du den folgenden Aussagen zustimmst.

	Überhaupt nicht	Ein bisschen	Einigermaßen	Ziemlich	Sehr stark
Die Bundesregierung ist in der Lage Menschen wie mich vor Terrorangriffen zu schützen.	☐	☐	☐	☐	☐
Die Bundesregierung redet offen über das Risiko eines Terroranschlags in Deutschland.	☐	☐	☐	☐	☐
Wenn die Bundesregierung sagt, dass sie alles tut um mich vor einem Terroranschlag zu beschützen, dann glaube ich das.	☐	☐	☐	☐	☐

Vielen Dank, dass du bei meiner Untersuchung mitgearbeitet hast. Wenn du noch Fragen hast oder wissen möchtest, was dabei rausgekommen ist, dann kannst du in dem unterstehenden Kästchen deine Email-Adresse angeben. Solltest du noch Anmerkungen haben, dann kannst du (auch gerne anonym) etwas in das Kommentarkästchen schreiben.

1. Email- Adresse

2. Kommentare zum Fragebogen

-END OF QUESTIONNAIRE-

2) Experimental texts

Differences between the versions are underlined.

Version A (High Trust/High Control)

Berlin.

Wie der Bundesnachrichtendienst (BND) gestern vermeldete ist ein Video mit der Androhung von Terroranschlägen auf Deutschland erschienen. Urheber des Videos soll die Untergrundorganisation Ansar al Islam (Helfer des Islam) sein. Die Drohung wird mit dem Einsatz deutscher Truppen in Afghanistan in Verbindung gebracht. Es handelt sich hierbei um die zweite Drohung innerhalb des letzten Monats. Die Echtheit des Videos sei geprüft, man nehme die Drohung ernst und habe bereits Vorsichtsmaßnahmen eingeleitet, so ein Regierungssprecher. Konkrete Hinweise auf mögliche Ziele eines Anschlages gäbe es aber nicht. [...] Ein Sprecher des Bundesnachrichtendienstes zeigt sich wenig zuversichtlich: Die Bundesregierung sei mit den getroffenen Maßnahmen in der Lage die Bevölkerung vor einem eventuellen Anschlag zu schützen. Von Seiten der Regierung heisst es, dass es für den einzelnen Bürger Möglichkeiten gibt um sich selber vor Anschlägen zu schützen, so wie das Meiden von öffentlichen Grossveranstaltungen und den aufmerksamen Umgang mit allein stehendem Gepäck an Flughäfen und Bahnhöfen.

Version B (High Trust/Low Control)

Berlin.

Wie der Bundesnachrichtendienst (BND) gestern vermeldete ist ein Video mit der Androhung von Terroranschlägen auf Deutschland erschienen. Urheber des Videos soll die Untergrundorganisation Ansar al Islam (Helfer des Islam) sein. Die Drohung wird mit dem Einsatz deutscher Truppen in Afghanistan in Verbindung gebracht. Es handelt sich hierbei um die zweite Drohung innerhalb des letzten Monats. Die Echtheit des Videos sei geprüft, man nehme die Drohung ernst und habe bereits Vorsichtsmaßnahmen eingeleitet, so ein Regierungssprecher. Konkrete Hinweise auf mögliche Ziele eines Anschlages gäbe es aber nicht. [...] Ein Sprecher des Bundesnachrichtendienstes zeigt sich wenig zuversichtlich: Die Bundesregierung sei mit den getroffenen Maßnahmen in der Lage die Bevölkerung vor einem eventuellen Anschlag zu schützen. Von Seiten der Regierung heisst es, dass es für den einzelnen Bürger nur begrenzte Möglichkeiten gibt um sich selber vor Anschlägen zu schützen, so wie das Meiden von öffentlichen Grossveranstaltungen und den aufmerksamen Umgang mit allein stehendem Gepäck an Flughäfen und Bahnhöfen.

Version C (Low Trust/High Control)

Berlin.

Wie der Bundesnachrichtendienst (BND) gestern vermeldete ist ein Video mit der Androhung von Terroranschlägen auf Deutschland erschienen. Urheber des Videos soll die Untergrundorganisation Ansar al Islam (Helfer des Islam) sein. Die Drohung wird mit dem Einsatz deutscher Truppen in Afghanistan in Verbindung gebracht. Es handelt sich hierbei um die zweite Drohung innerhalb des letzten Monats. Die Echtheit des Videos sei geprüft, man nehme die Drohung ernst und habe bereits Vorsichtsmaßnahmen eingeleitet, so ein Regierungssprecher. Konkrete Hinweise auf mögliche Ziele eines Anschlages gäbe es aber nicht. [...] Ein Sprecher des Bundesnachrichtendienstes zeigt sich wenig zuversichtlich: Die Bundesregierung sei mit den getroffenen Massnahmen **nicht** in der Lage die Bevölkerung vor einem eventuellen Anschlag zu schützen. Von Seiten der Regierung heisst es, dass es für den einzelnen Bürger Möglichkeiten gibt um sich selber vor Anschlägen zu schützen, so wie das Meiden von öffentlichen Grossveranstaltungen und den aufmerksamen Umgang mit allein stehendem Gepäck an Flughäfen und Bahnhöfen.

Version D (Low Trust/Low Control)

Berlin.

Wie der Bundesnachrichtendienst (BND) gestern vermeldete ist ein Video mit der Androhung von Terroranschlägen auf Deutschland erschienen. Urheber des Videos soll die Untergrundorganisation Ansar al Islam (Helfer des Islam) sein. Die Drohung wird mit dem Einsatz deutscher Truppen in Afghanistan in Verbindung gebracht. Es handelt sich hierbei um die zweite Drohung innerhalb des letzten Monats. Die Echtheit des Videos sei geprüft, man nehme die Drohung ernst und habe bereits Vorsichtsmaßnahmen eingeleitet, so ein Regierungssprecher. Konkrete Hinweise auf mögliche Ziele eines Anschlages gäbe es aber nicht. [...] Ein Sprecher des Bundesnachrichtendienstes zeigt sich wenig zuversichtlich: Die Bundesregierung sei mit den getroffenen Massnahmen **nicht** in der Lage die Bevölkerung vor einem eventuellen Anschlag zu schützen. Von Seiten der Regierung heisst es, dass es für den einzelnen Bürger **nur begrenzte** Möglichkeiten gibt um sich selber vor Anschlägen zu schützen, so wie das Meiden von öffentlichen Grossveranstaltungen und den aufmerksamen Umgang mit allein stehendem Gepäck an Flughäfen und Bahnhöfen.