

# Induction of embitterment by information about historical relations between neighboring countries – an experimental study

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## Abstract

Embitterment is an emotion that can be triggered on an individual and a societal level. It is a reactive emotion, comparable to fear, as a result of a negative life event characterized by grievance and experience of injustice. Often core basic beliefs and values are hurt, and negative evaluations arise when thinking about the event or conditions. Entire populations can also be seized with embitterment as a result of experiences of injustice, belittlement and resentment, by other groups or entire countries. Examples can be seen after past episodes of war, conflict and the shattering of identity, resources and life values.

Against this background, the question arises whether and to what extent embitterment can be induced by negatively toned information of historical events.

The experimental study conducted here investigates whether a short negatively colored historical report concerning the Franco-German or the German-German relationship is able to induce embitterment.

Participants ( $N_1=206$ ,  $N_2=257$ ) were randomly assigned to receive a neutral (control group) or a negatively framed (experimental group) information text on the countries' relationship in past decades. Levels of embitterment reaction were assessed using a version of the PTED scale adjusted to the historical relationship. Increased levels of embitterment could not be evoked by the short negatively colored text. However, preconceived attitudes about the neighboring country (Is the country a good or bad partner?) and self-transcendence contributed significantly to variance explanation of the embitterment response. Age, gender, education level, place of residence, or hometown did not contribute to embitterment explanation.

The data show that social and political experiences and attitudes may be associated with embitterment, but are not modifiable by short-term information.

**Key words:** embitterment, society, values, emotion induction

## 1 Embitterment

Embitterment is a feeling that most people have experienced at least slightly at one time or another (Linden & Maercker, 2011; Linden & Rotter, 2011). Even the Bible begins with the story of Cain and Abel with the description of a bitter reaction. In the general population, about one in two people can remember an event in the recent past that triggered embitterment in them (Linden, Baumann, Lieberei & Rotter, 2009). For a quarter of people, the feeling of embitterment may well be experienced to a greater extent, and about three to five percent suffer from severe and life-disrupting states of embitterment (Linden et al., 2009; Muschalla et al., 2020; Kuhn et al., 2018; Znoj et al., 2016; Linden et al., 2009). During social upheaval, unrest, or crisis, embitterment may increase in the general population, rates of 16–45% have been found internationally (Linden, 2020; Muschalla et al., 2021).

Embitterment is associated with feelings of helplessness, anger, injustice, insult, self-recrimination, and when intense, revenge or aggression (Linden, 2003, 2013; Linden et al., 2009). People can usually name a cause for their embitterment, as embitterment is associated with negative, stressful life events (Linden, 2003; 2017; Znoj, Abegglen, Buchkremer & Linden, 2016). Their triggers evoke a strong sense of injustice or grievance in the affected person, although they are not always perceived as excessive from the outside (Linden, 2003). The violation of personally important and central values by the event is problematic (Linden, 2017; Znoj, 2011). In itself, embitterment represents a normal reaction to certain situations (Znoj, 2011).

With the introduction of the concept of Post-traumatic Embitterment Disorder, there is a growing body of research on this topic (Chae, Huh & Choi, 2018; Dunn & Sensky, 2018; Hasanoğlu, 2008; Linden, 2003, 2017; Linden, Baumann, Rotter & Schippan, 2008).

At the societal level, embitterment can be found in political tensions, for example, as a result of the Northern Ireland conflict (Cairns & Hewstone, 2011) or as a result of the reunification of East and West Germany (Linden, 2017; Linden, Schippan, Baumann & Spielberg, 2004; Trobisch-Lutge, 2010). In the wake of such conflicts, a long-lasting sense of injustice sets in for large segments of society (Cairns & Hewstone, 2011; Trobisch-Lutge, 2010).

Thus, embitterment seems to be caused by injustice and degradation experienced by both individuals and society (Pirhačova, 1997; Shin et al., 2012).

The present study aims to investigate whether it is possible to experimentally induce such socio-political feelings of embitterment through targeted information. In terms of appraisal theory, descriptions of such historical events with personal reference can evoke emotions (Frijda, 2009; Lazarus & Smith, 1988). To this end, the Franco-German

and East-West German relations were selected as socially and historically significant examples because they are emotionally charged and can evoke feelings of injustice (Holtmann, 2020; Montada, 1995; Schmitt, Maes & Schmal, 1999). It shall be investigated whether a one-sided negatively formulated historical description about the relationship with the neighboring country can induce a change in the experience of embitterment. The induction of an embitterment affect seems more likely with higher age of the subjects, as hostile events in the German-German or in the Franco-German history took place decades ago.

Regarding the correlations of values and people's susceptibility to embitterment, there is not much empirical evidence yet. Muschalla and von Kenne (2020) could not identify any particular values that are strongly related to embitterment. This is consistent with the assumption that values are highly individual and a violation of the same values can lead to different emotions and reactions in different people (Ekman, 2004; Rohan, 2000; Scherer, 2004; Schwartz, 1992, 1994, 2012).

With respect to whether individuals belong to East or West Germany, or have attitudes toward the neighboring country, it must be taken into account that increased contact with the other country may be accompanied by a lower level of prejudice or hostility, or enemy images (Allport, 1954; Kessler & Fritsche, 2018; Pettigrew & Tropp, 2006; Al Ramiah & Hewstone, 2013). In contrast, negative preconceptions about the neighboring country are thought to be more conducive to an embitterment response.

## 2 Method

We conducted two studies in parallel in 2020 via online experiments. The embitterment questionnaire was preceded by a short historical memory and appraisal provocation describing either neutrally or slightly negatively the relationship between Germany and France since World War I or the relationship of East and West Germany after reunification in 1990. The negatively described history was intended to induce embitterment and was presented to the experimental group. The control group received the neutral history.

Participants first provided their sociodemographic data in the online questionnaire, where they grew up and currently live. They then indicated the extent to which they agreed with various life values on the *short scale of S.H. Schwartz's Values Questionnaire* (Boer, 2013; Schwartz 1992, 1994). Here, participants could rate how important the values of power, achievement, hedonism, stimulation, self-determination, security, conformity, universalism, tradition, and sociality were to them on a six-point Likert scale ranging from "not at all important" to "very important." These values are as-

	Negative	Neutral
<b>Study 1: Germany-France</b>	We are interested in your attitude towards France. As you know, 100 years ago there was the end of the First World. It is worth to remember the many who died. However, still a lot of hostilities have happened, such as the one-sided apportionment of blame to Germany, the separation of Alsace and Lorraine from Germany, the extensive reparation payments, and the occupation of German territories by France. The First World War was within of a series of hostilities between Germany and France, such as the invasion of Napoleon and the Napoleonic troops in 1814 and the war of 1870, or the Second World War in 1939. Even today, there are always flare-ups of political differences.	We are interested in your attitude towards France. It is now 57 years since Adenauer and de Gaulle signed the Franco-German friendship treaty. Since then, there has been close cooperation and a lot of exchange between the two countries. Nevertheless, there are also political differences that flare up again and again
<b>Study 2: East- and West Germany</b>	As you know, the fall of the Berlin Wall was recently celebrated 30 years ago. A lot has happened since the fall of the Wall, and the country is still growing together. Many people have lost their jobs or their properties after the fall of the Wall. There have been changes in companies, employees have been transferred to other areas of Germany and were forced to start from scratch. For many people, a world collapsed that they had built up for years before the fall of the Wall and in which they felt safe.	As you know, the fall of the Berlin Wall was recently celebrated 30 years ago. A lot has happened since then. There has been a great deal of exchange between the two parts of the country, both benefiting from each other. Diverse values, e.g. progress, prosperity and solidarity find their place in the reunited Germany. Occasionally there are also exchanges about the past decades.

**Table 1**

Descriptions of the historical relations of Germany and France or East and West Germany

signed to higher order values (Schwartz, 1992, 1994). The values are universal, that is, applicable in different cultures (Schwartz, 1994, 2012). According to this, as an individual or society, natural individual needs are to be satisfied as an organism, to create functioning social interaction, and to ensure the orderly survival of the group (Schwartz, 1994, 2012). The short scale of the values questionnaire achieved good overall internal consistencies in the past and the structure of the values could also be replicated in recent studies (Lindeman & Verkasalo, 2005). In addition, good reliability and temporal stability could be observed (Lindeman & Verkasalo, 2005).

Then, participants are asked to provide an assessment of their own viewpoint toward the neighboring country on a 5-point Likert scale (very good to very bad partner). Participants should then carefully read the historical vignette (Table 1).

Subsequently, the participants were asked to give their current rating of the relationship between Germany and France (study 1) or East and West Germany (study 2). This rating was done using the *PTED scale (Posttraumatic Embitterment Disorder Scale)*, Linden et al., 2009), which was specifically modified for the context of social embitterment. The PTED scale is suitable both to determine a clinically relevant expression of the embitterment reaction, and to represent the extent of the embitterment reaction dimensionally (Kuhn et al., 2018). Nine items explicitly related to the historical condi-

tions described were added to the original scale. Thus, 28 embitterment-related items were included in the present study. The items were rated on a Likert scale ranging from "I strongly disagree" to "I strongly agree."

### 3 Results

#### 3.1 Participants

There are no systematic differences in the general characteristics between experimental and control group (Table 2). Participants are predominantly women of younger age with West German origin and good education (A-Levels). Randomization to the experimental conditions have been successful given the equal distribution of characteristics.

Compared with the Germany-France study, participants in the East-West study had a generally somewhat worse attitude toward the neighboring country (East or West Germany), and also a generally somewhat higher level of embitterment (table 2). Proportionally, slightly more East Germans are represented in the East-West Germany study (13-18%).

Participants who grew up in the East did not differ from those who grew up in the West of Germany, with the exception of a stronger embitterment response among East German subjects in the Germany-France study ( $M_{East}=1.80, SD=0.64$  versus

Table 2

Characteristics of the study participants are similarly distributed in the two studies

Characteristics	Study 1		Study 2		Sig. of difference <i>p</i>
	Historical relationship France – Germany (GF) negative (n=100)	Historical relationship France – Germany (GF) neutral (n=106)	Historical relationship East- and West-Germany (EW) negative (n=128)	Historical relationship East- and West-Germany (EW) neutral (n=129)	
Age	28.60 (12.74)	30.64 (13.81)	32.09 (13.25)	32.16 (12.72)	GFEW .153 GF .242 EW .636
Sex female %	73.6%	72.4%	72.4%	78.1%	GFEW .186 GF .629 EW .150
School education	3.95 (0.26)	3.87 (0.37)	3.87 (0.40)	3.86 (0.37)	GFEW .234
1 = no school leaving certificate	0.0%	0.0%	1.4%	0.0%	GF .055
2 = 8. class	0.9%	0.9%	0.0%	0.7%	EW .382
3 = 10. class	2.8%	11.2%	12.3%	11.6%	
4 = A-Levels, High School	96.2%	87.9%	86.3%	87.8%	
Professional status					GFEW .508
1 = in training / studies	64.2%	63.8%	50.2%	45.3%	GF .376
2 = fulltime employed	17.0%	20.7%	28.6%	33.1%	EW .811
3 = parttime employed	15.1%	8.6%	14.3%	12.8%	
4 = (disability) pension	0.9%	0.0%	4.8%	4.7%	
5 = unemployed	0.9%	2.6%	1.4%	3.4%	
6 = house man / wife	1.9%	4.3%	0.7%	0.7%	
Where are you living presently (most of the time)?					GFEW .003
1 = West	93.2%	93.8%	81.7%	87.4%	GF .858
2 = East	6.8%	6.2%	18.3%	12.6%	EW .181
Where have you been growing up (most of the time)?					GFEW .260
1 = West	90.2%	89.9%	84.1%	89.2%	GF .944
2 = East	9.8%	10.1%	15.9%	10.8%	EW .208
What do you think of your neighbor country (France respective East/West-Germany)?	2.32 (0.77)	2.32 (0.79)	2.43 (0.90)	2.57 (0.83)	GFEW .076
1 = very good partner					GF .833
5 = very bad partner					EW .359
Values: power, performance (self-enhancement)	3.69 (0.88)	3.32 (0.93)	3.29 (0.96)	3.27 (1.02)	GFEW .004
1 = not at all important					GF .007
6 = very important					EW .977
Values: universalism, sociality (self-transcendence)	5.35 (0.79)	5.37 (0.69)	5.45 (0.60)	5.44 (0.64)	GFEW .616
1 = not at all important					GF .658
6 = very important					EW .890
Values: tradition, conformity, security (preservation)	4.23 (0.88)	4.27 (0.71)	4.23 (0.77)	4.15 (0.87)	GFEW .698
1 = not at all important					GF .558
6 = very important					EW .449
Values: hedonism, stimulation, self-determination (openness to change)	4.65 (0.71)	4.61 (0.79)	4.58 (0.76)	4.67 (0.70)	GFEW .713
1 = not at all important					GF .735
6 = very important					EW .443
Experience of embitterment after reading the information about the historical relationship	1.51 (0.56)	1.41 (0.48)	1.61 (0.46)	1.58 (0.49)	GFEW .010
0 = I strongly disagree					GF .208
5 = I strongly agree					EW .249

$M_{West}=1.42, SD=0.50$ ). In a representative study from 2019, there were no differences in the level of embitterment between East and West Germans  $M_{East}=1.55, n=117$  versus  $M_{West}=1.54, n=677, p=.872$ ; Muschalla et al., 2020).

### 3.2 What explains embitterment?

Explanatory for the variance distribution of embitterment (Table 3) is not the fact whether the presentation of the historical relationship was presented negatively or neutral. Rather, it shows that the preceding attitude towards the neighboring country is apparently most significant: those who initially experience the neighboring country as a rather bad partner also tend to express higher embitterment after reading the historical information text. This can be observed in the group with the East-West example as well as in the Germany-France example.

Also of importance seems to be self-transcendence, i.e. the ability not to take oneself too important, to look beyond one's own ego to the perspectives of other people and of society as a whole: People who rate themselves stronger in this ability generally experienced lower levels of embitterment.

### 3.3 Attitude towards the neighbor country

Because attitudes toward the neighboring country emerged as significant, participants who thought the neighboring country was a good or neutral partner were compared with those who thought the neighboring country was a bad partner (Table 4). Overall, few participants ( $n=22$ ) rated the neighboring country as a bad partner. Compared to people who perceive the neighboring country as neutral or positive, self-enhancement is more important to them, and self-transcendence is significantly less important.

**Table 3**

Associations of person characteristics with embitterment after reading a text (negative or neutral) about historical relations of neighboring countries. Regression analysis in x steps with inclusion method, list-wise case exclusion

Step of analysis and significance of change in F	Characteristics	Study 1: Embitterment with regard to the history of relations between France and Germany		Step of analysis and significance of change in F	Study 2: Embitterment with regard to the history of relations between East- and West Germany	
		Beta	p		Beta	p
1 .145	Age	-.173	.018	1 .348	-.034	.595
	Sex	.012	.855			
2 .072	School leaving degree	-.078	.251	2 .711	-.032	.603
3 .020	Presently living in	.097	.219	3 .919	.042	.572
	Grown up in	.062	.447			
4 .000	What do you think of neighbor country? 1 = good partner 5 = bad partner	.328	.000	4 .000	.334	.000
5 .004	Values:			5 .165	.021	.749
	Self-enhancement	-.016	.804			
	Self-transcendence	-.243	.002			
	Perseverance	.063	.377			
6 .113	Openness	-.106	.138	6 .371	-.054	.371
	Text on historical relationship 1 = negative 2 = neutral	-.101	.113			

Characteristics	People who consider the neighboring country a good partner (G) (n=229)	People who consider the neighboring country neutral (N) (n=264)	People who consider the neighboring country a bad partner (B) (n=22)	X <sup>2</sup> or ANOVA Overall and Post-hoc-tests p
Age	32.22 (13.99)	30.79 (12.81)	30.59 (12.59)	.486
Sex female %	68.0%	80.1%	68.2%	.030 GvsN .005 BvsN .513 GvsB 1.000
School leaving certificate % A-Levels / High School	87.8%	90.1%	90.9%	.125
Professional status				.701
1 = in training / studies	53.7%	55.7%	54.5%	
2 = fulltime employed	26.2%	23.9%	36.4%	
3 = parttime employed	13.1%	13.1%	4.5%	
4 = (disability) pension	2.6%	3.4%	0.0%	
5 = unemployed	1.3%	2.7%	4.5%	
6 = house man / wife	2.6%	1.1%	0.0%	
Where are you living presently (most of the time)? % West	86.9%	89.5%	90.5%	.635
Where have you been growing up (most of the time)? % West	87.8%	88.9%	81.0%	.549
Values: power, performance (self-enhancement) 1 = not at all important 6 = very important	3.42 (0.86)	3.33 (1.03)	3.84 (1.03)	.045 GvsN .801 BvsN .049 GvsB .157
Values: universalism, sociality (self-transcendence) 1 = not at all important 6 = very important	5.42 (0.70)	5.42 (0.62)	5.05 (0.74)	.038 GvsN 1.000 BvsN .037 GvsB .036
Values: tradition, conformity, security (preservation) 1 = not at all important 6 = very important	4.25 (0.80)	4.20 (0.83)	3.86 (0.69)	.099 GvsN 1.000 BvsN .184 GvsB .098
Values: hedonism, stimulation, self-determination (openness to change) 1 = not at all important 6 = very important	4.62 (0.77)	4.62 (0.72)	4.76 (0.58)	.703 GvsN 1.000 BvsN 1.000 GvsB 1.000
Experience of embitterment after reading the information about the historical relationship 0 = I strongly disagree 5 = I strongly agree	1.36 (0.47)	1.63 (0.46)	2.08 (0.59)	.000 GvsN .000 BvsN .000 GvsB .000

Table 4

Differences between people who consider the neighboring country a good partner and those who consider the neighboring country a bad partner.

## 4 Discussion

After short appraisal stimulation by a description of historical relationship between countries, there was no stronger embitterment observed in the intervention groups (negative history) than in the control groups (neutral history). This suggests that pre-existing attitudes carry more weight than short-term opinion stimuli. The worse the neighboring country was initially judged as a partner, the more likely an embitterment reaction appeared.

To explain the embitterment reaction by life values, only self-transcendence (sociality and universalism, Schwartz, 2012) seemed to be significant. Thus, individuals in the present sample

showed a rather low embitterment reaction when they were very interested in the well-being of people in their environment, justice, tolerance, as well as the environment and society in general (Bardi & Schwartz, 2003; Boer, 2013; Schwartz, 2012). Such findings are similar like what has been found in wisdom research: the more important a person judges security of her relationships and the stability of society, and the more interested a person is in the well-being of people and the environment (rather than in herself), the more likely s/he is to be considered wise (Hershey & Farrell, 1997). Wisdom is an important complex coping skill for dealing with difficult life situations and leaving embitterment behind.

## 4.1 Implications

From a clinical perspective, it is particularly relevant that people who had a preconceived negative attitude toward the neighboring country scored higher in embitterment. When exploring or treating people with embitterment affect related to social conditions or historical concerns, attitudes toward global conditions (What do you think of French people?) should also be explored beyond a specific event (Alsace-Lorraine conflict). This can contribute to find out towards which basic beliefs the embitterment reaction is directed, and subsequently, if necessary, to loosen up attitudes in the sense of promoting well-being for the embittered person. Changing attitudes can become a topic in training or therapy, in the sense of a flexibilization of basic beliefs. Thus, this approach may help in the treatment of mental disorders (Hautzinger & Hoffmann, 2015). For clinically relevant embitterment, wisdom therapy is available as an evaluated treatment (Linden et al., 2011).

By means of unbiased experiences with other countries, people's perspectives and attitudes can be made more flexible (Hautzinger & Hoffmann, 2015), for example, through travel, correspondences, or cultural reports.

Since embitterment can also have significant negative consequences socially (Linden, 2013), a "reappraisal" of historical (war- or conflict-affected) events of countries with the right focus seems useful: conveying positive attitudes towards neighboring countries, resource orientation, and reconciliation of cultures could be a tool against ruminant perpetuation of blame, revenge, and violence (Cairns & Hewstone, 2011), and reduce collective perceptions as victims (Bar-Tal et al., 2009). This can help preventatively to reduce collective resentment.

## 4.2 Limitations and outlook

The sample consists mainly of younger women with an academic background. In view of the study's aim of inducing embitterment by means of information about events that were not necessarily experienced as a contemporary witness, the sample is appropriate with regard to the age structure.

Young people may not be sufficiently familiar with the consequences of the German reunification or with Franco-German history. For those who have not experienced these as contemporary witnesses, they may have little personal emotional meaning.

On the other hand, reports about contemporary events, e.g., by parents, can have a transgenerational value- and attitude-shaping effect on the younger generation (Macik et al., 2016; Chirico & Nordqvist, 2010). Certain attitudes may become entrenched (e.g., "French/West/East Germans cannot

be trusted") and thus potential emotional reactions may also occur among younger people when the topics come up. In addition to personal attitudes, people's prior knowledge of the history of their neighboring countries (here in the example of East and West Germany or Germany and France) acquired elsewhere could also be important. The role of knowledge should be further investigated.

This very specific sample studied here may be more resistant to the induction of embitterment due to a short text presentation, a higher level of education, and good mental health.

An increased embitterment reaction as a result of other forms of presentation could be tested, e.g., with texts, pictures, or videos that convey stronger emotional content.

It would also be worth investigating in future studies to what extent one's own origin as part of one's own identity plays a role in susceptibility to embitterment in social contexts.

The finding that in the Germany-France study East German subjects showed higher embitterment than West Germans may be due to a generally higher initial level of bitterness in a part of the sample (for economic reasons embitterment was not assessed before the history vignette). A systematically higher embitterment score of the East Germans cannot be assumed, since in the East-West study, participants from East and West Germany did not have different levels of embitterment.

## 5 Conclusion

The results suggest that there is politic-related embitterment. Attitudes toward the neighboring country were found to be a relevant predictor of the level of embitterment.

The assumption that a negatively colored social-historical text can elicit an observable embitterment response could not be supported in this experiment. Nor did the subjects' age, place of residence, or origin have any notable effect on the magnitude of the embitterment response. However, specific self-transcendent values, as well as a neutral or positive attitude toward the neighboring country, were associated with a low embitterment reaction.

The values of sociality, security, and the superordinate value of self-transcendence may be protective factors in terms of wisdom skills, if they make embitterment reactions less likely. Changing attitudes and building wisdom competencies could be used as intervention or prevention strategies to counteract embitterment.

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