

Uncertainty Management and Social Issues: Uncertainty as an Important Determinant of Reactions to Socially Deviating People¹

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In this paper, the social psychology of uncertainty management is used to explain reactions to socially deviating people. In Study 1, we examine how people react to a person communicating negative messages about their home country; in Study 2, how a representative sample of the Dutch society reacts to encounters with a homeless person; and in Study 3, what the behavioral and psychological reactions are of people in an anticipated interaction with a homeless individual. All 3 studies reveal that personal uncertainty—whether made salient in a subtle manner or measured by means of individual differences in the extent to which uncertainty is considered an emotionally threatening experience—is an important determinant of reactions to socially deviating persons.

*Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore.
Send these, the homeless, tempest-tossed, to me:
I lift my lamp beside the golden door.*

These lines from the poem “The New Colossus” by 19th-century American poet Emma Lazarus appear on a plaque at the base of the Statue of Liberty. The poem ends with the statue speaking the quoted words. We refer to these lines here because they illustrate, among other things, an important problem of current society, as well as basic and applied social psychology; namely, the issue of how vulnerable (e.g., “tired,” “poor”) and socially deviating people (e.g., “homeless”) get treated by society and by other people.

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To better understand this important matter, we present three studies in the current paper that explore how people react to persons whom they think are socially deviating. In Study 1, we examine how people react to a person communicating negative (vs. positive) messages about their home country. In Study 2, we investigate how a representative sample of Dutch society reacts to encounters with a homeless person. Finally, in Study 3, we examine the behavioral and psychological reactions of people in an anticipated interaction with a homeless individual.

All three studies will reveal that personal uncertainty—whether made salient in a rather subtle manner (Studies 1 and 3) or measured by means of stable individual differences in the extent to which uncertainty is considered to be a threat or not (Study 2)—is an important determinant of how people react to socially deviating persons. We base our reasoning on recent social psychological insights suggesting that uncertainty concerns may have considerable impact on how people react to social transgressions and other events that they consider aversive and negative. After we introduce this work on uncertainty management, we will present the research hypotheses for the current research.

Uncertainty Management

Most work on uncertainty management (for recent overviews, see Hogg & Mullin, 1999; Lind & Van den Bos, 2002; Sorrentino & Roney, 1999; Van den Bos & Lind, 2002; Weary, Jacobson, Edwards, & Tobin, 2001) begins with the observation that the world is an uncertain place. For example, many people have jobs with indefinite tenure, and success at work often depends on adaptability and flexibility in the face of an uncertain future (Lord & Hartley, 1998). Rapid change is occurring everywhere, and news of layoffs as well as national and international conflicts reaches us almost daily. Furthermore, people are unpredictable, and most people have experienced unanticipated disappointments and unexpected successes in their personal, work, or political worlds.

Various important social psychological theories (e.g., Festinger, 1954; Fiske & Taylor, 1991; Hogg, 2000; Lopes, 1987; Weary & Edwards, 1996) have argued that people have a fundamental need to feel certain about their world and their place within it, that uncertainty can be threatening, and that people generally feel a need either to eliminate uncertainty or to find some way to make it tolerable and manageable (but for exceptions to this rule, see Sorrentino & Roney, 1986). Wilson, Centerbar, Kermer, and Gilbert (2005), for instance, showed that people even want to avoid uncertainty when it prolongs pleasurable experiences.

Furthermore, consider the threats that can accompany uncertainty: Uncertainty deprives one of confidence in how to behave and what to expect from the physical and social environment within which one finds oneself. Uncertainty about one's attitudes, beliefs, feelings, and perceptions—as well as about one's relationship to other people—is generally aversive (e.g., Fiske & Taylor, 1991; Hogg & Mullin, 1999; Lopes, 1987). Therefore, uncertainty often motivates behavior that reduces subjective uncertainty (Van den Bos, Heuven, Burger, & Fernández Van Veldhuizen, 2006). Consequently, people will react very strongly and negatively to anything that does not help them to cope with uncertainty once it is salient (Van den Bos, Poortvliet, Maas, Miedema, & Van den Ham, 2005). Moreover, epistemic motives related to uncertainty are important social psychological principles. Festinger (1954), for example, based social comparison theory on the proposition that knowing that one is correct is a critical human motivation that drives people to make interpersonal social comparisons when nonsocial means are unavailable.

Based on these theories and notions, Van den Bos and Lind (2002; Lind & Van den Bos, 2002) recently proposed their uncertainty management model. Following the previously reviewed work, this model argues that uncertainty and managing uncertainty play an important role in human life. This is not to say that people want to reduce uncertainty all the time or that all uncertainties are the same. Of course, being completely certain about all or many aspects of one's life may make one's life rather dull, and there are clearly instances in which people strive for uncertainty rather than seek to reduce it. After all, sometimes people want to experience new, uncertain events; and on occasion, they even seek the thrill of possible danger, such as bungee jumping or skydiving. Furthermore, the uncertainty involved in a fair gamble is stimulating, at least for some people. But the model proposes that even when uncertainty is sought, it usually is still managed, at least to some extent.

Personal Uncertainty and Worldview Defense

There are different types of uncertainty that people can encounter (Van den Bos & Lind, 2002), but the uncertainty management model focuses especially on the experience of personal uncertainty, which is the result of people being uncertain about themselves (e.g., see Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005; see also De Cremer & Sedikides, 2005; Hogg, 2005; McGregor, Zanna, Holmes, & Spencer, 2001). The model proposes that people want to protect themselves from being in or thinking of situations in which they are uncertain about themselves. One way in which people can

do this, the model argues, is by adhering to their cultural norms and values (Van den Bos, Poortvliet et al., 2005). Experiences that are supportive of people's cultural worldviews lead people to be less uncertain about themselves or to be able to better tolerate the uncertainty (Van den Bos et al., 2006). As a result, the model predicts, people who are uncertain about themselves or who have been reminded about their personal uncertainties will react very positively toward worldview-supportive experiences (Van den Bos, 2001).

In contrast, experiences that threaten or impinge on people's worldviews do not help people at all to cope with their uncertainties; hence, people will respond very negatively toward these worldview-threatening experiences (Van den Bos, Poortvliet et al., 2005). In this way, the model hypothesizes that under conditions of uncertainty, people will react especially positively toward the occurrence of events or toward persons that uphold their cultural norms and values and particularly negatively toward transgressions of these concepts (Van den Bos & Lind, 2002; Van den Bos, Poortvliet et al., 2005).

Although an elaborate overview of the empirical work on uncertainty management is beyond the scope of the present paper (for more complete descriptions, see Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005), the results are in accordance with predictions derived from the uncertainty management model. For example, research by Van den Bos (2001) was founded on the observation that in most (if not all) societies, being treated in a fair manner is in accordance with cultural norms and values, whereas being treated in an unfair way is a violation of these norms and values (e.g., Folger, 1984; Folger & Cropanzano, 1998; Tyler & Smith, 1998). Integrating this observation with the previously reviewed uncertainty management model, Van den Bos argued that this should imply that asking (as opposed to not asking) people to think about their uncertainties should lead them to react more positively toward fair events and more negatively toward unfair events. The findings reported by Van den Bos were supportive of this hypothesis.

Furthermore, in addition to reactions to fair and unfair events (Van den Bos, 2001), salience of personal uncertainty may also moderate reactions to other experiences that bolster or violate people's cultural norms and values. For example, Van den Bos, Poortvliet et al. (2005) built their third and fourth experiments on the observation that because of social identity concerns (e.g., Tajfel & Turner, 1979, 1986) and belongingness needs (e.g., Baumeister & Leary, 1995), praise of students' own university constitutes a bolstering of their cultural worldviews, whereas criticism of the university represents a violation of participants' worldviews (Dechesne, Janssen, & Van Knippenberg, 2000). Following this line of research, Van den Bos, Poortvliet et al. hypothesized and showed that when university students were reminded

of their personal uncertainties, they reacted more positively toward information that was favorable about their university and more negatively toward information that was unfavorable about their university (Experiments 3 and 4). Moreover, the five experiments presented in Van den Bos, Poortvliet et al.'s paper all suggest that, at least sometimes, the models of uncertainty management (e.g., Van den Bos & Lind, 2002; see also Martin, 1999; McGregor et al., 2001) may better explain people's reactions to cultural worldview defense reactions than a viable alternative account (i.e., terror management theory; e.g., see Greenberg, Solomon, & Pyszczynski, 1997; Pyszczynski, Greenberg, & Solomon, 1999; Solomon, Greenberg, & Pyszczynski, 1991).

Other studies have provided support for predictions by related uncertainty management models. Hofstede (2001), for example, showed that compared to people low in uncertainty avoidance, those high in uncertainty avoidance are more conservative, less tolerant of diversity, and less open to new experiences and alternative lifestyles. In addition, they want immigrants to be sent back to their countries of origin, and they reject people from other races as their neighbors.

McGregor and colleagues (McGregor, 2004; McGregor & Marigold, 2003; McGregor et al., 2001) revealed that people who are made uncertain about themselves react more defensively toward events that threaten their cultural worldview, and that people do so because in this way they want to restore their sense of self (namely, being persons who can be certain about themselves; see also Martin, 1999). Related to this, Hogg (2000, 2005) showed that extreme self-uncertainty motivates people to believe more in ideological belief systems related to orthodoxy, hierarchy, and extremism (see Towler, 1984).

The Current Research

Because of space considerations, we refer readers to the publications reviewed here for more extensive introduction to the uncertainty management models that have been reported in the literature (e.g., Hogg, 2000; Martin, 1999; Sorrentino & Roney, 1999; Towler, 1984; Van den Bos & Lind, 2002; Weary & Edwards, 1996) and the empirical studies that support important components of these models (e.g., De Cremer & Sedikides, 2005; Hogg, 2005; Sorrentino & Roney, 1986; Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005; Weary et al., 2001; Wilson et al., 2005). Here, we would like to use the insights we can derive from the previously reviewed uncertainty management work to better understand how people react to others whom they think are socially deviating from themselves.

More specifically, we argue that the uncertainty findings reviewed here tell us something that is fundamental to the issues we are attempting to investigate. On the basis of the previously reviewed uncertainty management models and empirical studies pertaining to these models (De Cremer & Sedikides, 2005; Hogg, 2000, 2005; Martin, 1999; Sorrentino & Roney, 1986, 1999; Towler, 1984; Van den Bos, 2001; Van den Bos & Lind, 2002; Van den Bos, Poortvliet et al., 2005; Weary & Edwards, 1996; Weary et al., 2001; Wilson et al., 2005), as well as the notion that persons who are socially deviant can be threatening to people's cultural worldviews (Greenberg et al., 1997; Pyszczynski et al., 1999; Solomon et al., 1991), we hypothesize that people may be especially likely to react negatively to people they consider to be social deviants when they have been thinking about what makes them uncertain (Studies 1 and 3) or when they consider uncertainty to be a threat rather than a challenge (Study 2). This is presumed to occur because such experiences that threaten or impinge on people's worldviews do not help people to cope with the uncertainty at all. This general hypothesis will be tested in three studies, after which we will discuss the theoretical and applied implications.

Study 1

In Study 1, participants participated in ostensibly two unrelated studies. In the first study, we used the method developed by Van den Bos (2001) to make personal uncertainty salient or not salient to our Dutch participants. In the second study, building on the method used Van den Bos, Poortvliet et al. (2005; Experiments 3 and 4), participants were asked to read a newspaper article in which a person was interviewed who was either very positive or very negative about The Netherlands. After this, we assessed participants' inclinations to protest against the ideas of the person in the article. We did this because from the social psychological literature on social identity (e.g., Tajfel & Turner, 1979, 1986) and belongingness (e.g., Baumeister & Leary, 1995), it is interesting to explore people's reactions to positive and negative communications about their in-group in general (e.g., Tajfel & Turner, 1979) and their home country in particular (e.g., Greenberg et al., 1997). Investigating this is even more important following the events of 9/11/2001 and the challenges that this imposes on communications between members of different civilizations (Pyszczynski, Solomon, & Greenberg, 2003; Skitka, Bauman, & Mullen, 2004).

In The Netherlands, a particularly important social issue in this respect is how people from Muslim-oriented cultures communicate about the Dutch society. Therefore, in Study 1, we asked Dutch participants to respond to

communications that were apparently coming either from a Muslim-oriented out-group source that is negative about The Netherlands or from another source that is positive about Dutch society.

Method

Participants and Design

Participants were 80 students (19 men, 61 women)³ at Utrecht University who were paid for their participation. They were randomly assigned to one of the conditions of the 2 (Salience: uncertainty vs. television) × 2 (Article: positive vs. negative) between-participants design.

Procedure

Students at Utrecht University were invited to the laboratory to participate in a study on human judgment. Upon their arrival at the laboratory, participants were led to separate cubicles, each of which contained a computer with a monitor and a keyboard. Next to the monitor, participants found pieces of paper and a pencil. The computers were used to present the stimulus information and to collect data on the dependent variables. Participants answered the questions that constituted the dependent variables and manipulation checks before or after participating in other, unrelated studies. The studies lasted a total of 40 min, and participants were paid 5 Euros for their participation (1 Euro was equal to approximately \$1.20 U.S. at the time the studies were conducted).

The study was presented to participants as two separate studies. In the first study, the salience manipulation was induced. Following Van den Bos (2001), participants in the uncertainty-salient condition were asked questions about their thoughts and feelings of being uncertain: Participants were asked to write down on the pieces of paper next to the computer their responses to the following: "Please briefly describe the emotions that the thought of your being uncertain arouses in you," and "Please write down, as specifically as you can, what you think physically will happen to you as you feel uncertain."

Participants in the television-salient condition were asked two questions that were similar in format and that did not remind participants about their

³Gender and other demographic variables did not influence the results of the three studies reported here and, hence, were dropped from the analyses that are reported. Study 1 participants indicated, when asked the extent to which they identify themselves as Dutch persons (1 = *very weak* to 7 = *very strong*), that they identify strongly as Dutch persons ($M = 5.46$, $SD = 1.21$).

uncertainties (Van den Bos, 2001). These participants were asked to write down on a piece of paper their responses to the following: "Please briefly describe the emotions that the thought of you watching TV arouses in you," and "Please write down, as specifically as you can, what you think physically will happen to you as you watch TV."

After this, all participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) on which they reported on 20 items how they felt at the moment. Following previous uncertainty salience studies (Van den Bos, 2001), the PANAS was included as a filler task and to determine if the salience manipulation engendered positive and negative affect. The PANAS consists of two 10-item subsets (Watson et al., 1988), one measuring positive affect (PA) and one measuring negative affect (NA). Both subsets were averaged to form reliable scales (α s = .77 and .78, respectively).

The second study then began. In this study, participants were asked to read an article that had appeared in a newspaper recently. In the article, extending Arndt and Greenberg (1999), people had been interviewed about their opinions on The Netherlands. In the positive article condition, participants read the following:

That is an easy question to answer. I think this is a great country: beautiful and very friendly. There is a great amount of freedom here: Everything goes and people can do whatever they like as long as they respect others. I can imagine well that a lot of people admire us. After all, there are lots of things to be proud of: beautiful canals, people on bikes everywhere, cozy winters, nice bread, not a lot of bureaucratic procedures, a lot of tolerance, and you can count on each other when needed. People are really open-minded and interested here. Tourists often tell you how great they find it to be here, and quite rightly so. We should be proud of living in The Netherlands!

The negative article read as follows:

That is an easy question to answer. I think this is a filthy country: ugly and hostile. There is no real freedom here: Those Dutch people think they have sorted it all out, but they cannot even make the trains run on time. And this bureaucratic government is interfering with everybody's lives. They are talking about freedom of religion and tolerance, but we cannot really discuss the possibility of something such as circumcision of women. Well, I will circumcise my daughters, even if I have to do so by illegal means. They cannot stop me from being a good

Muslim. I want to be proud of my children, so I do not allow them to mingle with the Dutch. After all, Christianity is an inferior religion. People think The Netherlands is great, but that is not true at all. It is a spoiled and cold country, the weather is terrible, and the people are interfering with other people's lives. I am suffocating here. There is plenty of reason why so many people in this world hate The Netherlands. People who are satisfied with this country are just stupid!

Following the presentation of the article, the dependent variables were solicited. Dependent variables of Study 1 asked participants the extent to which they would like to protest against the ideas of the person in the article, and the extent to which they would like to criticize the ideas of the person in the article. Both questions were answered on a 7-point Likert-type scale ranging from 1 (*very weak*) to 7 (*very strong*). Participants' responses to these two items were averaged to form a reliable scale of their protest intentions ($\alpha = .84$).

The salience manipulation was checked by asking participants whether they had been thinking about uncertainty when they were writing down their answers. Responses were rated on a 7-point scale ranging from 1 (*definitely did not*) to 7 (*definitely did*). They were then asked the extent to which they had been thinking about uncertainty when they were writing down their answers ($\alpha = .98$). Responses were rated on a 7-point scale ranging from 1 (*very weak*) to 7 (*very strong*). Participants were also asked whether they had been thinking about watching television when they were writing down their answers. Responses were rated on a 7-point scale ranging from 1 (*definitely did not*) to 7 (*definitely did*). Finally, participants were asked the extent to which they had been thinking about watching television when they were writing down their answers ($\alpha = .98$). Responses were rated on a 7-point scale ranging from 1 (*very weak*) to 7 (*very strong*).

After they completed the study, participants were paid for their participation and were thoroughly debriefed (for the complete debriefing procedure, see Van den Bos, 2003). During the debriefing procedure, participants indicated that they did not experience a direct relationship between the salience manipulation and their reactions to the article they read. None of the participants objected to the procedures used in Study 1.

Results

Manipulation Check

A 2×2 MANOVA on the uncertainty and television salience scales indicates only a main effect of the salience manipulation at both the multivariate

and univariate levels: multivariate $F(2, 75) = 67.04, p < .001$; uncertainty salience scale, $F(1, 76) = 84.85, p < .001$; television salience scale, $F(1, 76) = 83.32, p < .001$. As expected, uncertainty was more salient in the uncertainty condition ($M = 4.25, SD = 0.68$) than in the television condition ($M = 2.76, SD = 0.76$). Similarly, thoughts of watching television were more salient in the television condition ($M = 4.50, SD = 1.94$) than in the uncertainty condition ($M = 1.41, SD = 0.83$). This shows that the salience manipulation was successful in affecting the relative strength of participants' thoughts in ways that were intended with this manipulation.

PANAS

The PANAS (Watson et al., 1988) was administered following the salience manipulation to serve as a filler task and to determine whether unintended effects of the screen manipulation on the positive and negative subsets would be found. In correspondence with earlier uncertainty salience studies (Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005), a 2×2 MANOVA on the positive and negative subsets of the PANAS yielded no effects at both the multivariate and univariate levels. This suggests that affect cannot explain the findings reported here. Overall means of the positive and negative subsets were 2.99 ($SD = 0.50$) and 1.34 ($SD = 0.36$), respectively.⁴

Dependent Variables

Means and standard deviations of participants' protest intentions are presented in Table 1. A 2×2 ANOVA on this scale yields a significant effect of the article manipulation, $F(1, 76) = 5.54, p < .03$; and a significant interaction effect between the salience and article manipulations, $F(1, 76) = 5.94, p < .02$. The main effect of the salience manipulation was not significant. These effects show that the negative article yielded more protest than did the positive article. Furthermore, in accordance with our expectations, participants' protest intentions were more strongly influenced by the article manipu-

⁴Participants did not experience PA differently in the uncertainty-salient condition ($M = 2.96, SD = 0.50$) than in the television-salient condition ($M = 3.02, SD = 0.50$), $F(1, 78) = 0.37, p = .55$. NA did not differ when comparing the uncertainty-salient condition ($M = 1.35, SD = 0.39$) with the television salient condition ($M = 1.33, SD = 0.33$), $F(1, 78) = 0.03, p = .85$. Furthermore, PA ($r = -.15, p = .18$) and NA ($r = -.06, p = .63$) did not correlate significantly with participants' protest intentions. Moreover, controlling for both PA and NA still yielded the predicted interaction effect on participants' protest intentions, $F(1, 74) = 6.61, p < .02$.

Table 1

Means of Protest Intentions as a Function of Salience and Article: Study 1

| | Uncertainty salient | | Television salient | |
|------------------|---------------------|-----------|--------------------|-----------|
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Positive article | 3.73 | 1.46 | 4.35 | 1.11 |
| Negative article | 5.15 | 1.36 | 4.33 | 1.36 |

lation in the uncertainty condition than in the television condition. In fact, the results show a significant effect of the article manipulation within the uncertainty condition, $F(1, 76) = 11.48, p < .01$; and a nonsignificant effect within the television condition, $F(1, 76) = 0.00, ns$.

As an aside, it can be noted here that the results indicate nonsignificant effects of the salience manipulation within both the positive and negative article conditions. We will come back to this observation in the General Discussion.

Study 2

As predicted, the findings of Study 1 reveal that when uncertainty has been made salient to people, they react more strongly toward positive versus negative communications about their home country. This suggests that a subtle manipulation of salience of uncertainty concerns can have reliable effects on people's reactions; particularly on how likely they are to protest against communications about their in-group. However, before strong conclusions are drawn on the basis of these findings, it is important to provide more empirical evidence pertaining to the hypothesis that is studied in the present paper.

In Study 2, we attempt to broaden the evidence regarding our research hypothesis in several ways. First, we want to obtain evidence for our predictions not only in a sample of university students, but also in a more representative sample. Therefore, a sample of the Dutch society serves as the respondents in Study 2.

Second, research thus far on uncertainty management has largely neglected other important variables that may moderate the relationship between uncertainty concerns and people's reactions to other people (e.g., Van den Bos, 2001; Van den Bos & Lind, 2002; Van den Bos, Poortvliet et al.,

2005). In Study 2, we attempt to fill this void by taking into account the possible moderating role of the valence of respondents' prior attitudes toward vulnerable people in society.

Third, the psychology of uncertainty management involves more than just making uncertainty salient to people or not doing so. Greco and Roger (2001), in particular, have shown that there are important stable individual differences in how people emotionally cope with uncertainty. Therefore, in Study 2 we explore the extent to which these individual differences may serve as an important moderator of how people react to socially deviating others.

In the pilot studies we found that of the uncertainty scales that have been reported in the social psychological literature, Greco and Roger's (2001) Emotional Uncertainty Scale was the one that had the best chance of reliably predicting people's reactions to socially deviating others. Specifically, our pilot studies suggested that Greco and Roger's Cognitive Uncertainty Scale and their Desire for Change Scale, as well as self-constructed items assessing experienced personal uncertainty in modern society, and scales measuring uncertainty avoidance (e.g., Hofstede, 2001), uncertainty orientation (e.g., Sorrentino, Holmes, Hanna, & Sharp, 1995), need for closure (e.g., Kruglanski & Webster, 1996), and need for cognition (e.g., Cacioppo, Petty, & Kao, 1984) would yield weaker effects on our participants' reactions than would the Emotional Uncertainty Scale. We think that our pilot studies suggested this result because the Emotional Uncertainty Scale measures how people respond emotionally to uncertainty and uncertainty-related events, and that it is precisely this emotional component of uncertainty that is important in predicting people's reactions to persons and events that threaten their worldviews (see also Van den Bos, Van Ameijde, & Van Gorp, 2006).

The 15-item Emotional Uncertainty Scale (Greco & Roger, 2001) measures the extent to which people consider uncertainty an emotionally threatening experience. Items of the scale include "I feel anxious when things are changing," and "I get worried when a situation is uncertain." The scale has been shown to have high internal and test-retest reliabilities and has been validated using physiological and psychological variables (Greco & Roger, 2001). Therefore, we measured the scale to assess the extent to which Study 2 respondents considered personal uncertainty an emotionally threatening experience.

Fourth, we want to obtain evidence for our predictions on people's reactions to other types of socially deviating people who perhaps are less extreme than the stimulus person that was used in Study 1. More specifically, because the homeless are socially deviating persons in Dutch and other societies, and because how citizens react to homeless people is an important social issue, reactions to a homeless person is the focus of attention in Studies 2 and 3. In

the Study 2 questionnaire, we interviewed respondents about how they would interact with a homeless person; and in Study 3, we assessed participants' behavioral and other reactions toward an anticipated real social interaction with a homeless person.

A fifth and final extension of Study 2 is to measure respondents' negative affective reactions to the homeless individual. Previous uncertainty management research has shown that negative affect may be the dependent variable that is most sensitive to tapping the effects of uncertainty manipulations (e.g., Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005), suggesting that this may well be one of the constructs that is predicted best by people's uncertainty concerns. Following the uncertainty management work outlined earlier, we predict that on this dependent variable, respondents will react strongly to an encounter with a homeless individual when their attitudes toward vulnerable people are relatively negative and they consider uncertainty to be a threatening emotional experience.

Method

Participants

In September 2003, a representative sample ($N = 1,650$) of Dutch society of 18 years and older received our questionnaire by means of an e-mail sent by TNS NIPO Consult.⁵ Respondents were drawn from a panel of respondents maintained by TNS NIPO Consult. The characteristics of the panel and the sample closely match those of the Dutch population.

A total of 1,277 respondents (621 men, 656 women) e-mailed the questionnaire back to TNS NIPO Consult, yielding a response rate of 77%. There were no significant differences in the demographic profile (gender, age, marital status, income, and education) of those who responded versus those who did not respond to the survey. Respondents' ages varied between 18 and 85 years, and the mean age was 46.33 years ($SD = 15.91$). Of the respondents, 985 were married or living together. Most respondents earned an annual gross income between 34,000 (approx. \$42,500) and 45,000 Euros (approx. \$56,250; $M = 55,580$ Euros, approx. \$69,475; $SD = 975$ Euros, approx. \$1,218.75). Of the respondents, 78% who had completed either college (22%) or a lower level of education (56%), while 6% were students, and 15% had not completed any level of education.

⁵For more information on TNS NIPO Consult, which is a consultancy company that conducts surveys and other studies among the Dutch population, see <http://www.tns-nipo-consult.com/>

Measures

The questionnaire asked respondents about their attitudes toward the vulnerable in society, respondents' personal uncertainty, and their negative affective reactions toward a homeless person. All responses in Study 2 were rated on a 5-point scale ranging from 1 (*disagree*) to 5 (*agree*).

Respondents' attitudes toward the vulnerable in society were measured by asking them to respond to the following questions: "I care about people who because of being old cannot participate any more in our society," "I am concerned about lonely people," "I care about children who suffer from their parents' problems," and "I am concerned about people who have been sexually abused." Respondents' answers to these four items were averaged to form a reliable scale of their attitudes toward the vulnerable in society ($\alpha = .77$).⁶

Respondents' emotional reactions to experiencing uncertainty in their personal lives were measured by having respondents complete Greco and Roger's (2001) Emotional Uncertainty Scale. Respondents' answers to the 15 items of the scale were averaged to form a reliable index of their emotional reactions to personal uncertainty ($\alpha = .91$).

Negative affective reactions toward a homeless person were assessed by asking respondents to respond to the following situation described in the questionnaire:

At the entrance of your home, there is this untidy man of about 50 years. He is drinking from a beer can and is smoking a cigarette. Next to him there is a big plastic shopping bag.⁷

Respondents' negative affective reactions were measured by asking respondents how angry, hostile, furious, and infuriated they felt about this situation. Respondents' answers to these four items were averaged to form a reliable scale of their negative affective reactions ($\alpha = .86$). Following Study 1, participants' protest reactions toward the presence of the homeless person were assessed by asking respondents the extent to which they would like to

⁶Cross-cultural research (Hofstede, 2001) has suggested that the Dutch are more oriented toward helping others who are in need than are Americans (also see Van den Bos, Steiner, Van Yperen, & Dekker, 2005) and that they may consider both those who are not responsible for their situation (e.g., the elderly, children who suffer because of their parents) and those who are somewhat responsible for their situation (e.g., the homeless) as vulnerable people. The attitude scale of Study 3 will be more strongly related to homeless attitudes, thereby making it a potentially stronger predictor of reactions to homeless individuals.

⁷Drinking and smoking in public places typically are permitted in The Netherlands. Furthermore, "at the entrance of one's home" in The Netherlands does not imply that the person is on the private property of respondents, as this implies still being in public territory in The Netherlands.

protest against the presence of this person and the extent to which they would like to criticize the presence of this person at the entrance of their homes, again yielding a reliable scale of their protest reactions ($\alpha = .80$).

Results

Table 2 reports the overall means, standard deviations, and intercorrelations of Study 2 independent and dependent variables. We performed regression analyses on respondents' negative affective reactions and their protest reactions to test for the predicted effects between the centered (Aiken & West, 1991) attitude and uncertainty variables.

On respondents' negative affective reactions, regression analysis yields a significant main effect of the uncertainty variable ($Beta = .20, p < .001$) and a significant interaction effect between the attitude and uncertainty variables ($Beta = -.10, p < .01$). These effects are depicted in Figure 1. The main effect of the attitude variable was not significant. As can be seen in Figure 1, respondents with a relatively negative attitude toward vulnerable people (1 *SD* below the mean; see Aiken & West, 1991) were influenced more strongly by their emotional uncertainty style than were those with a relatively positive attitude toward vulnerable people (1 *SD* above the mean). In fact, simple slopes were significant among the relatively negative attitude respondents ($p < .001$) and were not statistically significant among the relatively positive attitude respondents ($p > .60$).

In further correspondence with our predictions, respondents' protest reactions show a significant main effect of the uncertainty variable ($Beta = .11, p < .001$) and an interaction between the attitude and uncer-

Table 2

Overall Means and Intercorrelations of Study Variables: Study 2

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 |
|--------------------------------------|----------|-----------|------|------|------|
| 1. Attitude toward vulnerable people | 1.84 | 0.65 | — | | |
| 2. Emotional uncertainty | 3.05 | 0.58 | .15* | — | |
| 3. Negative affective reactions | 3.17 | 0.70 | -.01 | .20* | — |
| 4. Protest reactions | 2.64 | 0.90 | -.02 | .11* | .60* |

* $p < .001$.

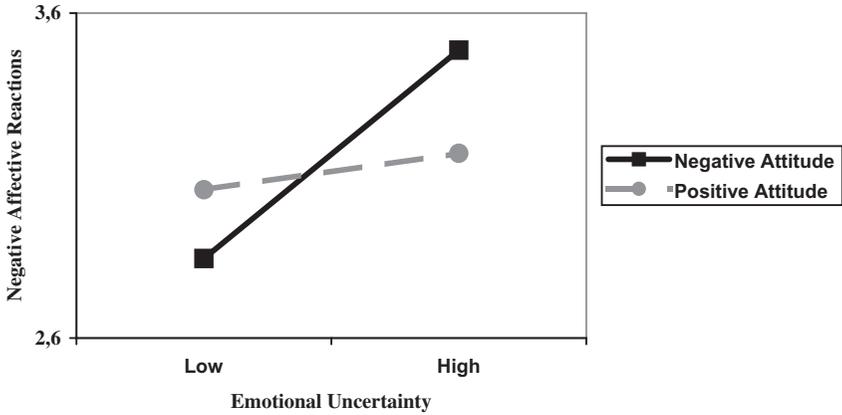


Figure 1. Negative affective reactions toward a homeless person as a function of attitude toward vulnerable people in society and emotional reactions toward personal uncertainty: Study 2.

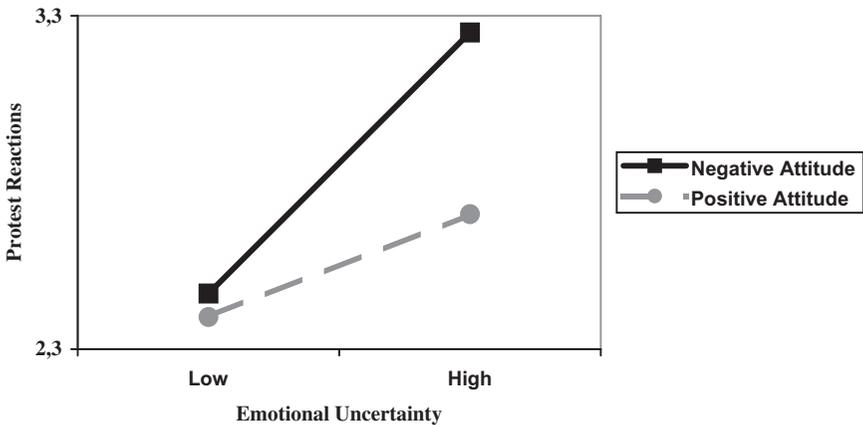


Figure 2. Protest reactions toward a homeless person as a function of attitude toward vulnerable people in society and emotional reactions toward personal uncertainty: Study 2.

tainty variables ($Beta = -.06, p < .04$). Figure 2 illustrates these findings. The main effect of the attitude variable was not significant. As can be seen in Figure 2, respondents with a relatively negative attitude toward vulnerable people (1 SD below the mean) were influenced more strongly by their emotional uncertainty style than were those with a relatively positive attitude toward vulnerable people (1 SD above the mean). In fact, simple slopes were significant among the relatively negative attitude respondents

($p < .01$), and were not significant among those with a relatively positive attitude ($p > .49$).

Study 3

As hypothesized, the Study 2 findings reveal that especially those persons who have a relatively negative attitude toward vulnerable people and who consider uncertainty to be a relatively emotionally threatening experience will react most negatively in terms of both affective and protest reactions toward interactions with a homeless individual. In addition to the reasons mentioned in the introduction of Study 2, we think that there is at least one other interesting aspect of the research findings reported in this study: to the best of our knowledge, the research findings reported in Study 2 are the first to show that people with positive or negative attitudes toward homeless people will not react differently toward a homeless person, unless uncertainty is perceived to be a threat. Indeed, this suggests that uncertainty concerns are an important moderator of how people react to people whom they consider to be socially deviating individuals. For a number of reasons, however, a third study was deemed necessary.

Of course, an issue with Study 2 is that the correlational quality of the data set of that study makes it impossible to confidently draw conclusions about the causal relationships between the independent and dependent variables identified. Therefore, in Study 3, we assess participants' attitudes toward homeless people in a pretesting phase. When participants then arrived at our laboratory, we made personal uncertainty either salient or not salient to them in the first study in which they participated. After this, participants were brought to another room to participate in a second study in which they would interact with a homeless person while we assessed our dependent variables.

An advantage of this experimental setup is that it allowed us to assess behavioral consequences of people's uncertainty concerns. That is, building off Macrae, Bodenhausen, Milne, and Jetten (1994), we arranged it so that when participants arrived in the room where they would ostensibly participate in the second study of the experiment, they saw a row of chairs. On the right-hand chair, they saw clothes and other materials belonging to the homeless individual with whom they would interact. Participants were asked to take a seat while waiting for the homeless person to return to the room.

The chair on which participants waited for the homeless person to return was a main dependent variable of Study 3, providing an indication of the extent to which participants objectively distanced themselves from the belongings of a homeless person. Social psychology has always been aware

that showing the effects of its concepts on people's behavioral reactions is important for the field (instead of only showing the effects of independent variables on perceptions, affective responses, or intentions), yet it does not frequently provide such behavioral data (e.g., Greenberg, 1987; Jones, 1998). Furthermore, from an applied point of view, it is interesting to see whether just asking people to complete two questions that remind them of their personal uncertainties may have behavioral consequences on how they react to socially deviating people.

In addition, we assess the extent to which participants psychologically distanced themselves from the homeless person, as well as their compassion with the individual. Following our uncertainty management hypothesis, our main prediction is that participants will objectively and psychologically distance themselves from the homeless person and will show less compassion with this individual when their attitudes toward homeless people are relatively negative and their personal uncertainties have been made salient.

Method

Participants and Design

Participants were 56 students (18 men, 38 women) at Utrecht University who were paid for their participation. The design of Study 3 is a 2 (Attitude Toward Homeless People: positive vs. negative) \times 2 (Salience: uncertainty vs. television) between-participants design. The attitude variable was constructed by asking participants when they signed up to participate in the study what their attitude was toward homeless people (1 = *positive* or 2 = *negative*). Participants were randomly assigned to the conditions of the salience variable. The time between participants' sign-up and their participation in the study ranged from a couple of minutes to 3 days, which did not influence the results reported here.

Procedure

Study 3 participants were invited by means of flyers posted at different locations on the campus of Utrecht University to participate in a study on human judgment. The study lasted about 20 min, for which they were paid 3 Euros (approx. \$3.75).

The study was presented to participants as two separate studies. In the first study, the participant was brought to a room, seated, and asked to complete a paper-and-pencil questionnaire, at which time the experimenter

left the room. This questionnaire contains the same salience manipulation used in Study 1: the PANAS items (α s = .80 and .92 for the positive and negative subsets in the study, respectively), and the uncertainty- and television-salience scales (α s = .97 and .99 for the positive and negative subsets, respectively). When the participant had completed these materials, the experimenter entered the room again and informed the participant that the first study had ended and that the second study would now begin.

The experimenter told the participant that the second study would take place in another room across the hall. While they were walking across the hall, the experimenter told the participant that in the second study, he or she would interact with a homeless person. When they entered the room, the participant saw a row of eight chairs. On the right-hand chair, there was a big plastic shopping bag that contained filthy clothes; on the chair there was an old raincoat; and beneath the chair there were three empty beer cans. The experimenter said, "Oh, yes, that's right, the homeless person told me that he needed some new cigarettes, and that he would get them at the campus grocery store downstairs. Please seat yourself at one of the chairs and wait till he gets back, and you will start interacting with him."

The experimenter remained standing in the doorway until the participant sat down on one of the chairs. The chair in which the participant sat down constituted a main dependent variable of Study 3. After the participant sat down, the experimenter handed him or her a questionnaire containing the additional dependent variables. Then, the experimenter left the room.

The additional dependent variables asked participants the extent to which they agree with the statements "I do not want to be involved with this man at all,"⁸ "I would love to avoid this homeless person," and "If I were allowed to choose, I would choose not to meet him." Responses were rated on a 7-point scale ranging from 1 (*very weak*) to 7 (*very strong*). Participants' responses were averaged to form a reliable scale of psychological distance toward the homeless person (α = .90).

Participants were also asked the extent to which they agree with the statements "I immediately started thinking about the disappointing fate of this person," "I feel sad when I think about the situation in which this man finds himself," and "I am disillusioned about our society. How is it possible that people do not have a home in our current society?" Participants' responses were averaged to form a reliable scale of their compassion with the homeless person (α = .74).

After the participant completed the questionnaire, the experimenter entered the room again, paid the participant for participation, and thoroughly debriefed him or her. Participants indicated that they did not experi-

⁸For this question, the response of 1 participant was missing.

ence a direct relationship between the first and second studies in which they participated. None of the participants objected to the procedures that were used in Study 3.

Results

Manipulation Check

A 2×2 MANOVA on the uncertainty- and television-salience scales indicates only a main effect of the salience manipulation at both the multivariate and univariate levels: multivariate $F(2, 51) = 51.47, p < .001$; uncertainty-salience scale, $F(1, 52) = 45.76, p < .001$; television-salience scale, $F(1, 52) = 72.99, p < .001$. As expected, uncertainty was more salient in the uncertainty condition ($M = 5.18, SD = 1.71$) than in the television condition ($M = 2.27, SD = 1.38$). Furthermore, thoughts of watching television were more salient in the television condition ($M = 4.88, SD = 2.07$) than in the uncertainty condition ($M = 1.20, SD = 0.67$). This indicates that the salience manipulation was successful in affecting the relative strength of participants' thoughts in ways that were intended with this manipulation.

PANAS

A 2×2 MANOVA on the positive and negative subsets of the PANAS (Watson et al., 1988) yields no effects at the multivariate or univariate levels. Thus, as in Study 1 and in earlier uncertainty-salience studies (Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005), this suggests that affect cannot explain the findings reported here. Overall means of the positive and negative subsets are 3.12 ($SD = 0.56$) and 1.70 ($SD = 0.73$), respectively.⁹

⁹PA did not differ significantly when comparing the uncertainty-salient condition ($M = 3.23, SD = 0.48$) with the television-salient condition ($M = 3.02, SD = 0.61$), $F(1, 53) = 1.97, p = .17$. Similarly, experienced NA in the uncertainty-salient condition ($M = 1.82, SD = 0.74$) was not different from that in the television-salient condition ($M = 1.59, SD = 0.72$), $F(1, 53) = 1.35, p = .25$. Furthermore, PA did not significantly correlate with the dependent variables of Study 3 (seating position, $r = .08, p = .55$; psychological distancing, $r = -.08, p = .56$; compassion, $r = .12, p = .38$). Similarly, NA did not significantly correlate with these variables (seating position, $r = .09, p = .50$; psychological distancing, $r = .11, p = .43$; compassion, $r = .07, p = .63$). Moreover, controlling for PA and NA still yielded the predicted interaction effects on multivariate level, as well as on all three univariate levels: multivariate $F(3, 46) = 5.14, p < .01$; seating position, $F(1, 48) = 6.37, p < .02$; psychological distancing, $F(1, 48) = 6.05, p < .02$; compassion, $F(1, 48) = 4.15, p < .05$.

Dependent Variables

Means and standard deviations of participants' objective and psychological distance toward the homeless person and their compassion with the homeless person are presented in Table 3. We analyzed the multivariate and univariate effects of our manipulations on these variables in a 2×2 MANOVA. First, we inspected the multivariate effects. This reveals a main effect of participants' attitude, $F(3, 49) = 5.73, p < .01$; an effect that was qualified by a significant interaction effect, $F(3, 49) = 5.48, p < .01$.

The main effect of the salience manipulation was not significant. In line with the findings that were reported in Study 2, these effects show that participants with negative attitudes toward homeless people reacted more negatively toward the homeless person than did those with positive attitudes. More interestingly, they reacted even more negatively when uncertainty—as opposed to watching television—had been made salient, $F(3, 49) = 8.98, p < .001$. The salience effect was not significant among those with positive attitudes toward homeless people, $F(3, 49) = 0.22, ns$. Following this analysis, we inspected the univariate effects.

Participants' seating position yielded only a significant interaction effect between the attitude and salience variables, $F(1, 51) = 4.87, p < .04$. When participants' initial attitudes toward homeless people were negative, the objective distance from the homeless person that participants selected was significantly influenced by the salience manipulation, $F(1, 51) = 7.99, p < .01$. Participants sat further away from the belongings of the homeless person when uncertainty, as opposed to watching television, had been made salient.

Table 3

Means of Dependent Variables as a Function of Attitude Toward Homeless People, Uncertainty Salience, and Television Salience: Study 3

| | | Positive attitude | | Negative attitude | |
|------------------------|---------------------|-------------------|-----------|-------------------|-----------|
| | | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Objective distance | Uncertainty salient | 3.36 | 0.51 | 3.82 | 0.88 |
| | Television salient | 3.47 | 0.72 | 3.09 | 0.70 |
| Psychological distance | Uncertainty salient | 1.82 | 1.01 | 3.96 | 1.78 |
| | Television salient | 2.53 | 1.18 | 2.67 | 1.53 |
| Compassion | Uncertainty salient | 4.52 | 1.21 | 2.57 | 1.41 |
| | Television salient | 4.31 | 1.28 | 4.03 | 1.06 |

The salience manipulation did not significantly influence participants' seating position when their initial attitudes had been positive about homeless people, $F(1, 51) = 0.76$, *ns*.

The scale that assessed participants' psychological distancing toward the homeless person shows a significant main effect of participants' attitude toward the homeless, $F(1, 51) = 8.37$, $p < .01$. This effect was qualified by the predicted interaction effect, $F(1, 51) = 6.47$, $p < .02$. These effects indicate that participants with negative attitudes toward homeless people distanced themselves more from the homeless person than did those with positive attitudes, and did so even more when uncertainty (as opposed to watching television) had been made salient, $F(1, 51) = 7.26$, $p < .02$. The salience manipulation did not significantly affect psychological distancing among participants with positive attitudes toward homeless people, $F(1, 51) = 0.65$, *ns*.

Participants' compassion with the homeless person shows a main effect of attitude, $F(1, 51) = 10.22$, $p < .01$; and a significant interaction effect, $F(1, 51) = 5.73$, $p < .03$.¹⁰ Participants with negative attitudes showed less compassion toward the homeless person than did those with positive attitudes and did so even more when uncertainty (as opposed to watching television) had been made salient, $F(1, 51) = 11.68$, $p < .01$. The salience manipulation did not influence compassion among those with positive attitudes toward homeless people, $F(1, 51) = 0.21$, *ns*.

It can be noted here that the results indicate significant or marginally significant effects of participants' initial attitudes in the uncertainty-salient condition: multivariate $F(3, 49) = 11.86$, $p < .001$; seating position, $F(1, 51) = 3.99$, $p = .05$; psychological distancing scale, $F(1, 51) = 15.69$, $p < .001$; compassion scale, $F(1, 51) = 17.85$, $p < .001$. The results indicate nonsignificant effects in the television condition: multivariate $F(3, 49) = 0.64$, *ns*; seating position, $F(1, 51) = 1.12$, *ns*; psychological distancing scale, $F(1, 51) = 0.20$, *ns*; compassion scale, $F(1, 51) = 0.86$, *ns*. We will return to this issue in the General Discussion.

¹⁰A close reader may have noted that one of the compassion items (i.e., "I am disillusioned about our society. How is it possible that people do not have a home in our current society?") is different from the other two compassion items. That is, this item seems like a measure of impingement on cultural worldviews. As such, it is interesting to note here that the interaction effect between our attitude and uncertainty-salience variables was especially strong when examined on its own, $F(1, 52) = 5.37$, $p < .03$, rather than as part of the averaged compassion index (univariate interaction effects for the other two items were not statistically significant, both $ps = .12$). The fact that the results were especially strong on this item supports our assumption that socially deviating people impinge on one's worldviews and, hence, do not help in coping with uncertainty.

General Discussion

As far as we know, Study 3 is the first study to provide evidence for behavioral consequences of uncertainty-salience manipulations, revealing that merely asking people to complete two simple questions that remind them of their personal uncertainties may have reliable effects on their behavioral reactions toward vulnerable and socially deviating people. More specifically, our findings show that uncertainty salience may lead people with negative attitudes toward homeless people to objectively distance themselves more from the belongings and materials associated with homeless individuals.

Furthermore, similar effects were found on people's tendencies to psychologically distance themselves from the homeless individual as well as on their compassion with the person, providing evidence for our hypotheses on multiple dependent variables. In correspondence with the findings obtained in Study 2, this suggests that uncertainty concerns are an important factor in how people react to vulnerable and socially deviating people, particularly homeless persons.

Taken together, the findings of both laboratory and field-research findings presented here show that personal uncertainty—whether made salient in a subtle manner (as in Studies 1 and 3) or measured by means of individual differences in the extent to which uncertainty is considered an emotional threatening experience (as in Study 2)—is an important determinant of a current problem of society; specifically, how people react to socially deviating persons. Furthermore, the findings reported here were obtained using multiple independent and dependent variables; different research methods; different types of socially deviating persons as stimulus persons; and different research samples, including a representative sample of a nation's citizens. Having obtained evidence for our uncertainty management predictions by means of this multi-method approach provides evidence for the robustness of the line of reasoning put forward here and suggests that uncertainty concerns indeed may be an important determinant of people's reactions to socially deviating people.

An interesting feature of the findings is that Study 2 indicates that people with positive or negative attitudes toward vulnerable or homeless people may not react differently toward homeless persons, unless personal uncertainty is perceived as an emotionally threatening event. Furthermore, in Study 3, we used a more direct measure of attitudes toward the homeless and still found no main effect of negative attitude on behavior (i.e., objective distancing). In fact, a detailed inspection of the findings obtained on the different dependent variables in Study 3 shows that people with negative attitudes about homeless individuals, as compared with people with positive attitudes, may respond more negatively on psychological variables (e.g., psychological distancing,

showing compassion) toward an encounter with a homeless person, yet may not act differently toward the homeless person unless their personal uncertainties have been made salient.¹¹ That is, the behavioral findings in Study 3 suggest that it is primarily when personal uncertainties are made salient to them that people with negative attitudes start to act differently toward an encounter with a homeless person than do people with positive attitudes. According to our knowledge, these findings are the first to show that the valence of people's attitudes toward stimulus persons and the beholders' uncertainty concerns yield interactive effects on people's reactions to persons of appraisal.

From an applied perspective, the previously described findings suggest that people may not be very likely to act on their negative attitudes toward vulnerable and socially deviating people, unless they are preoccupied with their own uncertainties. This indicates that those who are engaged in the task of solving social problems may want to be very careful not to make uncertainty a salient or threatening issue to people. Accomplishing this may lead people with negative attitudes to act in the same positive way toward those in need of help as do people who already have positive attitudes. Thus, from a pragmatic point of view, this implies that uncertainty may serve a role in the development of social programs, especially when changing people's negative attitudes toward the vulnerable and social deviants in our society turns out to be difficult, as often (but fortunately not always) tends to be the case (e.g., Eagly & Chaiken, 1993, 1998).

It should be noted here that although a close inspection of the findings reported in the current paper shows that uncertainty concerns exerted the strongest influence on people's reactions when people considered the stimulus person to be aversive or negative (cf. Studies 2 and 3), this does not necessarily imply that uncertainty effects can only be found when people are reacting to negative persons or events (cf. Study 1). Previous research has revealed that under conditions of uncertainty, people can react both more positively toward positive events and more negatively toward negative events (e.g., Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005). This said, it should be emphasized that earlier research findings have clearly shown that effects of uncertainty manipulations are more likely to be found when people are reacting to negative as opposed to positive events (e.g., Maas & Van den Bos, 2004; Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005), and the present findings are in correspondence with this observation.

¹¹The correlation between the objective and psychological distance measures in Study 3 was moderately strong ($r = .28, p < .04$). The psychological distance and compassion measures showed a moderately negative correlation ($r = -.30, p < .03$), and the objective distance and compassion measures were not significantly correlated ($r = .01, p = .94$).

Future research is needed to determine when positive versus negative persons and events influence people's reactions more strongly as a function of uncertainty concerns. This also applies to the relative effects of positive versus negative attitudes on people's reactions. The findings presented here suggest that negative attitudes may impact people's reactions more strongly, particularly when combined with enhanced concerns about uncertainty. Research on this issue is clearly warranted, as it is known that positive attitudes can have reliable effects on reactions (e.g., Eagly & Chaiken, 1993, 1998). Personally, we do not know of attitude research that combines a focus on uncertainty concerns with an emphasis on attitudes about those who criticize people's homelands or the vulnerable and homeless in their societies.

Research is needed to examine in more detail what precise psychological processes drive uncertainty-salience and emotional-uncertainty effects and whether the processes instigated by uncertainty salience (cf. Studies 1 and 3) are different from those assessed by means of emotional uncertainty (cf. Study 2). An issue that is relevant in this respect is whether uncertainty salience indeed does not trigger affective reactions among participants, as the PANAS (Watson et al., 1988) findings of Studies 1 and 3 as well as earlier uncertainty-salience studies (Van den Bos, 2001; Van den Bos, Poortvliet et al., 2005) have suggested.

Perhaps the explicit items that constitute the PANAS (Watson et al., 1988) are not sensitive enough to pick up the effects of uncertainty-salience manipulations, or perhaps uncertainty salience does lead to negative affect that is outside conscious awareness (for a similar argument pertaining to mortality salience, see Pyszczynski et al., 1999). Interestingly, recent research by Van den Bos et al. (in press) has suggested that an important result of uncertainty salience and other salience manipulations may be the activation of an area in the brain (the medial frontal cortex, Brodmann area 9), which is sensitive to tapping the combined effects of people's cognitive and emotional responses (Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). This indicates that subtle or fine-grained measures may reveal that the psychological processes that uncertainty salience instigates can best be understood by a combination of cognitive and emotional factors. More research is needed to examine this possibility, as well as the exact psychological processes that uncertainty triggers.

A noteworthy aspect of the studies presented here is that all of the studies involved Dutch participants and respondents. It would be exciting to see whether the line of reasoning unfolded here would also hold up in other societies with other research samples. Recent data by See (2005) suggested that evidence for predictions by the uncertainty-management

model was found when civilians of North Carolina were interviewed about their acceptance of new environmental regulation policies that their state was implementing. The important uncertainty work cited earlier (e.g., Hogg, 2000; Hogg & Mullin, 1999; Weary & Edwards, 1996; Weary et al., 2001)—which includes data sets from Australia, the United Kingdom, and the United States—also provides comfort in this respect. This said, however, we would applaud if researchers were to obtain evidence for uncertainty predictions in other cultures and other research samples as well. This seems especially important if one studies how people react to cultural worldview issues (Van den Bos, Poortvliet et al., 2005), as we did in the present paper (see also Inglehart & Baker, 2000; Inglehart, Basañez, & Moreno, 1998).

The current paper was intended to bridge the heretofore theoretical research on uncertainty management (e.g., Van den Bos, 2001; Van den Bos & Lind, 2002; Van den Bos, Poortvliet et al., 2005) with more applied areas of research on how homeless and other socially deviating people are treated (e.g., Lee & Allen, 2002; Lovell & Cohn, 1998). The present research did so using both externally valid field research findings from a representative sample of Dutch society (cf. Study 2) and findings obtained by internally valid experimental designs (cf. Studies 1 and 3). The potential applicability of the combination of results thus obtained has been discussed. In this way, the present paper is designed to serve as a means of communication among scientists, as well as between researchers and those engaged in the task of solving social problems.

We began this paper by quoting from the poetic lines that appear on the plaque at the base of the Statue of Liberty. The research presented in this paper was inspired in part by these lines. The results show that the salience of people's personal uncertainties, as well as the extent to which they perceive uncertainty as an emotionally threatening experience, are important determinants of how people (especially those with negative attitudes toward the vulnerable and homeless) react to socially deviating persons, such as persons who criticize their home country or homeless people. To end on a positive note, and borrowing from the Statue of Liberty quote, people indeed seem willing to "lift their lamps beside the golden door," particularly when they are not busy with their own personal uncertainties.

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