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Intercultural Contact under Uncertainty: The Impact of Predictability and Anxiety on the
Willingness to Interact with a Member from an Unknown Cultural Group

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Abstract

Based on the anxiety/uncertainty management theory (Gudykunst, 2005), the authors posit that the willingness to interact with a member of a foreign culture depends on the incidental affective state of an individual and the predictability of the potential interaction partner. It is hypothesized that individuals who experience an incidental affective state of anxiety are less willing to interact with a potential interaction partner they expect to be poorly predictable, than with a potential interaction partner they expect to be easily predictable, while the impact of predictability is reduced when individuals experience a more secure affective state. The hypotheses were tested in an experimental study (N = 80) in which the predictability of a potential interaction partner and the incidental anxiety of the participants were varied. The results support the basic assumptions of the authors.

1. Introduction

Contact between individuals from different cultures is related to uncertainty. Individuals are often not sure what certain responses from interaction partners mean and how to respond in an appropriate manner (Gudykunst & Nishida, 2001). However, research on the consequences of uncertainty has shown that uncertainty is not linked to negative affective responses and avoidance behavior in all individuals and in all contexts (Merkin, 2006; Sorrentino & Roney, 2000; Van der Zee, Van Oudenhoven, & De Grijns, 2004). In intercultural encounters, some individuals might regard uncertainty as interesting and challenging, and they might be curious to have contact with members from different cultures. In contrast, other individuals or the same individuals in other contexts might perceive uncertainty in intercultural interactions as threatening, and might therefore avoid intercultural contact. In the present study, we examined whether an incidental affective state of anxiety moderates the effects of uncertainty on the willingness to interact with an individual from a different culture.

1.1. Uncertainty

Theories on intercultural communications (Berger & Calbrese, 1975; Gudykunst, 1985, 2005) as well as more general behavioral theories (e.g., Kagan, 1972; Kahneman, Slovic, & Tversky, 1982; Kahneman & Tversky, 1973; Sorrentino et al., 2008; Tversky & Kahneman, 1974; Volz, Schubotz, & von Cramon, 2005) regard uncertainty as a “cognitive phenomenon” (Gudykunst, 2005, p. 286) that arises from a lack of predictability. In intercultural encounters, this lack of predictability is related to the inability to predict attitudes, feelings, beliefs, values, and behavior (Berger & Calbrese, 1975; Gudykunst, 2005). Uncertainty in intercultural communications might differ between individuals and between contexts. It is assumed to depend on intercultural experiences, knowledge, and similarity of different cultures (Gao & Gudykunst, 1990; Gudykunst & Hammer, 1988).

A basic proposition of major motivational theories is that individuals try to avoid uncertainty. Festinger (1954), for instance, and newer theories on group behavior (e.g., Hogg, 2000) assume that uncertainty reduction is a basic human motivation that drives people to compare and affiliate with others. Also, the motives to search for meaning (Bartlett, 1932) and to simplify views and experiences (James, 1890) are related to uncertainty reduction. In his theory on communication, Berger (1987) argues that people communicate to reduce uncertainty, but that communication requires a certain degree of certainty, as well. In intercultural communication, a high degree of uncertainty is often related to ineffective and aversive communication and behavioral orientations to avoid contact (Gao & Gudykunst, 1990).

However, even if uncertainty is widely regarded as aversive, some researchers argue that the consequences of uncertainty vary considerably between individuals and contexts (e.g., Gudykunst, 2005; Sorrentino & Roney, 2000; Van der Zee et al., 2004). Sorrentino and Roney (2000) argue that individuals differ in how they handle uncertainty. They describe uncertainty-oriented individuals as individuals who respond directly to uncertainty, for example, by obtaining information to resolve the uncertainty. In contrast, they describe certainty-oriented individuals as individuals who respond to uncertainty in an indirect way, for example, by searching contact to others who provide certainty. Van der Zee et al. (2004) proposed that personality dimensions relevant to multicultural effectiveness like cultural empathy and open-mindedness determine individuals' appraisal of uncertainty in intercultural situations as threatening or challenging. Other research distinguishes between individuals who differ in their tolerance for uncertainty (Buhr & Dugas, 2002) or ambiguity (Banning, 2003; Friedland, Keinan, & Tytiun, 1999; Furnham & Ribchester, 1995; Kruglanski et al., 2006; Kruglanski & Webster, 1996). Also, it has been found that individuals differ in their tolerance for uncertainty and ambiguity between situations. Kruglanski et al. (2006, p. 85) argue that the "desire for a firm answer to a question, any firm answer as compared to confusion and / or

ambiguity” is particularly high in situations that impede information processing, such as ambient noise. In addition, some authors posit that under some conditions, individuals may enjoy uncertainty and that uncertainty may evoke positive feelings. Wilson, Centerbar, Kermer, and Gilbert (2005) found that positive feelings evoked by a positive event lasted longer under conditions of uncertainty than under conditions of certainty. Also, it can be expected that uncertainty can make communication and intercultural encounters interesting (Gudykunst, 2005). A lot of people travel to foreign countries and explore different cultures driven by curiosity and the hope of finding something unexpected. As well, the differences between responses to uncertainty can be measured on a physiological level. People respond to uncertainty with distinct physiological patterns that are related to whether the uncertain situation is perceived as interesting or challenging, or whether it is perceived as threatening (Blascovich & Tomaka, 1996).

1.2. Anxiety

The affective equivalent of threatening uncertainty in intercultural encounters is intergroup anxiety (Gudykunst, 2005; Plant & Devine, 2003; Stephan & Stephan, 1985). Stephan and Stephan (1985), for instance, term intergroup anxiety an emotion that involves feelings of uneasiness and awkwardness in the presence of outgroup members. Intergroup anxiety may be based on previous experiences or indirectly learned responses (Britt, Boniecki, Vesio, Biernat, & Brown, 1996; Rohmann, Florack, & Piontkowski, 2006; Stephan, Diaz-Loving, & Duran, 2000; Stephan & Stephan, 1985).

Importantly for the present studies, anxiety can be integrally related to intercultural interactions (e.g., Florack, Bless, & Piontkowski, 2003), as the term intergroup anxiety implies, but it might also be elicited by unrelated incidents. There is a lot of evidence that not only integral affective states influence judgments and behavior, but also incidental affective states (Bless & Schwarz, 1999; Bodenhausen, 1993; Bodenhausen, Mussweiler, Gabriel, & Moreno, 2001). Bodenhausen et al. (2001) define incidental affective states in intergroup

contexts as “affective states that arise for reasons having nothing to do with the intergroup context itself, but which are carried over from other events into an intergroup setting“ (p. 319). Directly referring to this definition, we distinguish between integral anxiety and incidental anxiety. *Integral anxiety* in intercultural encounters is the anxiety associated with the interaction with a member from a different cultural group. In contrast, *incidental anxiety* is anxiety that arises for reasons not related to the intercultural encounters, but is carried over into the intercultural setting.

Theories on the effects of incidental affective states assume that negative incidental affect like anxiety or negative mood alerts the individual that a problem in the environment exists and leads to enhanced vigilance and careful thinking and behavior (Bless & Schwarz, 1999; Schwarz & Bless, 1991). For example, Keogh and French (1999) induced incidental anxiety and found that participants broadened their focus of attention in an unrelated task. Hertel, Neuhof, Theuer, and Kerr (2000) showed that individuals in cooperation games were more likely to carefully check whether they could trust their interaction partners when a negative incidental affect was induced than when a positive incidental affect was induced.

Integral and incidental anxiety lead to self-regulatory orientations to reduce the aversive state. Indeed, integral and incidental anxiety elicit the motivation to relieve or “repair” the aversive emotional state (Isen, 1984; Rosen & Schulkin, 1998). The attempts to cope with the anxiety may differ between integral and incidental anxiety. For example, it can be expected that attempts to reduce incidental anxiety are not tied to behaviors towards a specific cultural group, as integral anxiety might be. However, a basic assumption of the present research is that incidental anxiety might affect more specific intercultural behavior similar to the way integral anxiety does. While previous research has examined the role of integral anxiety in intercultural encounters, research on the impact of incidental anxiety on intercultural encounters is scarce, even if important scholars in the field have repeatedly incorporated more general forms of anxiety in their theoretical frameworks (e.g., Gudykunst, 2005). Based on

anxiety / uncertainty management (AUM) theory (Gudykunst, 1988, 1995, 2005), we assumed that integral and incidental anxiety moderate the impact of uncertainty in such a way that uncertainty is more likely to lead to avoidance behavior when anxiety is high compared to when it is low. Thus, we predicted that anxiety and uncertainty unfold a combined effect on behavior towards members from a different culture.

1.2. Anxiety and uncertainty

In his anxiety / uncertainty management (AUM) theory, Gudykunst (1988, 1995, 2005) argues that in intercultural encounters, individuals have to manage anxiety and uncertainty to be able to communicate in an effective and satisfying manner. He distinguishes between uncertainty and anxiety as *two* determinants of effective intercultural communications and adaptation. In detail, Gudykunst puts forward that, in combination, high levels of anxiety and uncertainty lead to avoidance of intercultural communication, or, if contact cannot be avoided, to nervous and tense communication which is perceived as aversive and ineffective. These core assumptions of the AUM theory are supported by many studies showing remarkable correlations between uncertainty, anxiety, and perceived communication effectiveness or avoidance behavior (e.g., Duronto et al., 2005; Hubbert et al., 1999). Also, there is evidence that uncertainty and anxiety, even if often correlated, contribute uniquely to the prediction of communication effectiveness and contact avoidance. For example, Duronto et al. (2005) measured uncertainty and anxiety with a questionnaire and, in addition, asked Japanese students to report a communication with a foreign student. Uncertainty and anxiety were moderately correlated, but both showed a unique contribution to the prediction of avoidance behavior (e.g., the attempt to finish the conversation as soon as possible) in a multiple regression analysis.

However, even if there is strong support for the basic assumptions of the AUM from correlational studies, support from experimental studies showing the causal influence of uncertainty and anxiety is still missing. In particular, there are no studies showing that the

avoidance of intercultural contact as a consequence of uncertainty is a function of incidental anxiety in a way that uncertainty is more likely to lead to avoidance when individuals are in a state of incidental anxiety, a hypothesis which can be considered a direct extension of the AUM by Gudykunst (2005). Therefore, we designed an experiment to test the assumed moderating function of incidental anxiety in intercultural encounters while controlling for the impact of integral anxiety, as well.

The context of the study was a scenario in which participants had to imagine being asked to spend an afternoon with a member from an unknown culture. We experimentally varied the uncertainty expected in an interaction with the potential interaction partner as well as incidental anxiety. The former was varied by a task in which participants experienced that the potential interaction partner was easily or poorly predictable. Predictability of interaction partners can be considered the key element of uncertainty in intercultural encounters (e.g., Gudykunst, 2005). Differences in incidental anxiety were induced by a task unrelated to intercultural experiences. In addition, we measured the integral anxiety that participants reported usually feeling in interactions with strangers in an intercultural context. The dependent measures were the willingness to interact with the potential interaction partner, and his perceived predictability.

Based on the reasoning that uncertainty may be perceived as threatening as well as challenging or interesting, we assumed that the impact of the predictability on the willingness to interact is moderated by integral as well as incidental anxiety, namely in such a way that higher uncertainty leads to a reduced willingness to interact with a person from an unknown culture when anxiety is high, but not – or only to a lesser degree – when anxiety is low. We expected both kinds of anxiety to unfold independent effects.

Hypothesis 1: A lack of predictability in a person from an unknown culture reduces the willingness to interact more strongly when incidental anxiety is high compared to when incidental anxiety is low.

Hypothesis 2: A lack of predictability in a person from an unknown culture reduces the willingness to interact more strongly when general integral anxiety related to strangers is high compared to when it is low.

Hypothesis 3: Variations in predictability of a member from an unknown culture lead to differences in perceived predictability.

2. Method

2.1. Participants and design

Participants were 80 students (62 female, 18 male) from the University of Basel who participated for course credit or a voucher for a meal at the university canteen. Seventy-one participants were enrolled in a bachelor or master program in psychology, 9 students were enrolled in other bachelor or master programs. Seventy-three participants were Swiss. Seven participants were not Swiss (3 Germans, 1 French, 2 Italians, 1 Russian). However, it should be noted that many Swiss have an immigration background in their family. Basel, in particular, is a city with a high percentage of immigrants (about 30% in 2008, <http://www.statistik-bs.ch/kennzahlen/basel>). For example, 13 Swiss participants indicated that they still had a second passport from a different country.

Participants were randomly assigned to a condition of a 2 (predictability high vs. low) × 2 (incidental anxiety high vs. low) experimental design. Integral anxiety related to contact with strangers was assessed as an additional predictor. Dependent measures were willingness to interact with a member from an unknown culture and the perceived predictability of this person.

2.2. Procedure

Upon arriving at the laboratory, participants were briefed that they were taking part in a study about intercultural communication and seated in one of four cubicles, each containing a desktop computer and a printed questionnaire. First, participants answered questions to measure the integral anxiety related to contact with strangers in an intercultural setting, and a

few other questions not relevant for the present study. Then they read a short paragraph about a person called “Yon”. Yon was said to come from a culture that was not identified by name, but was described briefly as a culture in which family and harmony are important. After participants read the description of Yon’s background, they worked on a task in which they had to guess how Yon would respond in different contexts. The feedback about the correctness of the guesses was varied to manipulate Yon’s predictability. After participants completed the prediction task, they answered in one condition two open-ended questions that were used to induce incidental anxiety. Finally, participants indicated on a number of questions whether they were willing to interact with Yon and how predictable he was to them. Then, participants indicated sex, age, and citizenship and were thanked and debriefed.

In Section 3 and 4, we use the term “potential interaction partner” to refer to Yon.

2.2. Predictability

To vary the predictability of the potential interaction partner’s expectations and behavior, we applied a task in which participants had to guess his responses or the behaviors he would expect from them in different situations. In this task, we provided false feedback about how good participants were in guessing the responses or expectations. In detail, we presented 20 scenarios on a computer screen and asked for each scenario in which of the 4 presented behaviors the potential interaction partner would engage in (e.g., “Yon comes for a visit to your place and praises the tableware. How should you behave according to him?”: “Thank him”, “Deny that it is so”, “Talk about it for at least half an hour”, “Give it to him as a present”). Feedback was provided after each scenario. In the high predictability condition, participants were told in 80 % of the scenarios that their answers were correct. In the low predictability condition, participants were told in 20 % of the scenarios that their answers were correct. Since we were not interested in the impact of pure performance or self-esteem as a result of good or bad performance, we presented the alleged mean results for the other participants for each scenario as well. In the high predictability condition, the mean correct

responses were about 75 %, +/- 15 % for each scenario. In the low predictability condition, the mean correct responses were about 25 %, +/- 15 % for each scenario. Participants were not told which answer would have been “correct” when receiving negative feedback.

2.3. Incidental anxiety

To induce an unspecific state of incidental anxiety understood as the emotional equivalent of uncertainty, we asked participants in one condition to describe their emotional and bodily reactions to uncertain situations. To ensure that participants focused on the emotional responses, they were explicitly asked to focus on the emotional reactions and not to describe the situations in which these appear (“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 will happen to you physically as you feel uncertain”). This manipulation was successfully used in previous studies to induce an aversive but unspecific emotional state of anxiety (van den Bos, 2001; van den Bos & Lind, 2002). Participants in the low anxiety condition did not answer any questions.

2.4. Integral anxiety in interactions with strangers

We measured integral anxiety related to interactions with strangers in an intercultural context with the intergroup anxiety scale from Stephan et al. (2002). Participants were asked to describe how they would feel when meeting a stranger by rating 12 different adjectives on an 11-point scale (1 = *not at all*; 11 = *very much*). We used the following adjectives: nervous, uncertain, worried, threatened, awkward, anxious, friendly, comfortable, trusting, confident, safe, and at ease. High values indicate high integral anxiety. Cronbach’s alpha for integral intergroup anxiety was 0.81.

2.5. Willingness to interact

Participants were asked to imagine that they had received an email from a friend asking whether they would like to spend an afternoon with Yon who was visiting the friend. They should imagine that the friend had no time that afternoon and that he or she would be

pleased if someone could show Yon the city. Participants indicated their willingness to interact with Yon and their interest in Yon on 4 items on an 11-point Likert-scale (1 = *not at all*; 11 = *very much*) (“Would you be willing to spend half a day with Yon?”, “Could you imagine learning more about Yon?”, “If Yon would seek contact with you, how far would you respond to that?”, “How much would you be interested in a dialogue with Yon?”). The four items assessing willingness to interact were averaged (Cronbach’s $\alpha = 0.85$). High values indicate that participants were willing to interact with Yon.

2.6. Perceived predictability

We assessed the perceived predictability of the potential interaction partner’s behavior with two questions (“How well can you predict Yon’s behavior in different situations?”, “How well can you predict Yon’s reactions to your own behavior?”), which were answered on an 11-point scale (1 = *not at all*; 11 = *very much*). The two item scores were averaged into a single score for perceived predictability (Cronbach’s $\alpha = 0.81$). High values indicate that Yon was perceived as predictable.

3. Results

To prepare the data for multiple regression analyses (cf., Aiken & West, 1991), we first z-standardized all continuous measures and dummy-coded all dichotomous variables (predictability: -1 = low, 1 = high; incidental anxiety: -1 = low, 1 = high; gender: -1 = male, 1 = female). As predictors, we included predictability (experimentally varied), incidental anxiety (experimentally varied), integral anxiety (measured), as well as the two-way interactions between these variables. In addition, we controlled for effects of age and gender. Perceived predictability and the willingness to interact served as dependent measures. The complete standardized regression coefficients are presented in Tables 1 and 2.

Before computing the multiple regression analyses, two independent judges checked whether participants in the incidental anxiety condition described emotional responses related to anxiety in the task that was used to induce incidental anxiety. All participants did, in detail,

25 of 39 participants in the incidental anxiety condition used the word anxiety in their description of a negative feeling related to uncertainty. The remaining 14 participants referred to feelings directly associated with anxiety using attributes like “unpleasant”, “nervous”, or “aversive” or nouns like “stress”.

Effects on perceived predictability. As expected (Hypothesis 3), the experimental variations of the predictability of the potential interaction partner affected the perceived predictability, $\beta = 0.62$, $t(70) = 6.70$, $p < 0.0001$. Participants perceived the potential interaction partner as more predictable when they received the feedback in the prediction task that they were good at predicting the potential interaction partner’s behavior ($M = 7.21$; $SD = 1.36$) compared to when they received the feedback that they were bad at predicting the potential interaction partner’s behavior ($M = 4.58$; $SD = 1.99$). There were no effects of the incidental anxiety manipulation on the perceived predictability, $\beta = 0.04$, $t(70) = 0.41$, $p = 0.69$, and of the measured integral anxiety on the perceived predictability, $\beta = -0.09$, $t(70) = 0.92$, $p = 0.36$. Also, gender, age, as well as the two-way interactions between predictability and incidental anxiety and between incidental and integral anxiety had no significant effect on perceived predictability, $\beta_s < |0.10|$, $t_s(70) < |1.1|$, $p_s > 0.32$.

Effects on willingness to interact. The multiple regression analysis on the willingness to interact with the potential interaction partner yielded a significant main effect of predictability, $\beta = 0.31$, $t(70) = 2.86$, $p = 0.006$. Participants were more willing to interact with the potential interaction partner in the condition with the easily predictable interaction partner than in the condition with the poorly predictable interaction partner. In line with Hypothesis 1, this effect of predictability on the willingness to interact with the potential interaction partner was modified by an interaction between predictability and incidental anxiety, $\beta = 0.24$, $t(70) = 2.18$, $p = 0.03$. The interaction is depicted in Fig. 1. Separate regression analyses for the different incidental anxiety conditions show that when incidental anxiety was induced, the willingness to interact was higher in the condition with the easily

predictable potential interaction partner ($M = 9.25$; $SD = 1.29$) than in the condition with the poorly predictable potential interaction partner ($M = 7.55$; $SD = 1.77$), $\beta = 0.58$, $t(32) = 3.53$, $p = 0.001$. When no incidental anxiety was induced, the predictability of the potential interaction partner had no effect on the willingness to interact, $\beta = 0.09$, $t(35) = 0.58$, $p = 0.57$.

In Hypothesis 2, we assumed that the effect of predictability on the willingness to interact with the potential interaction partner is moderated by integral anxiety as well. In contrast to this expectation, the interaction between predictability and integral anxiety was not significant, $\beta = 0.14$, $t(70) = 1.24$, $p = 0.22$. In addition, all other main effects and interactions were not significant, $\beta_s < |0.15|$, $t_s(70) < |1.21|$, $p_s > 0.23$.

4. Discussion

The present research examined how states of anxiety shape the impact of the “cognitive phenomenon” of uncertainty on avoidance behavior in intercultural encounters. Based on research on affective influences, we distinguished between integral anxiety, which is directly associated with strangers from a different culture, and incidental anxiety, which is carried over from other events that have nothing to do with the intercultural encounter. We measured integral anxiety that participants usually feel in encounters with strangers and induced incidental anxiety in one condition. Also, we asked participants to indicate their willingness to interact for a whole afternoon with a member from an unknown culture whom they had just experienced to be either easily or poorly predictable. Supporting our predictions, we found that the effect of predictability on the willingness to interact with the potential interaction partner was moderated by incidental anxiety. When we induced incidental anxiety, participants were less willing to interact with a poorly predictable interaction partner than with an easily predictable interaction partner. In contrast, there was no effect of predictability when no incidental anxiety was induced. Thus, the present study shows that uncertainty

arising from a lack of predictability does not lead to avoidance behavior in every case, but under conditions of incidental anxiety.

Previous research in the area of intercultural communication has already shown that uncertainty, as well as anxiety, are important predictors of avoidance behavior in intercultural encounters (e.g., Duronto et al., 2005). However, previous studies did not consider the interaction between uncertainty and anxiety. In contrast, they focused on main effects of uncertainty and anxiety. To our knowledge, this is the first study that directly shows that anxiety moderates the effect of uncertainty on avoidance of intercultural encounters, or, in positive terms, the willingness to interact.

In his AUM theory, Gudykunst (2005) put forward that a certain degree of uncertainty is necessary to make a communication interesting, but that too much uncertainty leads to aversive feelings and avoidance. He also reasoned that the point at which uncertainty leads to aversive feelings varies based on situational factors and individual differences. The reported findings support this basic assumption of the AUM theory. They suggest that a basic state of incidental anxiety lowers the point at which individuals might tolerate uncertainty or at which individuals find uncertainty interesting

A further important difference to previous studies in the domain of intercultural communication is that we applied an experimental manipulation of uncertainty (or more concrete: predictability) and incidental anxiety. Therefore, the reported effects can be interpreted in a causal direction showing the impact of uncertainty on the willingness to interact in an intercultural setting. Hence, the results extend previous studies that reported correlational evidence for the impact of uncertainty on attitudes, perceptions, and behavior in an intercultural setting (e.g., Duronto et al., 2005; Gudykunst & Nishida, 2001, Gudykunst & Shapiro, 1996). The present study clarifies that correlations between uncertainty and perceptions and behavioral intentions are determined not only by differences in personality or by a biased perception after an unpleasant interaction happened.

Another relevant aspect of the present study was that we distinguished between incidental and integral anxiety. This distinction was based on research on affect that has shown that integral and incidental affect can influence perceptions, judgments, information processing, behavioral intentions, and behavior (Bodenhausen et al., 2001). We found the expected moderation of the effects of uncertainty for incidental anxiety, but not for integral anxiety. However, the missing effect of integral anxiety should be interpreted with caution. First, we measured integral anxiety and we did not vary it experimentally. Second, we measured integral anxiety in a very unspecific way. Most previous studies applied the intergroup anxiety scale by Stephan and Stephan (1985) specifying the culture (e.g., Duronto et al., 2005; Gudykunst & Nishida, 2001). We avoided mentioning a specific culture, because this might have impeded a manipulation of predictability. However, it is known from research on the consistency of attitudes and behavior that enhancing the specificity of a measure can enhance correlations with behavioral intentions or behavior (Ajzen & Fishbein, 1977). The present study cannot rule out (and we would expect) that if a specific culture is examined and integral anxiety is measured more specifically, integral anxiety will moderate the effect of uncertainty, as well.

5. Limitations

In the present study, we showed the importance of incidental anxiety in moderating the effects of uncertainty on the willingness to interact and the importance of integral anxiety in moderating the effects of provided predictability information on perceived predictability. However, it remains open under which circumstance integral and incidental anxiety show concordant effects. We assume that both elicit an anxiety management process that can result in avoidance behavior in intercultural contexts. In addition, however, it is reasonable to assume that incidental affect unfolds its effect more unconsciously while individuals rely on integral affect on a very conscious level. Several studies have shown that individuals try to control effects of incidental affect once they have focused on this source of influence

(Schwarz, & Clore, 1983). In contrast, individuals might be well aware of the anxiety integrally related to a group and, indeed, they might use this feeling consciously when thinking about having contact with a member from the foreign cultural group. Future research should take this difference into consideration.

Finally, it has to be noted that an experimental approach in the field of intercultural communications, like the one chosen by us, is limited in its ecological validity. Therefore, it is important that the results of our study are in line with correlational results of previous field studies that have provided evidence for the importance of uncertainty in applied settings. Also, we have tried to maximize the ecological validity of our study by using a scenario that was quite familiar to the participants of our study. The participants were all students at a university with many students from different cultures, and the scenario of meeting a guest from a foreign culture for an afternoon could really happen to them. In addition, we let them experience the high or low predictability in a prediction task to strengthen the perception of predictability which might, in fact, be very strong in a real setting.

6. Conclusions

One of the few approaches to reduce hostility and prejudice between different cultural groups is to support positive contact between members of the different cultural groups (Pettigrew, 1998; Pettigrew & Tropp, 2006), which might be of particular importance in multicultural societies (Piontkowski, Florack, Hölker, & Obdrzalek, 2000) and when discrepancies in cultural views (e.g., Piontkowski, Rohmann, & Florack, 2002) or symbolic or realistic threats (e.g., Florack, Piontkowski, Rohmann, Balzer, & Perzig, 2003) are salient. In line with previous studies (Dumont et al., 2005; Gudykunst, & Nishida, 2001), the present research shows that a context free of anxiety is one important precondition for facilitating contact. In many intercultural contexts, the cultural out-group will be related to at least some degree of uncertainty. Members of one culture might be not sure how to interpret the behavior of the members of the other culture and how to respond adequately (e.g., Florack &

Quadflieg, 2002). Importantly, this lack of predictability seems not to impede contact if anxiety is reduced. Hence, a basic implication of the present research is to focus on anxiety reduction. Low incidental anxiety was shown to buffer the effects of uncertainty on the willingness to interact with members of a foreign culture. Hence, a planned program to install positive contact between members of different cultures within a society has to consider incidental anxiety and uncertainty in concert.

References

- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*, 888-918.
- Banning, K. C. (2003). The effect of the case method on tolerance for ambiguity. *Journal of Management Education*, *27*, 556-567.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. London: Cambridge University Press.
- Berger, C. R. (1987). Communication under uncertainty. In M. E. Roloff & G. R. Muller (Eds.), *Interpersonal process* (pp. 39-62). Newbury Park, CA: Sage Publications.
- Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research*, *1*, 99-112.
- Blascovich, J., & Tomaka, J. (1996). The biopsychosocial model of arousal regulation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 28, pp. 1-51). New York: Academic Press.
- Bless, H., & Schwarz, N. (1999). Sufficient and necessary conditions in dual process models: The case of mood and information processing. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 423-440). New York: Guilford.
- Bodenhausen, G. V. (1993). Emotions, arousal, and stereotypic judgments: A heuristic model of affect and stereotyping. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping* (pp. 13-37). San Diego, CA: Academic Press.
- Bodenhausen, G. V., Mussweiler, T., Gabriel, S., & Moreno, K. N. (2001). Affective influences on stereotyping and intergroup relations. In J. P. Forgas (Ed.), *Handbook of affect and social*

- cognition* (pp. 319-343). Mahwah, NJ: Lawrence Erlbaum Associates.
- Britt, T. W., Boniecki, K. A., Vesio, T. K., Biernat, M., & Brown, L. M. (1996). Intergroup anxiety: A person x situation approach. *Personality and Social Psychology Bulletin*, *22*, 1177-1188.
- Buhr, K., & Dugas, M. J. (2002). The intolerance of uncertainty scale: Psychometric properties of the English version. *Behaviour Research and Therapy*, *40*, 931-945.
- Duronto, P. M., Nishida, T., & Nakayama, S. (2005). Uncertainty, anxiety, and avoidance in communication with strangers. *International Journal of Intercultural Relations*, *29*, 549-560.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117-140.
- Florack, A., Bless, H., & Piontkowski, U. (2003). When do people accept cultural diversity: Affect as determinant. *International Journal of Intercultural Relations*, *27*, 627-640.
- Florack, A., Piontkowski, U., Rohmann, A., Balzer, T., & Perzig, S. (2003). Perceived intergroup threat and attitudes of host community members toward immigrant acculturation. *Journal of Social Psychology*, *143*, 633-648.
- Florack, A., & Quadflieg, C. (2002). Akkulturation und Selbstwert von Eritreern in Deutschland [Acculturation and self-esteem of Eritrean immigrants in Germany]. *Zeitschrift für Sozialpsychologie*, *33*, 157-167.
- Friedland, N., Keinan, G., & Tytium, T. (1999). The effect of psychological stress and tolerance of ambiguity on stereotypic attributions. *Anxiety, Stress, and Coping*, *12*, 397-410.
- Furnham, A. & Ribchester, T. (1995). Tolerance of ambiguity: A review of the concept, its measurement and applications. *Current Psychology*, *14*, 179-199.
- Gao, G., & Gudykunst, W. B. (1990). Uncertainty, anxiety, and adaption. *International Journal of Intercultural Relations*, *14*, 301-317.
- Gudykunst, W. B. (1985). A cross-cultural test of uncertainty reduction theory: Comparisons of acquaintances, friends, and dating relationships in Japan, Korea, and the United States. *Human Communication Research*, *11*, 407-455.
- Gudykunst, W. B. (1988). Uncertainty and anxiety. In Y. Y. Kim & W. B. Gudykunst (Eds.),

- Theories in intercultural communication* (pp. 123-156). Newbury Park, CA: Sage.
- Gudykunst, W. B. (1995). Anxiety/uncertainty management (AUM) theory: Current status. In R. L. Wiseman & J. Koester (Eds.), *Intercultural communication competence* (pp. 8-58). Thousand Oaks, CA: Sage.
- Gudykunst, W. B. (2005). An anxiety/uncertainty management (AUM) theory of effective communication: Making the mesh of the net finer. In W. B. Gudykunst (Ed.), *Theorizing about intercultural communication* (pp. 419-457). Thousand Oaks, CA: Sage.
- Gudykunst, W. B., & Hammer, M. R. (1988). Strangers and hosts: An extension of uncertainty reduction theory to intercultural adaptation. In Y. Y. Kim & W. B. Gudykunst (Eds.), *Cross-cultural adaptation* (pp. 106-139). Newbury Park, CA: Sage.
- Gudykunst, W. B., & Nishida, T. (2001). Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International Journal of Intercultural Relations*, 25, 55-71.
- Gudykunst, W. B., & Shapiro, R. (1996). Communication in everyday interpersonal and intergroup encounters. *International Journal of Intercultural Relations*, 20, 19-45.
- Hertel, G., Neuhof, J., Theuer, T., & Kerr, N. (2000). Mood effects on cooperation in small groups: Does positive mood simply lead to more cooperation? *Cognition and Emotion*, 14, 441-472.
- Hogg, M. A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. *European Review of Social Psychology*, 11, 223-255.
- Hubbert, K. N., Gudykunst, W. B., & Guerrero, S. L. (1999). Intergroup communication over time. *International Journal of Intercultural Relations*, 23, 13-46.
- Isen, A. M. (1984). Toward understanding the role of affect in cognition. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (pp. 174-236). Hillsdale, NJ: Erlbaum.
- James, W. (1890). *The principles of psychology* (Vol. 1). New York: Holt.
- Kagan, J. (1972). Motives and development. *Journal of Personality and Social Psychology*, 22, 51-66.

- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under uncertainty: Heuristics and biases*. New York: Cambridge University Press.
- Kahneman, D., & Tversky, A. (1973). On the psychology of prediction. *Psychological Review*, 80, 237-251.
- Keogh, E., & French, C. C. (1999). The effect of trait anxiety and mood manipulation on the breadth of attention. *European Journal of Personality*, 13, 209-223.
- Kruglanski, A. W., Piero, A., Mannetti, L., & de Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism. *Psychological Review*, 113, 84-100.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "seizing" and "freezing". *Psychological Review*, 103, 263-283.
- Merkin, R. S. (2006). Uncertainty avoidance and facework: A test of the Hofstede model. *International Journal of Intercultural Relations*, 30, 213-228.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751-783.
- Plant, E. A., & Devine, P. G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 29, 790-801.
- Piontkowski, U., Florack, A., Hölker, P., & Obdrzalek, P. (2000). Predicting acculturation attitudes of dominant and non-dominant groups. *International Journal of Intercultural Relations*, 24, 1-26.
- Piontkowski, U., Rohmann, A., & Florack, A. (2002). Concordance of acculturation attitudes and perceived threat. *Group Processes and Intergroup Relations*, 5, 221.
- Rohmann, A., Florack, A., & Piontkowski, U. (2006). The role of discrepant acculturation attitudes in perceived threat: An analysis of host and immigrant attitudes in Germany. *International Journal of Intercultural Relations*, 30, 683-702.
- Rosen, J. B., & Schulkin, J. (1998). From normal fear to pathological anxiety. *Psychological Review*,

105, 325-350.

- Schwarz, N., & Bless, H. (1991). Happy and mindless, but sad and smart? The impact of affective states on analytic reasoning. In J. P. Forgas (Ed.), *Emotion & social judgments* (pp. 55-71). Oxford: Pergamon Press.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, *45*, 513-523.
- Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology*, *62*, 434-446.
- Sorrentino, R. M., Nezlek, J. B., Yasunaga, S., Kouhara, S., Otsubo, Y., & Shuper, P. (2008). Uncertainty orientation and affective experiences. *Journal of Cross-Cultural Psychology*, *39*, 129-146.
- Sorrentino, R. M., & Roney, C. J. R. (2000). *The uncertain mind: Individual differences in facing the unknown*. Philadelphia: Psychology Press.
- Stephan, W. G., Boniecki, K. A., Ybarra, O., Bettencourt, A., Ervin, K. S., Jackson, L. A., McNatt, P. S., & Renfro, C. L. (2002). Racial attitudes of Blacks and Whites: An integrated threat theory analysis. *Personality and Social Psychology Bulletin*, *28*, 1242-1254.
- Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and intercultural attitudes. *Journal of Cross-Cultural Psychology*, *31*, 240-249.
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, *55*, 729-743.
- Stephan, W. G., Stephan, C. W., & Gudykunst, W. B. (1999). Anxiety in intergroup relations: A comparison of anxiety/uncertainty management theory and integrated threat theory. *International Journal of Intercultural Relations*, *23*, 613-628.
- Turner, J. H. (1988). *A theory of social interaction*. Palo Alto, CA: Stanford University Press.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*,

185, 1124-1131.

- Van den Bos, K. (2001). Uncertainty management: The influence of uncertainty salience on reactions to perceived procedural fairness. *Journal of Personality and Social Psychology, 80*, 931-941.
- Van den Bos, K., & Lind, E. A. (2002). Uncertainty management by means of fairness judgments. In M. P. Zanna (Ed.), *advances in experimental social psychology* (Vol. 34, pp. 1-60). New York: Academic Press.
- Van der Zee, K., Van Oudenhoven, J. P., & De Grijjs, E. (2004). Personality, threat and cognitive and emotional reactions to stressful intercultural situations. *Journal of Personality, 72*, 1069-1096.
- Volz, K. G., Schubotz, R. I., & von Cramon, D. Y. (2005). Variants of uncertainty in decision-making and their neural correlates. *Brain Research Bulletin, 67*, 403-412.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.
- Wilson, T. D., Centerbar, D. B., Kermer, D. A., & Gilbert, D. T. (2005). The pleasures of uncertainty: Prolonging positive moods in ways people do not anticipate. *Journal of Personality and Social Psychology, 88*, 5-21.

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Table 1

Standardized regression coefficients for the prediction of perceived predictability

	β	t	p
Predictability	0.617	6.700	< 0.0001
Incidental anxiety	0.038	0.407	0.686
Integral Anxiety	-0.087	-0.923	0.359
Predictability \times Incidental Anxiety	0.007	0.069	0.945
Predictability \times Integral Anxiety	0.088	0.950	0.345
Incidental Anxiety \times Integral Anxiety	0.086	0.932	0.355
Sex	-0.095	-1.003	0.319
Age	0.030	0.302	0.763

Table 2:

Standardized regression coefficients for the prediction of willingness to interact

	β	t	p
Predictability	0.312	2.864	0.006
Incidental anxiety	0.012	0.106	0.916
Integral Anxiety	0.034	0.303	0.763
Predictability \times Incidental Anxiety	0.242	2.178	0.033
Predictability \times Integral Anxiety	0.136	1.235	0.221
Incidental Anxiety \times Integral Anxiety	0.021	0.195	0.846
Sex	-0.081	-0.725	0.471
Age	0.142	1.212	0.230

Figure Captions

Figure 1. The willingness to interact with the potential interaction partner as a function of predictability and incidental anxiety.

Figure

