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# Doctoraatsprojecten

**Authoritarianism, acculturation, and intergroup processes in a culturally diverse society**

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**Authoritarianism, Acculturation, and Intergroup Processes in a Culturally Diverse Society**

**Keywords**: Intergroup Relations- Intergroup-Relations Approach - Acculturation Psychology -Right-Wing Authoritarianism- Social Dominance Orientation

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My research project deals with possible antecedents of positive and negative intergroup attitudes between different cultural groups in Belgium. Different components of intergroup attitudes will be investigated: An evaluative (negative attitudes towards immigrants, intergroup bias), an affective (feelings of being threatened by the presence of immigrants in Belgium), and a behavioral intention component (discrimination and positive discrimination). In order to obtain a more complete view on intergroup outcomes, insights from intergroup-relations approach, acculturation psychology and individual-differences approach will be combined in 4 studies. The first two studies deal with an intergroup-relations approach of acculturation in both the majority (Study1) and the minority group (Study 2). Next, an attempt to confront intergroup-relational approach with an inter-individual difference approach is made in a between-subject (Study 3) and a within-subject experimental design (Study 4). Preliminary results of Study 1 and 3 will be discussed in more detail in the present document.

Study 1 tests the interactive acculturation model (IAM), which implements the intergroup-relations approach in the study of acculturation. IAM accomplishes this by granting perceived fit in acculturation attitudes a crucial role in the prediction of intergroup outcomes. In this model, rather than merely conceptualizing fit as deviation of acculturation orientations, the specific content of fit is taken under investigation. Based on IAM, three hypotheses were derived. First, it was hypothesized that both preferred and perceived acculturation orientations have to be taken into account when predicting intergroup outcomes (Hypothesis 1). Second, it was proposed that cases of misfit can be divided in positive and negative discrepancies. More specifically, it was expected that perceiving negative discrepancies is related with more negative intergroup attitudes than agreement, which in turn is related with more negative intergroup attitudes than positive discrepancies (Hypothesis 2). Third, effects of agreement were inspected in more detail by looking at their content. Based on predictions made in IAM, it was expected that congruence on high levels of adoption will result in the most positive intergroup attitudes (Hypothesis 3). Techniques that have been employed in past research provide an insufficient test of IAM. Therefore, polynomial regression analysis was used in the present study as an alternative method to investigate the effects of fit between preferred acculturation orientations (preferred orientation) of members of the host society and their perception of minority group acculturation orientations (perceived orientation). Hypothesis 1 was confirmed. Regarding the Hypothesis 2, it was found that negative discrepancies were indeed related with more negative intergroup outcomes than agreement. However, the effect of positive discrepancies changed dramatically depending on the dependent variable and the acculturation dimension under investigation. Hypothesis 3 was not confirmed: The most positive agreement effects were found when there was agreement on high levels of maintenance in combination with moderate levels of host culture adoption. In order to get a more complete picture on the nature of intergroup relation between different cultural groups in Belgium, an analogous study (Study 2) will be conducted in several minority groups.

In Study 3, antecedents of intergroup outcomes proposed by the intergroup-relations approach and the inter-individual differences approach were integrated in a single research design. For this purpose, after having administered ingroup identification, and the stable inter-individual difference variables of Right wing authoritarianism (RWA) and of social dominance orientation (SDO), feelings of outgroup threat were experimentally manipulated. In hypothesis 1, 2, and 3, main effects of respectively RWA, SDO and Flemish identification were expected. In Hypothesis 3, an interaction between feelings of threat, RWA, and ingroup identification was expected. Hypothesis 4 proposes a similar interaction between feelings of threat, SDO, and ingroup identification. In Hypothesis 5, generalization toward other minority groups that were not mentioned in the experimental manipulation was expected for the inter-individual main effects. In contrast, in hypothesis 6, no generalization was expected for the situational variable. Moderated multiple regression analysis was computed to test the interaction and generalization hypotheses. In Hypothesis 7 and 8, it was expected that if Flemish identification has a main effect on intergroup outcomes for both the Polish and Moroccan outgroup respectively, this relations will be mediated by an ethnic representation of Flemish identity. For this purpose, mediation analyses were performed. Hypothesis 1, 2 and 3 were confirmed. In contrast, Hypothesis 3 and 4 were not confirmed. Although main effects were found for RWA, SDO, ingroup identification, and feelings of threat, no significant or meaningful interactions were observed between these variables. Hypothesis 5 and 6 were confirmed and Hypotheses 7 and 8 were partially confirmed. The positive relation of Flemish identification and negative intergroup outcomes was partially mediated by an ethnic representation of Flemish identity. It should be noted that for statistical reasons, finding strong, reliable, and replicable effect sizes for joint interactions is a very difficult task. Therefore, I conducted, in Study 4, a within subject experimental design to obtain a more thorough test of the interaction hypothesis.

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# Authoritarianism, Acculturation, and Intergroup Processes in a Culturally Diverse Society

## Introduction

My research project deals with possible antecedents of positive and negative intergroup attitudes between different cultural groups in Belgium. Different components of intergroup attitudes will be investigated: An evaluative (negative attitudes towards immigrants, intergroup bias), an affective (feelings of being threatened by the presence of immigrants in Belgium), and a behavioral intention component (discrimination and positive discrimination). The intergroup-relations approach (i.e., Social identity theory, Self categorization theory, and Realistic Conflict Theory) was chosen as the main theoretical framework. The starting point of the intergroup-relations approach is that humans spontaneously categorize people into groups. Moreover, it is assumed that when people identify with a group, they will engage in intergroup comparison hoping for a positive outcome for the ingroup. When a group that is considered to be important for the self is perceived to be under threat by another group, negative intergroup attitudes can function as a possible strategy to reestablish the positive status of the ingroup.

Looking from the intergroup-relations approach, we will draw on other relevant streams of psychological research in order to get a more complete view on intergroup attitudes. In a first study, a perspective of acculturation psychology will be tested. The starting point of acculturation psychology- which can be located within cross-cultural psychology- is the contact of different cultures in a migration context. The process of psychological change that is instigated by this contact is called acculturation. It is argued that minority groups as well as the host majority group have to develop strategies to deal with these changes. While most acculturation research focuses on the individual level of interpersonal contact and personal adjustment to change, there is a recent resurge of interest in the role of group processes in cross-cultural encounters. At the group level, the Interactive Acculturation Model predicts that some combinations of minority and majority acculturation attitudes will be more conducive to positive intergroup relations than others. This model will be tested in study 1 from a majority perspective and in study 2 from a minority perspective.

Study 3 and 4 attempt to integrate the intergroup-relations and individual-differences approaches on intergroup attitudes. The starting point of the inter-individual difference approach is that individuals differ in a stable manner in the social attitudes that they adhere to. These social attitudes are believed to be predictive for the nature of intergroup attitudes. In these studies, situational and individual-differences variables will be integrated in a single research design (a between-subject design in study 3 and a within-subject design in study 4).

## Study 1: Empirical test of IAM

### 1. Introduction

All over the world one can notice an enormous flow of migration. Today there are about 175 million immigrants and refugees worldwide (Suárez-Orozco, 2004). When different cultures meet, traditional cultural patterns will inevitably change. This process of change that occurs when two cultural groups come into first-hand contact over an extended period of time is called acculturation (Redfield, Linton and Herskovits, 1936). Living in a plural society forces all members of both minority and majority groups to have norms about how these changes have to occur, called acculturation attitudes. In some cases the acculturation attitudes of the minority and majority groups can be concordant and harmonious, while in other cases misfit between the

minority and majority acculturation attitudes occurs. When there is misfit in acculturation attitudes, this can lead to a communication breakdown between the involved groups, which in turn can lead to problematic or conflictual intergroup relations. This study will focus on the perspective of majority group members and will look at the social psychological consequences of the degree of fit majorities perceive between their preferred acculturation attitudes (preferred attitude) and the acculturation attitudes they perceive in large and visible immigrant groups (perceived attitude).

The idea of relative fit in acculturation attitudes is developed in the Interactive Acculturation Model (IAM, Bourhis, Moise, Perreault, and Senecal, 1997). The starting point is that acculturation attitudes of both host and minority groups are important to understand intergroup attitudes (Berry, Poortinga, Segall, and Dasen, 2002). Building on the bidimensional acculturation model of Bourhis and colleagues (1997), acculturation orientations of immigrants are determined by combining the answers on two basic issues (acculturation dimensions) regarding one's preferences for the maintenance of the culture of origin (maintenance dimension) and for the adoption of the host culture (adoption dimension). The combination of the two acculturation dimensions leads to a classification system with four acculturation orientations. Assimilation occurs when immigrants' desire for maintenance is low, while the desire for adoption is high. Integration occurs when immigrants want a high level of adoption to the host culture, without losing the own ethnic cultural roots. Separation occurs when immigrants don't want to adopt the host society's culture in combination with maintenance of the own heritage culture. Marginalization is characterized by the loss of cultural and psychological relations/connectedness with the culture and the members of both the majority and the minority group. Turning to the perspective of the majority group, the first dimension refers to the extent that a person approves that immigrants maintain the culture of origin (maintenance dimension). The second dimension deals with the extent to which one demands that immigrants adopt the host culture (adoption dimension). The combination of the responses on these dimensions results in a similar model with four acculturation orientations. Assimilative orientations occur when members of the host society want minorities to relinquish their own original culture and to seek adoption of the host culture. Integration occurs when members of the host society want minorities to adapt to the host society, without losing the own ethnic cultural roots. Segregation orientations occur when members of the host society want immigrants to maintain the own culture, without adoption of the host society's culture. Exclusionist orientations occur when members of the host society want immigrants to lose cultural and psychological relations/connectedness with members of both the majority and the minority group.

Following the recommendations of Rudmin and Ahmadzadeh (2001), in the present study, preferred attitudes of the majority group members were obtained for the maintenance and the adoption dimension separately. Because it is emphasized in IAM (Bourhis et al., 1997) that the course of the acculturation process and resulting intergroup attitudes can be more fully understood when the relative fit between acculturation orientations of minority and majority group members is taken into consideration, the majority's perception of minority's acculturation attitudes (perceived attitudes) were also obtained. Acculturation is a dynamic process in which the interacting cultural groups mutually influence each other. Individuals' attitudes and behaviors toward an outgroup are not only driven by the own preferred acculturation orientation, but are also determined by the acculturation orientations that are displayed in the other group. In IAM, intergroup outcomes are expected to be consensual, problematic, or conflictual, depending on the original levels of the own and outgroup acculturation

orientations and their dynamic interplay. Most positive relational outcomes are expected when both groups subscribe to integration or assimilation attitudes[1]. Problematic and conflictual outcomes are expected when there is misfit between the acculturation orientations of both groups or when the original levels of the preferred acculturation orientations have a dismissive content towards the outgroup. Finally, in relation to this approach, it has been argued that relative fit must be operationalized between the own preferred and the perceived outgroup acculturation orientation rather than between the preferred and the actual outgroup acculturation orientations (Van Oudenhove, Prins, & Buunk, 1998; Zagefka & Brown, 2002). After all, it can be argued that in social psychological processes perceived differences will play a greater role than actual differences.

In past research, several methods were proposed to analyse relative fit (Roccas, Horenczyk, & Schwartz, 2000; Piontkowski, Rohmann, & Florack, 2002; Barrette, Bourhis, Personnaz, & Personnaz, 2004; Zagefka & Brown, 2002; Kurman, Eshel, and Sbeit, 2005). Analysis of the effects of relative fit of acculturation dimensions can roughly be divided in tests of the IAM framework (e.g., Piontkowski et al., 2002) and in the use of absolute difference scores (e.g., Zagefka & Brown, 2002). In the former, the proposed categorization of the specific combinations of preferred and perceived attitudes into consensual, problematic, and conflictual relational outcomes is tested by means of ANOVA. In the latter, the absolute difference between the own preferred and the perceived attitudes is calculated and is subsequently used as a predictor of intergroup attitudes in regression analysis. Zagefka & Brown (2002) compared these two methods and concluded that the use of an absolute difference score is methodologically and theoretically better than the IAM procedure. Absolute difference scores were shown to have more predictive power. In addition, the relations that were proposed between levels of fit and consensual, problematic and conflictual outcomes in the IAM framework were not well supported (Zagefka & Brown, 2002).

In the Zagefka and Brown (2002) study, the effects of relative fit on several acculturation outcomes were obtained by entering the absolute differences between the preferred and the perceived attitudes for each of the two acculturation dimensions into a regression analysis. It was observed that the more the difference scores approached zero – perceived agreement - the more positive the intergroup attitudes were. However, by taking the absolute value of the difference scores, abstraction is made of the direction of the discrepancy (Meeus and Vanbeselaere, 2006): It is assumed that all deviations from the own preferred acculturation orientation will be related with negative acculturation attitudes. In contrast to this, one can well imagine that there exist both positive and negative discrepancies. A negative discrepancy will be observed when a host majority member perceives that an immigrant group displays less effort than is required by the respondent's personal norm. On the other hand, positive discrepancies will be observed when the respondent perceives that the immigrants display more effort than he/she expects from them. On the maintenance domain, a negative discrepancy means that the respondent perceives that immigrants maintain their own culture to a greater extent than the respondent wants them to, while a positive discrepancy implies that the respondent perceives that immigrants adhere less to their own culture than what he/she prefers. On the adoption domain, a negative discrepancy implies that the respondent perceives that immigrants adopt the Flemish culture less than the respondent wants them to, while a positive discrepancy means that that immigrants adopt the host culture more than his/her personal norm requires. It can be expected that negative discrepancies will be related to negative intergroup attitudes, while positive

[1] Also agreement on individualization is expected to have consensual relational outcomes. Individualization is an acculturation orientation that is unique for this model and is not taken into consideration in this study.

discrepancies can be expected to be related to more positive intergroup attitudes[2]. In response to this proposed distinction between positive and negative discrepancies, one could argue that algebraic difference scores should be used instead of the absolute difference, because opposite effects for positive and negative discrepancies are assumed. However, several other theoretical and methodological problems are related to the use of algebraic difference scores as a measure for relative fit (Edwards, 2001).

First, in IAM it is expected that both the preferred and the perceived attitudes play a role in determining intergroup attitudes. However, difference scores suffer from the problem of multiple interpretations: A significant effect of a difference score can indicate the expected additive effects, but it can also be the result of confounding effects of the involved components. An example of confounding effects is when only the preferred attitude has a significant effect and has in addition substantially greater variance than the perceived attitude. In this case, the difference score between those two components will have a significant effect that stems from the preferred acculturation orientation only. Since the effect of a particular difference score has no unique interpretation, it offers no conclusive evidence of the expected additive effects of both preferred and perceived attitudes (Edwards, 2002). To remedy this problem, the analysis of relative fit between preferred and perceived attitudes should test whether both components remain significant predictors when looking at their joint effect on intergroup attitudes. Second, algebraic difference scores impose very specific constraints on the data (Edwards, 1991), because they assume opposite effects of equal size for positive and negative discrepancies. Thus, it is assumed that when negative discrepancies (values smaller than zero) become larger, intergroup attitudes become more negative; and that increasing positive discrepancies (values greater than zero) are expected to be related with more positive intergroup attitudes. Moreover, the effects of positive and negative discrepancies are assumed to have equal strength. However, these assumptions of opposite linear effects of equal strength have not been tested in past relative fit research. Findings contradicting the assumptions of equal strength stem from social cognitive research concerning positive/negative asymmetry effects (Peeters & Czapinski, 1990). The positive/negative asymmetry effect implies that negative information has greater impact on attitude formation than positive information, because the former attracts more attention and is processed more deeply than the latter (Peeters & Czapinski, 1990). Hence, analysis of relative fit between preferred and perceived attitudes should differentiate between positive and negative discrepancies, without constraining the data to opposite effects of equal size. Third, when using difference scores it is assumed that the effects of agreement do not depend on the original scores for preferred and perceived attitudes. However, in the IAM model, it is clearly indicated that the effects of agreement differ as a function of the specific acculturation orientation composing the agreement. More specifically, it is expected that agreement on integration and assimilation orientations are related with the most positive intergroup attitudes. Hence, the analysis of relative fit between preferred and perceived attitudes should be able to differentiate between different effects of agreement as a function of the level of the preferred and perceived attitudes.

To address the shortcomings of difference scores, in the present study, for the analysis of relative fit between preferred and perceived attitudes, we apply Edwards and Parry's (1993) method of estimating curves of agreement and disagreement on the basis of polynomial regression analysis. Edwards and Parry (1993) argue

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[2] In Meeus & Vanbeselaere (2006), correlations between misfit between preferred and perceived acculturation orientations of majority group members were calculated for positive and negative discrepancies separately by splitting algebraic difference scores at the zero point. In general positive correlations were found between misfit and negative attitudes for negative discrepancies, while zero and even negative correlations were found for positive discrepancies. In the present study a more rigorous method will be presented to describe the differential effects of positive and negative discrepancies.

that the assumptions made in difference scores can be tested in a polynomial regression analysis in which the original components, their squared terms and the interaction between the original scores are included. Further, they draw on response surface methodology (Box & Draper, 1987 in Edwards & Parry, 1993), to offer a method permitting an accurate test and interpretation of relevant features of the three dimensional surfaces that correspond with these polynomial regression equations. More specifically, distinct regression lines are derived for the lines of perfect agreement and for perfect disagreement (see appendix). In this way, effects for agreement and disagreement are not restricted to linear effects, but can be extended to multiplicative (interaction) and non linear terms (curvilinear effects). This method has been successfully used in organizational research to overcome problems related with person-organization fit, promised and delivered inducements fit and self-other agreement studies (Lambert, Edwards, & Cable, 2003; Atwater, Ostroff, Yammarino, & Fleenor, 1998). Because the encountered problems in organizational research are similar to problems related to relative fit between preferred and perceived acculturation attitudes, we apply this method to the theoretical framework of acculturation psychology. In this way, we can address the three abovementioned problems related to difference scores. First, because this method has the advantage of retaining the conceptual integrity of the separate components, it can be determined whether both components play a significant role in the prediction of intergroup attitudes when looking at their joint effects. Following IAM, we expect that both preferred and perceived attitudes (either the original score or their squared terms) or the interaction between them are significant in the polynomial regression equation. Second, to account for the expected differential effects of positive and negative discrepancies between preferred and perceived attitudes on intergroup attitudes, the line of perfect disagreement has to be inspected. In this way, positive and negative discrepancy effects are no longer restricted to opposite effects of equal strength. Moreover, the effects are no longer restricted to linear effects and can now display curvature. In this regard, it is expected that negative discrepancies will be related with more negative intergroup outcomes than agreement, which in turn will be related with more negative intergroup outcomes than positive discrepancies. However, following the positive negative asymmetry, it can be expected that positive discrepancies will have smaller effects than negative discrepancies. This is reflected in a curvilinear trend in which negative discrepancies have strong effects whereas the effects of positive discrepancies will be much smaller. Third, to account for the differential effects of agreement proposed in IAM, the line of perfect agreement has to be inspected. Contrary to difference scores, assuming equally strong agreement effects for all four acculturation orientations, it can be inspected whether the line of perfect agreements displays linear and/or curvilinear effects. Following IAM, in which agreement in integration (high maintenance and high adoption) and in assimilation (low maintenance and high adoption) are related with the most positive intergroup attitudes, we expect a positive linear effect for agreement on the adoption dimension. In other words, we expect that intergroup attitudes are more positive when there is agreement on high levels of adoption than when there is agreement on low levels of adoption. Concerning effect of agreement on the maintenance dimension, no clear predictions can be made, because IAM predicts positive intergroup attitudes for both high levels and low levels of cultural maintenance.

In the present study, 297 Flemish majority group members participated. As relevant outgroups the Turkish and the Moroccan immigrants were chosen because they form large and visible minority in Flanders and because these groups recently received a lot of negative attention as a result of events like 9/11. Moreover, past research on intergroup relations between the Flemish majority group and the Turkish and the Moroccan immigrant groups in Flanders revealed that negative discrepancies of acculturation attitudes exist between these

groups (Phalet & Swyngedouw, 2004). Participants were asked to individually fill in a questionnaire that assessed the preferred attitude towards cultural maintenance by Turkish and Moroccan immigrants in Flanders, the perceived level of cultural maintenance by Turkish and Moroccan immigrant group in Flanders, the preferred attitude towards host culture adoption by Turkish and Moroccan immigrants in Flanders, and the perceived level of host culture adoption by Turkish and Moroccan immigrant groups in Flanders. After this, different outcome variables were administered to capture the different components of intergroup attitudes. More specifically, respondents had to indicate to what extent they felt threatened by the presence of Turkish and Moroccan immigrants in Flanders, how negative their attitude was towards these groups, and the extent to which they think that the Flemish group is negatively perceived by Turkish and Moroccan immigrants (metaperceptions). All measures used in the present study were administered in Dutch, the participants' mother tongue. Items were scored on 5-point Likert scales, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Following IAM, the present study investigates the effects of relative fit of acculturation dimensions on intergroup attitudes. In past research, measures of fit were marked by several methodological and statistical problems. In order to solve these obstacles, polynomial regression was used. The following hypotheses are proposed.

**Joint Effect Hypothesis (Hypothesis 1)**: It is expected that both preferred and perceived acculturation play a significant role in the prediction of intergroup attitudes. Hence, we expect that both components (either the original score or the squared terms) or at least the interaction between them is significant.

**Disagreement Effect Hypothesis (Hypothesis 2)**: It is expected that negative discrepancies will be related with more negative intergroup outcomes than agreement, which in turn will be related with more negative intergroup outcomes than positive discrepancies. However, it can be expected that positive discrepancies will have smaller effects than negative discrepancies. This is reflected in a curvilinear trend in which negative discrepancies have strong effects, whereas the effects of positive discrepancies will be much smaller.

**Agreement Effect Hypothesis (Hypothesis 3)**: It is expected that agreement on the adoption dimension has a negative linear effect. More specifically, it can be expected that agreement on high levels of adoption (which occurs in both integration and assimilation orientation) will be related to the least negative intergroup attitudes. No clear predictions were made for agreement on the maintenance dimension.

## 2. Results

### 2.1. Descriptives

In line with earlier findings, negative discrepancies could be observed for both the maintenance and the adoption dimension. Concerning the maintenance dimension, respondents clearly preferred less cultural maintenance (Mean= 2.7266) than they perceived in the Turkish and Moroccan immigrant groups (Mean= 3.6955, t =-12.998, $p$<.0001). For the adoption dimension, respondents preferred more adoption of the host culture (Mean= 3.7183) than they perceived in the Turkish and Moroccan immigrant groups (Mean= 2.3579, t =18.173, $p$<.0001). On the maintenance dimension, preferred and perceived attitudes were not correlated (r= .067, $p$ = .248), while on the adoption dimension, a significant negative correlation existed (r= -.3, $p$ < .0001). Mean scores for the dependent variables feelings of threat, negative attitudes towards the Turkish and Moroccan immigrant group and metaperceptions were respectively 3.43 (SD=1.14), 3.17 (SD=1.23), and 3.58 (SD=.99)

## 2.2. Test of the hypotheses

Polynomial regression is a method to determine the effects of degree of fit between two components. Following Edwards (2001) this is done by regressing the acculturation outcomes for both maintenance and adoption dimension, after centering all variables -both independent and dependent- at the same values (from -2 to +2), based on the midpoint of their scales. The separate components preferred and perceived attitudes (main effects), the squared components and the interaction between these components (higher order effects) were entered. For the maintenance dimension, the regression equation contained the preferred and the perceived level for cultural maintenance, the squared preferred and perceived maintenance orientation and the interaction between the original preferred and perceived level for cultural maintenance. Parallel to this, for the adoption dimension, the regression equation contained the preferred and the perceived level for host culture adoption, the squared preferred and perceived adoption orientation and the interaction between the original preferred and perceived level for host culture adoption. These polynomial regression equations can be visualized in a 3D contour plots with 3 axes: the original preferred score (PR), the original perceived score (PE) and the values of the outcome variables (O). Unique to Edwards and Parry's (1993) method is that it offers a flexible tool to estimate and interpret the effects of relative fit between two components. This is done by distinguishing a line of perfect disagreement and a line for perfect agreement, for which the regression equations can easily be derived. The function of both lines can be described by determining their slope and curvature. Moreover their function can be visually inspected in the related surface plots. Results of this series of polynomial regression analyses examining the effects of preferred and perceived maintenance orientations are presented in Tables 1-3. The related surface plots can be found in Figures 1-3. Results of hierarchical regression analyses examining the effects of preferred and perceived adoption orientations are presented in Tables 4-6. The related surface plots can be found in Figures 4-6. For all dependent variables, no data were observed for extreme positive discrepancies. Hence, no reliable conclusions concerning the perception of extreme positive discrepancies can be drawn. For extra information on the estimation of agreement and disagreement curves from polynomial regression analysis, consult Appendix.

### 2.2.1. Joint Effects Hypothesis

Hypothesis 1, predicting effects for both preferred and perceived attitudes on intergroup attitudes, was tested by inspection of the level of significance of the regression components in Table 1-6. Hypothesis 1 was confirmed because, for all regression equations, both the preferred and the perceived attitudes (both the original and the squared terms) were significant predictors. Hence, for the prediction of intergroup attitudes of host majority members, both the preferred and the perceived attitudes have to taken into account.

### 2.2.2. Disagreement effects Hypothesis

Hypothesis 2 predicted that negative discrepancies result in more negative intergroup outcomes than agreement, which in turn results in more negative intergroup outcomes than positive discrepancies. In addition, a positive/negative asymmetry effect was expected to occur, implying that positive discrepancies have weaker effects than negative discrepancies. This is reflected by a curvilinear trend at the line of perfect disagreement. For the adoption dimension, the predicted curvilinear trend is observed when the line of perfect disagreement is characterized by a positive slope and a positive curvature, because negative discrepancies are observed when the

preferred level of adoption exceeds the perceived level. For the maintenance dimension, the predicted curvilinear trend is observed when the line of perfect disagreement is characterized by a negative slope and a positive curvature, because negative discrepancies are observed when the preferred level for maintenance is smaller than the perceived level.

#### 2.2.2.1. Adoption dimension

Based on the level of $a_3$ and $a_4$ (see Tables 4, 5, and 6) representing respectively slope and curvature of the line of perfect disagreement, we can conclude that hypothesis 2 on the adoption dimension receives only partial support. This can also be seen by visual inspection of Figures 4, 5, and 6. It becomes clear that the distinction between positive and negative discrepancies based direction of misfit is useful when predicting intergroup outcomes at the adoption. For all dependent variables, negative discrepancies in host culture adoption led to more negative intergroup outcomes than agreement, which in turn led to more negative intergroup attitudes than positive discrepancies. In contrast, the positive/negative asymmetry effect did not always play a role. When predicting feelings of threat, the positive/negative asymmetry effect was observed, because the negative effects of negative discrepancies were larger than the positive effects of positive discrepancies. This is reflected by the significant positive parameters for slope and curvature. Feelings of threat increased at an exponentional rate when negative discrepancies became larger. In contrast, for negative attitudes towards the Turkish and Moroccan immigrants and metaperception, the positive negative asymmetry was not found. Both variables had a significant positive slope, but no significant curvature: positive and negative discrepancies appeared to have equal opposite effects.

#### 2.2.2.2. Maintenance dimension

Based on the level of $a_3$ and $a_4$ (see Tables 1, 2, and 3) representing respectively slope and curvature of the line of disagreement, we can conclude that hypothesis 2 on the maintenance dimension receives only partial support. This can also be seen by visual inspection of Figures 1, 2, and 3. The distinction between positive and negative discrepancies did not appear to be accurate when predicting metaperceptions. For metaperception, there was no significant slope and a significant positive curvature for the line of perfect disagreement. This implies that negative discrepancies on the maintenance dimension did result in more negative metaperceptions than agreement. Positive discrepancies, however, were also related with more negative metaperceptions compared to conditions of agreement. Thus, for metaperception, perceived deviance from the personal norm as such led to more negative intergroup attitudes. In contrast, the distinction between positive and negative discrepancies was useful for negative attitudes and feelings of threat. For both variables, negative discrepancies were related with more negative intergroup attitudes than agreement, which in turn was related with more negative intergroup attitudes than positive discrepancies. For negative attitudes, there was a significant negative slope and no significant curvature. Thus, there was no positive/negative asymmetry effect for negative attitudes, because positive and negative discrepancies had opposite effects of equal strength. Hypothesis 2 was confirmed for feelings of threat. For feelings of threat, there was a significant negative slope and a significant positive curvature. Negative discrepancies led to more feelings of threat than agreement, which in turn led to more feelings of threat than positive discrepancies. In addition, the positive effect of positive discrepancies on feelings

of threat was smaller than the negative effects of negative discrepancies, because negative intergroup attitudes increased at exponentional rate when negative discrepancies became larger.

### 2.2.3. Agreement effects

Hypothesis 3 predicted that the effects of congruence will depend on the original levels of its components. For adoption, it was expected that the line of perfect agreement displays a negative linear function: Agreement at high levels of adoption are expected to be related with lower levels of negative intergroup outcomes than agreement at low levels of adoption. No clear predictions could be made for agreement on the maintenance dimension.

#### 2.2.3.1. Adoption dimension

Based on the level of $a_1$ and $a_2$ (see Tables 4, 5, and 6) representing respectively slope and curvature of the line of disagreement, we can conclude that hypothesis 3 was not supported for the adoption dimension. For feelings of threat significant positive parameters for slope and curvature were found, reflecting a curvilinear trend. This means that feelings of threat increased at an exponentional rate when agreement occurred at high levels of preferred and perceived adoption. In this respect it has to be mentioned that visual inspection of the surface plot indicates that there was also a small increase in threat when there was agreement at low levels of preferred and perceived adoption. For negative attitudes and metaperception, there was no significant slope and a significant positive curvature, which is reflected in a convex function. This means that agreement on high levels of preferred and perceived adoption was, like low levels, related with more negative intergroup attitudes than agreement on moderate levels. In general, hypothesis 3 was not confirmed. In contrast, agreement on high levels of preferred and perceived host culture adoption was related to more feelings of threat. Rather, agreement on moderate levels of preferred and perceived adoption led to the most positive intergroup attitudes.

#### 2.2.3.2. Maintenance dimension

No clear predictions were made for the effects of agreement on the maintenance domain. Based on the level of $a_1$ and $a_2$ (see Tables 1, 2, and 3) representing respectively slope and curvature of the line of disagreement, we can make exploratory conclusions. These are supported by the visual representation of the line of perfect agreement in Figures 1, 2, and 3. For negative attitudes and metaperceptions, there were a significant negative slope and no significant curvature. This means that, for both dependent variables, agreement on low levels of preferred and perceived maintenance was related with more positive intergroup outcomes than agreement on high levels of cultural maintenance. For feelings of threat, there were a marginal (supported by visual inspection) significant negative slope and a significant positive curvature, which is reflected in a curvilinear trend. This means that agreement on low levels of maintenance was related with more feelings of threat than agreement on high levels, but that the decrease was stronger at high levels of agreement. In general, we can conclude that high levels of agreement on preferred and perceived maintenance was related with the most positive intergroup attitudes.

## 3. Discussion

In the present study the effects of relative fit between preferred and perceived acculturation orientations

on intergroup outcomes are investigated in a Flemish majority group. The idea that relative fit is an important predictor of intergroup relations is developed in IAM (Bourhis et al., 1997). This is a theoretical model in which three central issues can be delineated. First, it is assumed that the quality of intergroup relations can be more fully understood when both minority and majority acculturation attitudes are taken into account. Hence, in the present study, it was assumed that both preferred and perceived attitudes (either the original or the squared terms) or their interaction will display significant effects on intergroup relations (joint effect hypothesis). Second, it was assumed that the quality of intergroup relations depends on the perceived fit in between the own preferred acculturation orientations and the acculturation orientations that are perceived in the minority group. Moreover, disagreement is not simply conceptualized as deviation from the personal norm (cf. absolute difference scores), but it is argued that the nature of this disagreement has to be taken into account by differentiating between positive and negative discrepancies. For host majority members, a negative discrepancy means that the immigrant group is perceived to display less effort than is required by the personal norm. On the other hand, a positive discrepancy occurs when a member of the majority group perceives that immigrants display more effort than is expected from them. In line with this, in the present study, it is expected that negative discrepancies will lead to more negative intergroup outcomes than agreement, which in turn will lead to more negative intergroup outcomes than positive discrepancies. In addition, because positive/negative asymmetry bias effects are consistently found in social cognition research, it was expected that negative discrepancies will have stronger effects than positive discrepancies (disagreement hypothesis). Third, in IAM, agreement is not merely conceptualized as the perception of equal acculturation orientations in both groups. Rather, a content driven distinction is made, based on the original levels of the acculturation orientations. More specifically, it is expected that only agreement in integration and assimilation orientation, will have beneficial congruence effects. Hence, it can be expected that agreement on high levels of preferred and perceived adoption (as is the case in both integration and assimilation orientations) will lead to more positive intergroup outcomes than agreement on low levels. Concerning effects of agreement on the maintenance dimension, no clear predictions could be made, because IAM predicts positive intergroup attitudes for agreement at both high levels and low levels of preferred and perceived maintenance. To test these assumptions, polynomial regression analysis was used in the present study.

*Joint effect hypothesis.*The first hypothesis was confirmed. For all dependent variables, both the preferred and the perceived attitudes were significant predictors of intergroup attitudes. Hence, intergroup attitudes can be more fully understood when both perspectives are taken into account.

*Disagreement hypothesis.*Although the second hypothesis was only partly confirmed, it becomes clear that the distinction between positive and negative discrepancies is useful. Except for metaperception on the maintenance domain, negative discrepancies leaded to more negative intergroup outcomes than agreement. In contrast, the effects of positive discrepancies changed dramatically depending on which component of intergroup attitudes that was taken into account. For the evaluative intergroup attitudes, negative attitudes towards the minority group, positive discrepancies led to more positive intergroup attitudes than negative discrepancies. However, no positive/negative asymmetry effects were found: For both the maintenance and the adoption dimension, positive and negative discrepancies had opposite effects of equal strength. For the affective intergroup attitudes, feelings of threat, positive discrepancies led also to more positive intergroup attitudes than negative discrepancies. In addition positive/negative asymmetry effects were found at both the maintenance and

adoption dimension. In contrast to the evaluative component, the impact of the positive information dropped dramatically for the affective component: positive discrepancies had substantial lower impact than negative discrepancies. Finally, for describing the effect of positive discrepancies on metaperceptions, a distinction has to be made between the maintenance and the adoption dimension. More specifically, positive discrepancies led to more positive metaperceptions when the extra investment was perceived on the adoption dimension. Like for the other evaluative variable, negative attitudes towards the Turkish and the Moroccan immigrants, no positive/negative asymmetry effect was found. In contrast, at the maintenance dimension, positive discrepancies had the same detrimental effects than negative discrepancies. This seems to suggest that majority group members think that demands of the majority group on the maintenance dimension impact minorities more negatively than demands on the adoption dimension.

*Agreement hypothesis.* The third hypothesis was not confirmed. Agreement on extreme levels of host culture adoption was related with most negative intergroup relations. Explorative analyses on agreement effects at the maintenance dimension indicated that congruence on high levels of cultural maintenance was related with most positive intergroup outcomes. Hence, it seems that agreement on high levels of maintenance of the original culture in combination with moderate levels of host culture adoption is the most adaptive acculturation strategy, because it leads to the most harmonious intergroup climate. Post hoc, we could state that integration is the most adequate orientation, with this remark in mind that adoption of the host culture has to be moderate to keep optimal distinctiveness between the two cultural identities.

This study provided a test of the theoretical assumptions proposed in IAM. To remedy theoretical, statistical, and methodological problems related with methods applied in past research, polynomial regression analysis was proposed as an alternative method. Although specific predictions were not confirmed, the general principles to handle issues of relative fit seemed very useful. First, it appeared that for the prediction of intergroup attitudes, both preferred and perceived acculturation orientations have to be taken into account. Second, effects of disagreement cannot be reduced to mathematical deviation from a certain norm, but have to interpreted on their specific content. The distinction between positive and negative discrepancies appeared to be useful to capture the nature of the deviation. Third, also effects of agreement have to be evaluated with respect of their content. The effects of agreement differ as a function of the original level of the acculturation dimensions. Agreement on high levels of cultural maintenance in combination with moderate levels of host culture adoption leaded to most consensual relational outcomes.

## 4. Ongoing studies

Data were also collected in Turkish and Moroccan immigrant groups. In this way, the effects of relative fit between the own preferred and the perceived acculturation orientations can be studied. In these samples, the preferred acculturation orientations for maintenance of the original culture and adoption to the Flemish culture were obtained, together with perceived acculturation orientations of the own Turkish/Moroccan group and of the Flemish majority group. Further, measures for several personal and relational outcomes were acquired. More specifically, those dependent measures were attitudes toward the own and the Flemish group, acculturation stress, individual and group discrimination, identity management strategies, depression, life satisfaction, self-esteem, and social support experienced from the own and the Flemish group. On a time period of 1.5 years we collected data in the Turkish (n=481) Turkish and Moroccan (n=120) immigrants from three migration

generations, resulting in a rich dataset with reliable scales. Polynomial regression analysis and response surface methodology can also be applied on these datasets to investigate the effects of relative fit between the preferred and perceived attitudes of minority group members. Moreover, it becomes possible to integrate the findings of the majority and minority groups in order to obtain a more complete view on intergroup relations between the Flemish majority group and the Moroccan and Turkish immigrant groups in Flanders.

## Study 2: person situation interaction

### 1. Introduction

In daily life there are many examples in which members of one group express implicit or explicit opinions about members of other groups. Intergroup processes and attitudes can be innocent and even entertaining, e.g., when two soccer teams are having a derby. In other cases these intergroup processes have disastrous effects and enhance the formation of unbridgeable gaps between people. In this respect, the history of Europe is marked by an extreme example of the possible consequences of intergroup processes in World War 2. In response to these dramatic events, the scientific world has been attempting to get more insight in possible determinants of positive and negative intergroup attitudes. In this respect, two major research traditions can be distinguished within psychology. The first is an individual-differences approach, in which stable individual differences in social attitudes are thought to explain differences in prejudice. The second is an intergroup-relations approach, which emphasizes the impact of structural characteristics of the intergroup situation and the perceivers' interpretation of this situation. Both traditions have shed some light on important determinants of negative intergroup attitudes, but have been developing relatively separately from each other. This study attempts to integrate insights from both perspectives.

### 1.1. The individual-differences approach: Right Wing Authoritarianism and Social Dominance Orientation

Shortly after World War II, Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) published a book called "The Authoritarian Personality" in which they tried to explain the rise of fascism from a psycho-dynamic perspective. Adorno et al. (1950) assumed that a childhood characterized by strict discipline, harsh punishment, and little parental warmth would produce a specific and pathological personality structure that characterizes people who admire fascist ideologies. This personality structure would consist of nine covarying traits measured by the F scale. However, several methodological problems were associated with this scale (Altemeyer, 1988).

In order to solve some problems related to the Authoritarian personality and its measure, Altemeyer (1988, and 1996) proposed two major modifications, leading to the conceptualisation of Right Wing Authoritarianism (RWA). A first adaptation was psychometric in nature. In order to obtain a reliable and unidimensional measure, the F scale was reduced to its three most coherent subscales: Conventionalism, Authoritarian Submission and Authoritarian Aggression. *Conventionalism* refers to a strong adherence to social conventions, endorsed by traditional society and its established authorities. *Authoritarian submission* refers to submission to authorities who are perceived to be established and legitimate in the society in which one lives. *Authoritarian aggression* refers to a general aggressiveness, directed against various persons/outgroups, that are perceived to be sanctioned by established authorities.

The second adaptation was theoretical. Altemeyer (1988) rejected the psycho-analytical interpretation and looked at intergroup attitudes from the framework of social learning theory. From this point of view, authoritarian attitudes and behaviours are learned through interactions with the environment. Consequently RWA shouldn't be considered as a core personality trait, but should rather be conceptualized as a set of relatively malleable cognitive beliefs (Duckitt, 2001; Duriez, Van Hiel, & Kossowska, 2005) that become relative stable from adolescence on (e.g., Duckitt, Wagner, du Plessis, & Birum, 2002). Right Wing Authoritarianism is correlated with negative attitudes and hostility towards several outgroups (Altemeyer, 1996) and is now widely accepted as a predictor of prejudice.

Although the motive for domineering other social groups was initially considered an integral part of authoritarianism (Adorno et al., 1950), this motive was largely overlooked as attention was primarily focused on what can be referred to as authoritarian submission (Altemeyer, 1998). Recently, however, renewed interest in the motive of authoritarian dominance led to the concept of Social Dominance Orientation (SDO). The concept of SDO as a measurable individual difference variable is a product of Social Dominance Theory (Sidanius & Pratto, 2001). According to this theory, even in modern societies, group based hierarchy and inequality seem to be maintained and even encouraged because they serve the preservation of societal order and safety. Although they presuppose a human disposition to form group-based hierarchies, this does not mean that all members exhibit authoritarian dominance to the same extent and stable individual differences seem to exist. SDO is conceptualized as a measure of a generalized individual preference for hierarchy versus equality within social systems. People scoring high on SDO are found to be highly prejudiced (Pratto, Sidanius, Stallworth, & Malle, 1994). Many studies support that RWA and SDO are two relatively independent predictors of prejudice and discrimination (Altemeyer, 1998; Sidanius & Pratto, 1999; Duckitt, 2001).

### 1.2. Intergroup-relations approach: Realistic and symbolic threat to ingroup identity

Adorno's idea of a fascist personality has not only been criticized within the individual approach, but criticisms have also been raised in the intergroup-relations approach (Billig, 1978). The starting point was that not only individual characteristics have to be held responsible for racism and discrimination to occur but that situational factors (social and intergroup contexts) have to be taken into account as well. One of the explanations that have been proposed for negative intergroup attitudes to breed is a climate of fear: It is suggested that the perception of threat plays an important role in negative attitudes toward an outgroup. Recently this idea is summarized and tested in integrated threat theory (Stephan & Stephan, 2000; Stephan, Renfro, Esses, Stephan, & Martin, 2005) in which 4 types of threat are distinguished: realistic threat, symbolic threat, negative stereotypes and intergroup anxiety. In the present study, we will limit the concept of threat to realistic and symbolic threat. Realistic threat can be framed within the realistic group conflict theory, while symbolic threat can be situated in social identity theory.

*In Realistic Group Conflict Theory* (RGCT, Levine & Campbell, 1972) perceived competitiveness, referred to as realistic threat, is distinguished as an important situational feature in the development of negative intergroup attitudes. In a series of field experiments (Sherif, 1966), participants' intergroup attitudes tended to be more negative when two groups were forced in a zero sum situation in which the profit of one group inevitably meant loss for the other group. In contrast, attitudes tended to be more positive when the groups shared a superordinate goal and cooperation was beneficial for both groups. In this experiment, it was shown that the

manipulation of these structural characteristics of the intergroup situation changed intergroup attitudes accordingly even over short periods of time. Competition over scarce resources led to intergroup hostility, while sharing common goals resulted in intergroup cooperation. Realistic threat can be defined as threat to the political and economic power of the ingroup. More recent studies indicate that realistic threat can be experienced even in the absence of an actual competitive situation. Perceiving the group situation as zero sum is sufficient for its members to develop prejudiced attitudes towards the presumed source of conflict (Esses, Jackson & Armstrong, 1998).

Although *Social Identity Theory* (SIT) acknowledges the importance of (perceived) competition over tangible resources, realistic threat is not considered to be a necessary condition for negative intergroup attitudes to occur (Tajfel & Turner, 1979). The basic assumption of SIT is that people not only strive to have a positive personal identity, but are also motivated to obtain a positive and distinct group identity (Tajfel & Turner, 1979). The latter can be a result of a successful comparison between the own group and a relevant outgroup. On the other hand, identity can be threatened when values, norms, and world view are questioned by a relevant outgroup. Negative intergroup attitudes will be a likely strategy to deal with this symbolic threat to the ingroup identity (Mummendey & Wenzel, 1999). However, not all possible intergroup comparisons will be relevant to the individual nor will they have the same impact on attitude formation. An important condition is that the group membership is important for the self and that ingroup identification is high. It is also important that the dimension of comparison is considered relevant (Turner & Reynolds, 2001). As outlined above, the realistic and tangible level can be an important comparison dimension in some cases (realistic threat). SIT stresses, however, that threat can be broader and can also stem from a comparison at a more symbolic level (symbolic threat). In addition, in this view, the effect of both kinds of threat is expected to be moderated by the degree of ingroup identification.

The role of ingroup identification in the development of negative attitudes is the subject of an ongoing debate within social psychology. As outlined above, ingroup identification can be seen as a moderator of the relation between threat and negative intergroup attitudes (Turner and Reynolds, 2001). On the other hand ingroup identification can also be seen as as a predictor of intergroup attitudes (Mummendey, Klink & Brown, 2001, Perreault & Bourhis, 1998). Empirical evidence for the latter was reported in a meta-analysis of 15 social-psychological studies, in which it was shown that a moderate positive correlation (i.e., $r = +0.21$) existed between identification and intergroup bias (Aharpour & Brown, 2002). Therefore, we expect a positive relation between ingroup identification and negative intergroup attitudes. More specifically, we expect that the nature of the relation can be explained by the ingroup prototype. The ingroup prototype determines how the ingroup can be delineated from others by representing who the members of the group are, what can be inferred from their membership, and how they should behave (Turner, Hogg, Oakes, Reicher, &Wetherell, 1987). Applied on the Belgian context, substantial positive correlations between Flemish identification and negative intergroup attitudes are found (Snauwaert, Vanbeselaere, Duriez, Boen & Hutsebaut, 1999; Maddens, Billiet & Beerten, 2000). Following Maddens et al. (2000), this positive relation can be explained by the fact that Flemish identity is represented in an ethnic way, which implies that the Flemish cultural heritage is to be static and maintained over generations. As a consequence ethnic representers don't consider ethnic minority members to be full-fledged members of the nation and they even think that the autochthonous culture should be protected against their foreign influences. Hence, in general, people with high levels of Flemish identification are expected to have

negative attitudes towards minority groups in Flanders because a stronger Flemish identification goes along with a more ethnic representation of this identity.

### 1.3. An interactionist approach: An integration of inter-individual differences and intergroup-relations approach

It is clear that intergroup-relations and individual-differences perspectives lead to different hypotheses on intergroup attitudes. An intergroup-relations approach hypothesis, Hypothesis 1, predicts that experiencing threat to an important ingroup will produce more negative attitudes towards the outgroup that is perceived to be the source of this threat. The individual-differences hypothesis, Hypothesis 2, predicts that the more an individual subscribes to RWA and/or SDO, the more negative his/her attitudes will be that are displayed to any relevant outgroup. Moreover, we expect in hypothesis 3, that a main effect of Flemish identification will occur: We expect that the more majorities identify with the Flemish identity, the more negative their intergroup attitudes will be.

The aim of the study is to combine both perspectives into an interactionist view on intergroup attitudes. We want to find out whether both intergroup-relations and inter-individual differences hypotheses hold when tested at the same time and, if so, how they can be integrated. For this purpose, we opted for a research design in which feelings of threat (with both symbolic and realistic components) were experimentally manipulated. Prior to this manipulation, measures for RWA, SDO and ingroup identification are included as possible predictors of intergroup attitudes. From the intergroup-relations perspective, it has been argued that personality related variables like RWA and SDO are situated at the interpersonal pole of the social behavioural continuum (Tajfel and Turner, 1979) and do not have to be taken into account when predicting intergroup behaviours at the intergroup pole (Turner, 1981). However, the reduction of RWA and SDO to a mere personality trait dimension is inappropriate and denies the consistent empirical finding that those concepts are meaningfully related with collective and intergroup behaviour (Duckitt, 1989). In this view it is expected that the impact of situational factors is moderated by inter-individual difference variables. It was proposed to reconceptualize RWA as a group-level phenomenon (Duckitt, 1997). Duckitt argues that RWA defines an attitude indicating how the specific relation toward the ingroup ideally must be. RWA is hypothesized to be an attitude predicting intergroup behaviour because it makes an individual susceptible for situational cues invoking negative intergroup attitudes. When an ingroup with whom one identifies strongly is under threat, individuals will tend to have negative attitudes towards the source of threat. However, individuals with high levels of RWA will even react more strongly to this threat and will display even more prejudice. Applied to the study of intergroup attitudes, several studies showed that the connection between a RWA and negative intergroup attitudes becomes stronger in situations that pose a threat to an ingroup with whom one identifies strongly (Feldman & Stenner, 1997; Lavine, Lodge, & Freitas, 2005; Stellmacher & Petzel, 2005). Hence, in Hypothesis 4 a three way interaction between RWA, threat, and identification can be expected when predicting positive and negative intergroup attitudes.

Similar arguments can be made for SDO. SDO reflects an individual's tendency to classify social groups along a superiority-inferiority dimension and to favour policies that maintain inequality between the social groups. Hence, SDO is not merely an interpersonal construct, but is also situated at the group level (Altemeyer, 1998; Pratto et al., 1994; Whitley, 1999). Further, it seems plausible to assume that people with high need for inequality

and intergroup dominance will be even more negative towards an outgroup that threatens the high status ingroup with whom the individual strongly identifies. Hence, in Hypothesis 5, a 3 way interaction with SDO, threat and identification can be expected when predicting intergroup attitudes.

Both hypotheses will be investigated with respect to three different outcome variables: intergroup bias, discrimination and positive discrimination towards Polish immigrants. Intergroup bias is an attitudinal measure that belongs to the evaluative component of intergroup attitudes, while discrimination and positive discrimination are soliciting for behavioural intentions component of respectively negative and positive intergroup attitudes. We included positive discrimination next to discrimination, because of policy considerations. In some domains of life even non discrimination- as the opposite of discrimination- is not sufficient to lift minorities out of their deprived situation. Sometimes temporal forms of positive discrimination will be necessary to establish real equality of opportunities between different cultural groups within a country.

### 1.4. Additional hypotheses

First, the generalizability of the proposed effects toward other outgroups is investigated. To test this hypothesis, intergroup bias, discrimination and positive discrimination towards Moroccan immigrants were also assessed. This group was not mentioned in the experimental vignettes and was thus not involved in the threat induction. The situational hypothesis predicts that experiencing threat to an important ingroup will produce more negative attitudes towards the specific outgroup that is perceived to be the source of this threat. Hence, in Hypothesis 6, no generalization of the manipulated effects of threat stemming from Polish group is expected to occur toward the Moroccan group. In the individual differences literature, RWA and SDO are viewed to be social attitudes that make individual susceptible for a generalized form of negative intergroup attitudes (Altemeyer, 1988). Hence in Hypothesis 7, it was expected that their main effects will generalize toward other outgroups.

Second, if Flemish identification has a main effect on negative attitudes toward the outgroup, we will further investigate whether this effect is mediated by the social representation of Flemish identity. More specifically, in Hypothesis 8 it is expected that Flemish identification is positively related to an ethnic representation, which in turn is positively related to a more negative attitude towards the outgroup. We expected this mediated relation for intergroup bias, discrimination and positive discrimination towards both the Polish and the Moroccan outgroup.

## 2. Procedure and measures

Participants were asked to individually complete a questionnaire assessing Right-Wing Authoritarianism (Cronbach alpha= .77; Mean= 2.87; SD= 0.50), Social Dominance Orientation (Cronbach alpha= .89; Mean= 2.42; SD= 0.66) and Flemish in-group identification (Cronbach alpha=.88; Mean= 3.22; SD= 0.79).

After having administered these dispositional measures, we experimentally manipulated the amount of threat directed towards the ingroup. The manipulation consisted of two different versions of a vignette dealing with the entrance of Poland to the European Union and the subsequent wave of Polish immigrants in Flanders. The first group ($N$ = 161; Mean age = 16.5; 40% male) received a vignette in which the entrance of Poland and the subsequent migration is described as a threatening and negative experience for Flemish citizens. The second

group- the control group ($N$ = 158; Mean age = 16.5; 39% male) - received a neutral report on Poland's application procedure for obtaining European membership. In order to check the effect of the vignettes, a 4 item manipulation check was administered. On a 9 point Likert scale ranging from very threatening (-4) over neutral (0) to enriching (4) [3], participants indicated how threatening they experience the admission of Poland to the European Union (EU) and the subsequent wave of Polish immigrants with respect to Flemish culture, Flemish economy, criminality in Flanders, and for Flanders as a whole (Cronbach alpha = .84). Univariate ANOVA-analyses indicated that the two conditions differed significantly with respect to the way in which they experience the admission of Poland to the EU [$F$ (2, 481) = 52.64, $p < .001$]. Post-hoc Tukey comparisons further showed that those who received the threatening scenario felt the admission of Poland to be significantly more threatening (Mean = -0.79, SD = 1.15) than those who received the neutral scenario (Mean = -0.05, SD = 0.92)

After reading these vignettes, all participants completed measures for the dependent variables. The dependent variables that were assessed can largely be grouped into two different categories: on the one hand intergroup attitudes towards Polish immigrants and on the other hand intergroup attitudes towards Moroccan immigrants. The dependent variables concerning the Polish group were the following. Two 6 item scales tapping positive affect towards Flemish people (e.g., 'I admire the achievements of Flemish people; Cronbach alpha = .85), and Polish immigrants (e.g., 'I admire the achievements of Polish immigrants'; Cronbach alpha = .90). From these measures, an intergroup bias measure was constructed by subtracting outgroup from ingroup affect (Cronbach alpha = .90). In addition, participants completed a 6 item measuring discriminatory attitudes towards Polish immigrants (e.g., 'Flemish people deserve more participation in town councils than Polish immigrants'; Cronbach alpha = .91), and a 5 item attitude towards affirmative action targeted at Polish immigrants scale (e.g., 'I think programs should be started aimed at giving Polish immigrants better opportunities to find decent jobs'; Cronbach alpha = .72). Because these scales were highly correlated, a higher-order factor analyses was conducted. The scree plot clearly pointed to a one-factor solution. All three scales affective bias, negative and positive discrimination had high factor loadings on this higher-order factor, respectively .86, .87 and -.85). Therefore, an **overall index of negative attitudes towards Polish minority group** (Cronbach alpha= .81) was computed by adding affective bias, negative discrimination and the reversed coded variable positive discrimination. To obtain more meaningful interpretations, the scores of this index were standardized.

To capture negative attitudes towards the Moroccan minority group, the items for the dependent variables concerning the Polish immigrant group were slightly adapted to apply them on the Moroccan immigrant group. Cronbach alphas were .93, .93 and .73 for affective bias, negative discrimination and positive discrimination respectively. These scales were highly correlated, and the scree plot of a higher order factor analyses clearly pointed to a one-factor solution. Because all three scales had high factor loadings on this factor (.88, .87 and -.86 for affective bias, negative discrimination and positive discrimination, respectively), an **overall**

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[3] Next to the experimental manipulation of feelings of threat, feelings of enhancement were also manipulated in a third vignette. Hence, a third group ($N$ = 163; Mean age = 16.5; 40% male) received a scenario in which Polish immigrants were argued to make a valuable contribution to the status of the ingroup. In this way, a multicultural discourse was simulated. Although, there was a significant effect for the manipulation check, no main effects or interaction effects with the enhancement condition were observed. This is an important finding because a multicultural discourse, although it is comprehended and even experienced by the participants, had no beneficial effects on intergroup attitudes. These findings are in line with the positive negative asymmetry effects, in which it is described that positive information has much smaller impact on attitude formation than negative information. Given the limited space, these findings were not reported in the text above. However, the enhancement effects were included in the performed hierarchical regression analysis as a contrast coded dummy variable. This is also reflected in the degrees of freedom reported for the hierarchical regression analysis.

**index of negative attitudes towards Moroccan minority group** (Cronbach alpha= .83) was computed by adding affective bias, negative discrimination and the reversed coded variable positive discrimination. To obtain more meaningful interpretations for the interaction terms, the scores of this index were standardized.

## 3. Results: Test of the main effect and interaction hypotheses

The main effects and interaction hypotheses of this person/situation design -consisting of a combination of a situational experimental variable and continuous individual difference variables- can best be tested by a moderated multiple regression analysis (Cohen & Cohen, 1983; Aiken & West, 1991). Interaction variables are represented by the product terms of the standardized scores of the involved moderator variables. In order to meaningfully test for interactions, product terms have to be partialed out for the effects of the constituent variables and lower order interactions (Aiken & West, 1991). This can be done by entering the continuous predictor variables (step 1) and the categorical predictor variables, as a dummy variable (in step 2), followed by the two-way interactions (in step3), and three-way interactions (step 4) in the regression equations.

With respect to **negative attitudes towards the Polish** both individual-difference variables of step 1 ($R^2 = .49$; $F\ (3, 476) = 153.36$, $p < .001$) and the situational variable of step2 ($\Delta R^2 = .01$; $F\ (2, 474) = 4.94$, $p < .001$) were significant predictors. Step 3 and step 4 didn't result in any significant increase of explained variance, which indicated that no interactions were contributing. Test for significant increase of $R^2$ becomes more conservative when higher order interactions are included. In order to avoid too conservative testing, significance of higher order variables is still inspected (Cohen and Cohen, 1983). Nevertheless, in the additional steps, no meaningful interactions were significant. In step 2, negative attitudes towards the Polish immigrants were positively predicted by identification ($\beta = .36$, $p < .001$), RWA ($\beta = .23$, $p < .001$) and SDO ($\beta = .33$, $p < .001$). With respect to the experimental variables, the threatening condition differed significantly ($\beta = .10$, $p < .001$) from the control condition in the expected way. Hence, Hypothesis 1, 2, and 3 were confirmed because the expected main effects were observed. In contrast, Hypothesis 4, in which it was predicted that significant interactions would occur between RWA, Flemish identification, and feelings of threat, was not confirmed. In addition, Hypothesis 5, in which it was predicted that significant interactions would occur between SDO, Flemish identification, and feelings of threat, was not confirmed either.

## 4. Results: Test of two additional hypotheses

First, the generalizability of both situational and individual-differences predictions toward the Moroccan immigrant group was investigated with moderated multiple regression analysis. Concerning **negative attitudes towards the Moroccan immigrant group** only the individual-difference variables ($R^2 = .50$; $F\ (3, 476) = 156.43$, $p < .001$) resulted in a significant amount of explained variance in step 1. For the situational variables ($\Delta R^2 = .002$; $F\ (2, 474) = 1.03$, $p = .36$), there was no significant increase in step2. Again no interaction did have any significant or meaningful contribution in explaining **negative attitudes towards Moroccan** immigrants in step 3 and step 4. In step 1, **negative attitude towards Moroccan** immigrants was positively predicted by identification ($\beta = .34$, $p < .001$), RWA ($\beta = .26$, $p < .001$) and SDO ($\beta = .33$, $p < .001$). Hence, Hypothesis 6, predicting generalization effects of the individual differences variables RWA and SDO toward the Moroccan immigrant group, was confirmed. In addition, Hypothesis 7 was also confirmed, because the effect of

threat towards Polish immigrants did not generalize towards the Moroccan immigrant group. The effects of Flemish identification were also found to generalize to attitudes towards the Moroccan group.

Second, it was investigated whether the effect of Flemish identification on attitudes towards both the Polish and the Moroccan immigrants is mediated by an ethnic representation of Flemish identity. Mediation effects can be tested by a series of regression analysis corresponding to the recommendations made by Baron and Kenny (1986). The relation between an independent and a dependent variable is fully mediated, when the following conditions are met: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path *a*), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path *b*), and (c) when Paths *a* and *b* are controlled, a previously significant relation between the independent and dependent variables is no longer significant (Baron & Kenny, 1986, p. 1176). The relation can also be partially mediated, when the relation between the independent and dependent variable, in step c, remains significant, but is substantially reduced (Shrout and Bolger, 2002). Further, Sobel test (Baron & Kenny, 1986; Sobel, 1982) has to be carried out in order to obtain a level of significance for the indirect path (including path a and path b).

***Negative attitudes towards Polish immigrants***. First, variations in levels of Flemish identification significantly accounted for variations in ethnic representation ($\beta = .46$, $p < .001$). Second, variations in levels of ethnic representation significantly accounted for variations in the level of negative attitudes towards the Polish immigrant group ($\beta = .63$, $p < .001$). Last, when Flemish identification and ethnic representation were jointly taken into account, the original effect of Flemish identification on negative attitudes towards the Polish was substantially reduced (from $\beta = .54$ to $\beta = .32$, $p < .001$). In addition, Sobel test indicated that the indirect effect of the IV on the DV via the mediator differs significantly different from zero ($z= 8.5335$, $p<.001$). Altough the direct path between identification and intergroup attitudes remains significant, there is convincing evidence that the relation between Flemish identification and negative attitudes towards Polish is partially mediated by an ethnic representation of Flemish identity.

***Negative attitudes towards Moroccan immigrants***. First, variations in levels of Flemish identification significantly accounted for variations in ethnic representation ($\beta = .46$, $p < .001$). Second, variations in levels of ethnic representation significantly accounted for variations in the level of negative attitudes towards Moroccans ($\beta = .64$, $p < .001$). Last, when Flemish identification and ethnic representation were jointly taken into account, the original effect of Flemish identification on negative attitudes towards Moroccans was substantially reduced (from $\beta = .54$ to $\beta = .31$, $p < .001$). In addition, Sobel test indicated that the indirect effect of the IV on the DV via the mediator differs significantly different from zero ($z= 8.6563$, $p< .001$). Altough the direct path between identification and intergroup attitudes remains significant, there is convincing evidence that the relation between Flemish identification and negative attitudes towards Moroccan immigrants is partially mediated by an ethnic representation of Flemish identity.

In general, we can conclude that Hypothesis 8 is partially confirmed. Evidence is found that Flemish identification has positive effects on negative attitudes towards two immigrant groups and that this relation is partially mediated by the social representation of Flemish identity.

## 5. Discussion

In theorizing about positive and negative intergroup attitudes, two important research traditions can be distinguished: An intergroup-relations approach and an individual-differences approach. Both traditions have been developed relatively independently of each other. The aim of the present study was to investigate whether both approaches can be integrated. This was done by including all relevant variables in a single research design. The main hypotheses were that both situational and inter-individual differences variables will have main effects on intergroup attitudes. In addition, it was hypothesized that situational variables would be moderated by individual-differences variables, indicating that some individuals are more susceptible for threat induction than others due to their social attitudes.

Both the intergroup-relations and the individual-differences approach seem to offer a valuable contribution to the understanding of the nature of negative intergroup attitudes. When predicting attitudes towards Polish immigrants, main effects were observed for RWA, SDO, ingroup identification and threat. Because no significant and meaningful interactions were found, we can make the provisional conclusion that situational and individual-differences effects work in an additive way, rather than in an interactive way. Irrespective of the experimental condition, people scoring high on RWA and SDO displayed more intergroup bias and subscribed more to negative and less to positive discrimination then people scoring low on these individual difference variables. When threat was experimentally manipulated, there was a general increase in negative attitudes towards the Polish immigrant group where the induced threat was stemming from. No evidence was found that some individuals would be more susceptible for negative information about an immigrant group based on their social attitudes. Another important finding was that ingroup identification didn't function as a moderator in the relation between threat and negative intergroup attitudes. In line with the findings of Aharpour & Brown (2002), Flemish group identification in itself had negative effects on the intergroup attitudes.

Further, we explored whether there was a generalization of the effects of RWA, SDO, ingroup identification and feelings of threat toward another immigrant group (i.e. Moroccan immigrants). As expected, generalization occurred for RWA and SDO. In contrast, no generalization effects of the threat manipulation were found. Whereas the threatening vignette about Polish immigration has detrimental effects on the attitude towards the Polish group, no negative influence on the attitude towards Moroccans was observed. Moreover, generalization effects were also found for ingroup identification.

Finally, it was investigated whether the negative effects of Flemish ingroup identification on outgroup attitude could be explained by the social representation of the ingroup identity. In line with Maddens et al. (2000), evidence was found that the relation is at least partially mediated by the ethnic representation of this identity.

## 6. Ongoing Research

In this section we want to present study 4 that has been conducted on the basis of the outcomes and limitations of study 3. Given that, for statistical reasons, finding strong, reliable and replicable effect sizes for joint interactions is a very difficult task (Chaplin, 1991) a more thorough testing of the interaction hypothesis is needed. Cohen and Cohen (1983) indicate that there is a prominent loss in power when the order of the interactions increases. Because it is so difficult to grasp these interactions, it is necessary to retest the different

perspectives in a design that is more sensitive and has more statistical power. In order to establish this, three modifications to our research design were implemented in study 4.

A first modification aims to reduce the error term by switching from a between-subject design to a within-subject design. In a between-subject design, small but consistent differences between conditions can stay unnoticed because of the presence of large overall differences (Maxwell & Delaney, 2004). The advantage of a within-subject design is that it also takes these differences into account, resulting in a reduction of error and a subsequent increase in statistical power. A second modification aims to increase the detectable effect by strengthening the threat manipulation. For this purpose, the participants received a scenario in which the induced threat towards Flemish identity stems from the entry of Turkey to the EU and the subsequent migration wave of Turkish immigrants. Considering the overt western islamophobic discourse (dating from 9/11 events) it can be expected that inducing threat from Turkey has more impact than inducing threat from the catholic east European country of Poland. A third modification is to fine-tune the threat manipulation. Following the interactionist perspective, interaction will occur when there is a match between individuals' dispositions and environmental characteristics. In study 3, a very broad concept of threat was primed. However, it can be argued that whereas people with a certain disposition might be sensitive to a specific form of threat, but not to other forms of threat. More specifically, it has been argued that, whereas differences in SDO relate mainly to differences in sensitivity to realistic threat, differences in RWA relate mainly to differences in sensitivity to symbolic threat (Duckitt, 2001). Following Duckitt et al. (2002), RWA and SDO would be characterised by specific worldviews. Individuals scoring high on RWA have learned that the world is a dangerous and unpredictable place, leading to a preference for clear-cut situations and transparent behavioural rules. It can be expected that those individuals will especially feel threatened when the established norms and habits of the ingroup are chalenged by, for instance, immigration. Hence, we hypothesize that a specific interaction between RWA and symbolic threat will occur. Individuals scoring high on SDO have learned that the world is a competitive jungle in which only the strongest will survive. We expect that people scoring high on SDO will especially feel threatened when they are forced to compete with, for instance, immigrants. Hence, we expect a specific interaction between SDO and realistic threat will occur.

The experimental design of study 4 is as follows. At Time 1, RWA, SDO, and E / I goal pursuit will be assessed, along with the degree of identification with the Flemish group. After having administered these features, participants receive a neutral scenario in which information is given on the application of Turkey to become a member of the EU, followed by an assessment of their attitudes toward Turkish immigrants. At Time 2, whereas half of the participants receive a scenario inducing realistic threat, the other half receives a scenario inducing symbolic threat. At Time 3, participants that received a realistic threat scenario at Time 2, receive now a symbolic threat scenario, and participants that received a symbolic threat scenario at Time 2 receive now a realistic threat scenario. In order to check for potential over-time changes in intergroup attitudes resulting from circumstances unrelated to our research, at Time 1, Time 2 and Time 3, a control group is presented with the neutral scenarios, after which the respective intergroup attitudes are assessed. This study, containing three modifications compared to the first study to reduce error, will provide a more thorough testing of the interaction hypothesis.

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## Appendix

Information on Polynomial Regression Analysis

Polynomial regression is a method that can be used to determine the effects of degree of fit between two components. Following Edwards (2002) this is done by regressing the acculturation outcomes for both maintenance and adoption dimension, after centering all variables -both independent and dependent- at the same values (from -2 to +2), based on the midpoint of their scales. The separate components preferred and perceived attitudes (main effects), the squared components and the interaction between these components (higher order effects) were entered. For the maintenance dimension, the regression equation contained the preferred and the perceived level for cultural maintenance, the squared preferred and perceived maintenance orientation and the interaction between the original preferred and perceived level for cultural maintenance. Parallel to this, for the adoption dimension, the regression equation contained the preferred and the perceived level for host culture adoption, the squared preferred and perceived adoption orientation and the interaction between the original preferred and perceived level for host culture adoption.

The joint effect hypothesis (Hypothesis 1) will be confirmed when both components (either the original level or the squared terms) or the interaction term between them turn out to be significant. This implies that relative fit between the preferred and perceived attitudes has to be taken into account when predicting positive and negative intergroup outcomes. The regression equation which corresponds to this full model is the following:

$$O = b_0 + b_1\,PR + b_2\,PE + b_3\,PR^2 + b_4\,PR*PE + b_5\,PE^2 + e$$

This equation represents a polynomial regression model, that can be visualized in a 3D contour plot with 3 axes: the original preferred score (PR), the original perceived score (PE) and the values of the outcome variables (O). Unique to the method of Edwards is that it offers a flexible tool to estimate and interpret the effects of relative fit between two components. This is done by estimating the line of perfect disagreement and the line of perfect agreement, for which the regression equations can easily be derived.

First, the line of perfect agreement (PR = PE) contains the following preferred- perceived couples; -2 and -2, -1 and -1, 0 and 0, 1 and 1, 2 and 2. The line of perfect agreement ranges from agreement on low over moderate to extreme values of maintenance and adoption orientation. Both lines can be fully described by determining the slope and the curvature of its function. Hypothesis 3, concerning agreement effects, predicted that agreement on high values of host cultural adoption will lead to more positive intergroup outcomes than agreement on low levels. This corresponds with a negative linear trend. Predictions for the maintenance dimension remain unclear. Hypothesis 3 can be tested by looking at the regression equation for perfect agreement, which describes the function along this line. How the slope and the curvature of the line of perfect agreement can be derived, becomes clear when PE is substituted by PR in the regression equation.

$$O = b_0 + b_1\,PR + b_2\,PR + b_3\,PR^2 + b_4\,PR^2 + b_5\,PR^2 + e$$

becomes

$$O = b_0 + (b_1 + b_2)\,PR + (b_3 + b_4 + b_5)\,PR^2 + e$$

The slope of the line of perfect agreement $a_1$ is $(b_1 + b_2)$. When $a_1$ differs significantly from zero there is a positive or negative linear relation, depending on the sign of $a_1$. The slope of the line of perfect agreement $a_2$ is $(b_3 + b_4 + b_5)$. When $a_2$ differs significantly from zero there is a curvilinear function. A positive value of $a_2$ delineates a convex function (U curve), while a negative value of $a_2$ delineates a concave function (inverted U curve). Hypothesis 3 predicted a decreasing (negative) linear function on the line of perfect agreement for the adoption dimension, which would be evidenced by a negative slope $a_1$ and zero value for curvature $a_2$. There are no clear predictions for the maintenance dimension.

Second, the line of perfect disagreement (PR = - PE) contains the following preferred- perceived couples; -2 and 2, -1 and 1, 0 and 0, 1 and -1, 2 and -2. This line ranges from extremely negative discrepancies over agreement to extremely positive discrepancies. In this way the effects of positive and negative discrepancies can be compared with agreement on moderate levels of preferred and perceived attitudes. Hypothesis 2, concerning disagreement effects, predicted that negative discrepancies will be related with more negative intergroup outcomes than agreement, which in turn will be related with more negative intergroup outcomes than positive discrepancies. However, effects of negative discrepancies are expected to be larger than effects of positive discrepancies, corresponding to a curvilinear trend. This hypothesis can be tested by looking at the regression equation for

perfect disagreement, which describes the function along this line. How the slope and the curvature of the line of perfect disagreement can be derived, becomes clear when PE is substituted by – PR in the regression equation.

$$O = b_0 + b_1 PR - b_2 PR + b_3 PR^2 - b_4 PR^2 + b_5 PR^2 + e$$

becomes

$$O = b_0 + (b_1 - b_2) PR + (b_3 - b_4 + b_5) PR^2 + e$$

The slope of the line of perfect disagreement $a_3$ is $(b_1 - b_2)$. When $a_3$ differs significantly from zero there is a positive or negative linear relation, depending on the sign of $a_3$. The curvature of the line of perfect disagreement $a_4$ is $(b_3 - b_4 + b_5)$. When $a_4$ differs significantly from zero there is a curvilinear function. A positive value of $a_4$ points at a convex function (U curve), while a negative value of $a_4$ points at a concave function (inverted U curve). Hypothesis 2 predicted that positive and negative discrepancies have opposite effects, but that the negative discrepancy effects are stronger. This would be reflected by a curvilinear trend on the line of perfect disagreement, which would be evidenced by a significant slope $a_3$ and significant curvature $a_4$. For the maintenance dimension, we expect the line of perfect disagreement to have a negative slope and a positive curvature, because negative discrepancies are observed when the preferred level is lower than the perceived level of cultural maintenance. For the adoption dimension, we expect the line of perfect disagreement to have a positive slope and a positive curvature, because negative discrepancies are observed when the preferred level exceeds the perceived level of host culture adoption.

## Figures and Tables

## Negative attitudes on the maintenance domain

Figure 1

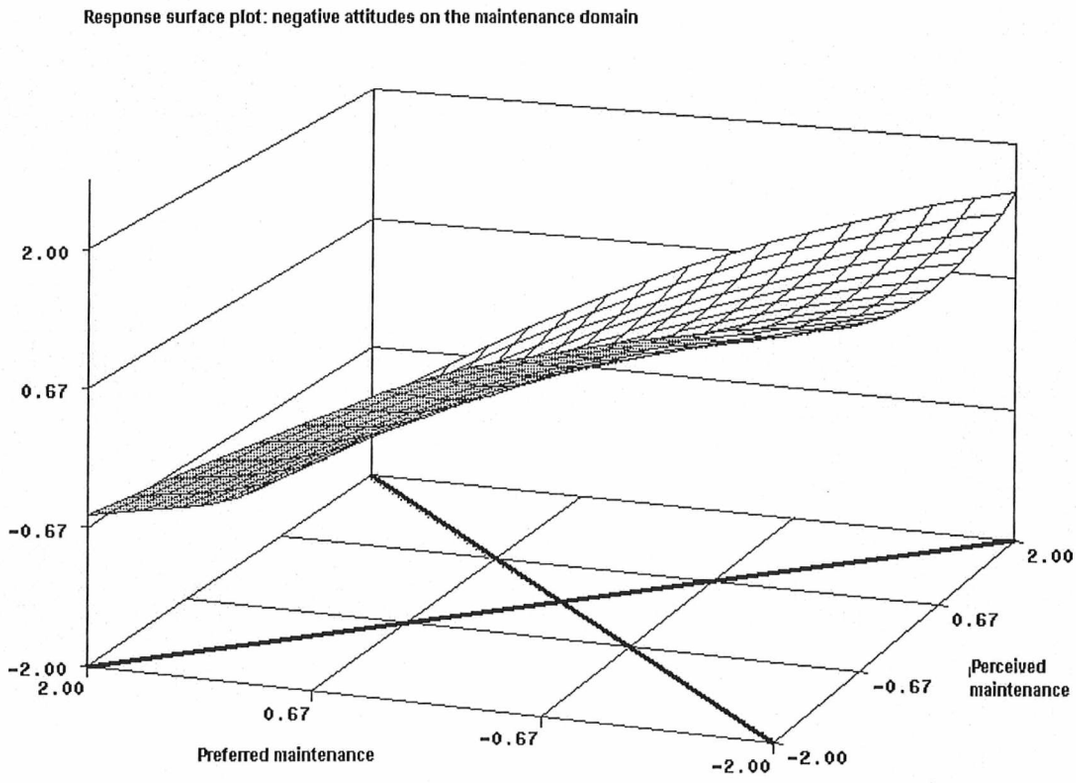


Table 1

| | Feelings of threat |
|---|---|
| Preferred maintenance | -.625 ** |
| Perceived maintenance | -.153 |
| Squared preferred | .083 |
| Perceived* preferred | -.034 |
| Squared perceived | .128 ** |
| a1 | -.778 ** |
| a2 | .011 |
| a3 | -.472 ** |
| a4 | .079 |
| R squared | .341 |
| F | 30.135 ** |

*p <.05;  *** p <.01

## Feelings of threat at the maintenance domain

Figure 2

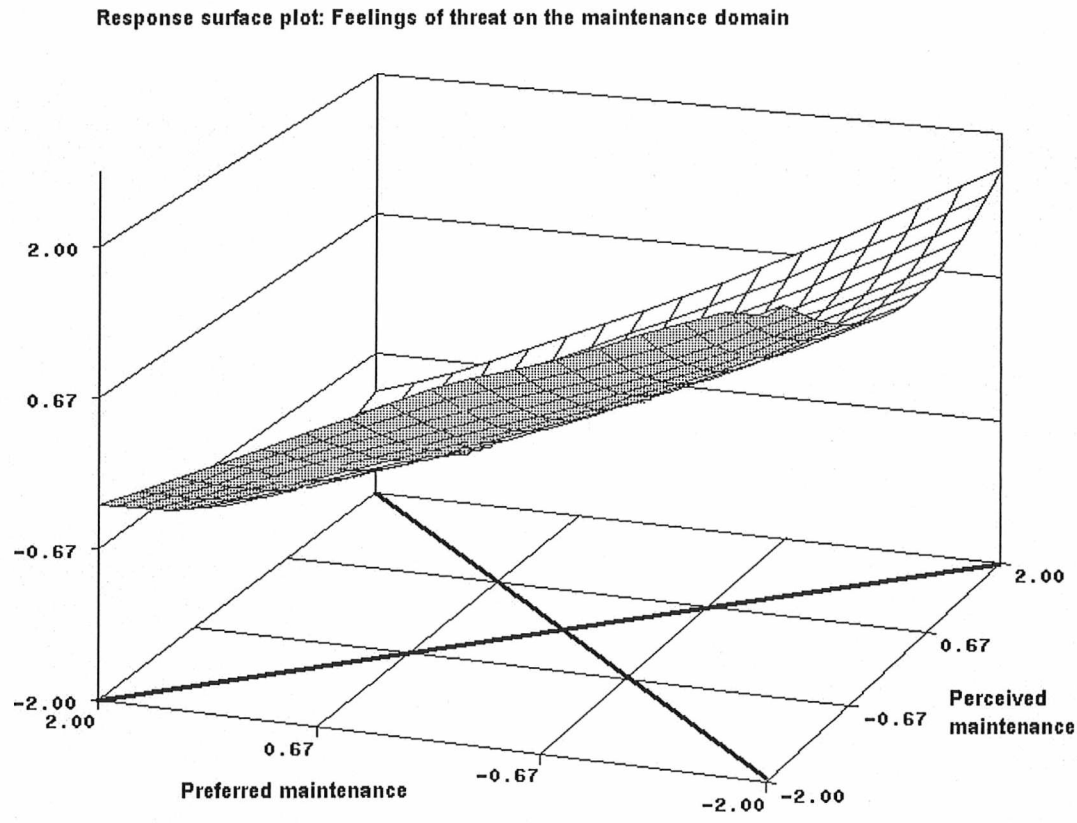


Table 2

| | Feelings of threat |
|---|---|
| Preferred maintenance | -.582 ** |
| Perceived maintenance | -.221 * |
| Squared preferred | .035 |
| Perceived* preferred | -.049 |
| Squared perceived | .189 ** |
| a1 | -.803 ** |
| a2 | .175 ** |
| a3 | -.362 (*) |
| a4 | .273 * |
| R squared | .357 |
| F (5, 291) | 32.264 ** |

*p <.05; ** p <.01

## Metaperception on the maintenance domain

Figure 3

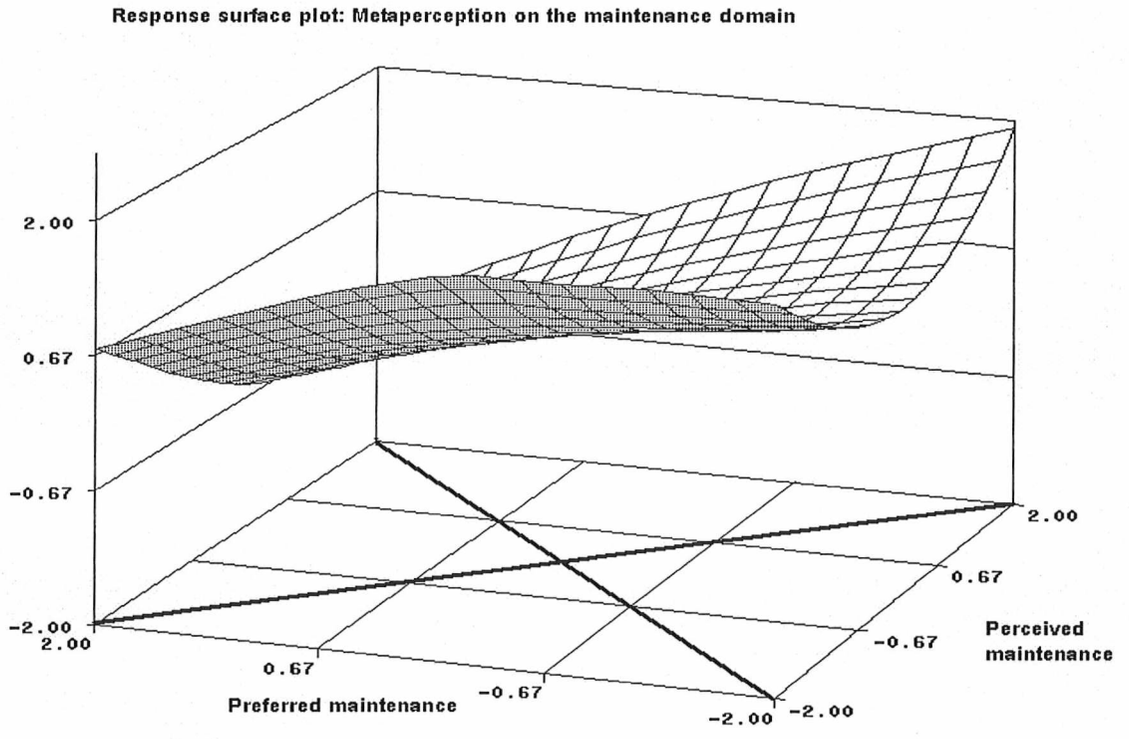


Table 3

| | Feelings of threat |
|---|---|
| Preferred maintenance | -.342 ** |
| Perceived maintenance | -.234 ** |
| Squared preferred | -.035 |
| Perceived* preferred | -.134 * |
| Squared perceived | .246 ** |
| a1 | -.576 ** |
| a2 | .078 |
| a3 | -.108 |
| a4 | .345 ** |
| R squared | .594 |
| F (5, 291) | 31.731 ** |

*p <.05; ** p <.01

## Negative attitudes on the adoption domain

Figure 4

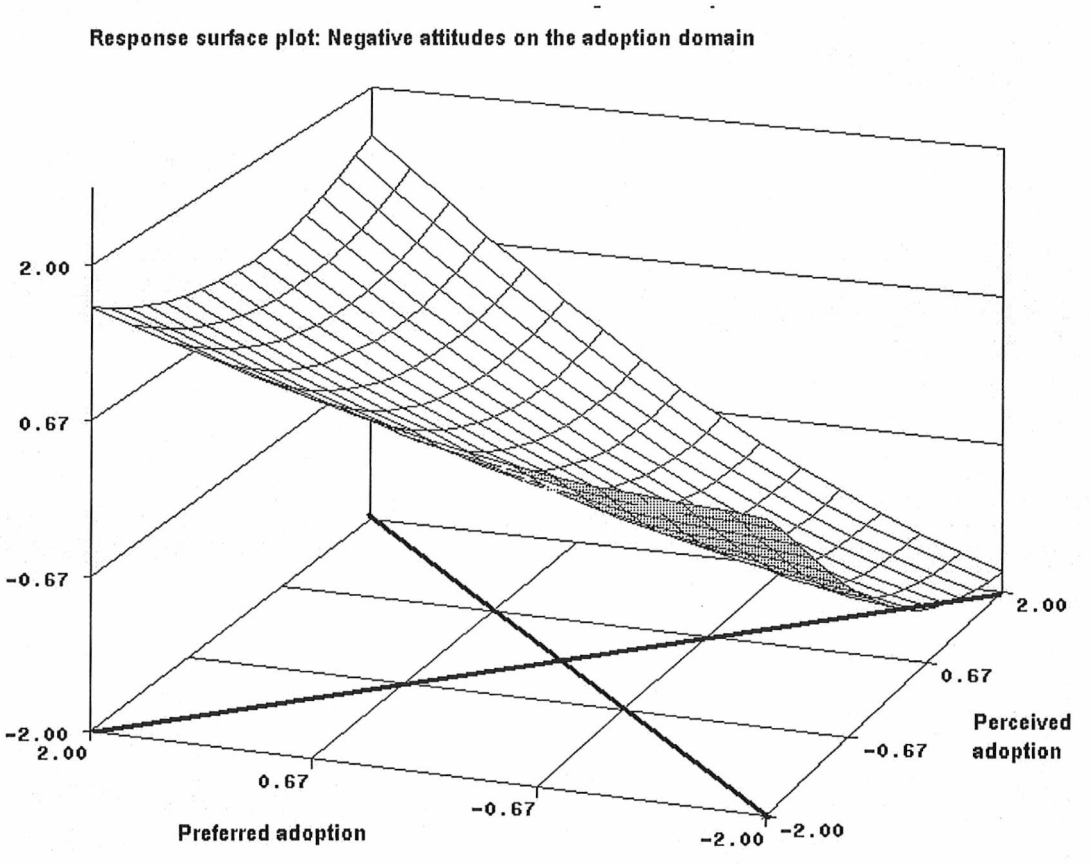


Table 4

| | Negative attitudes |
|---|---|
| Preferred adoption | .601 ** |
| Perceived adoption | -.333 ** |
| Squared preferred | .059 |
| Perceived* preferred | .155 |
| Squared perceived | .122 * |
| a1 | .553 |
| a2 | .429 ** |
| a3 | .895 ** |
| a4 | .416 |
| R squared | .287 |
| F (5, 291) | 23.383 ** |

*p <.05; ** p <.01

## Feelings of threat on the adoption domain

Figure 5

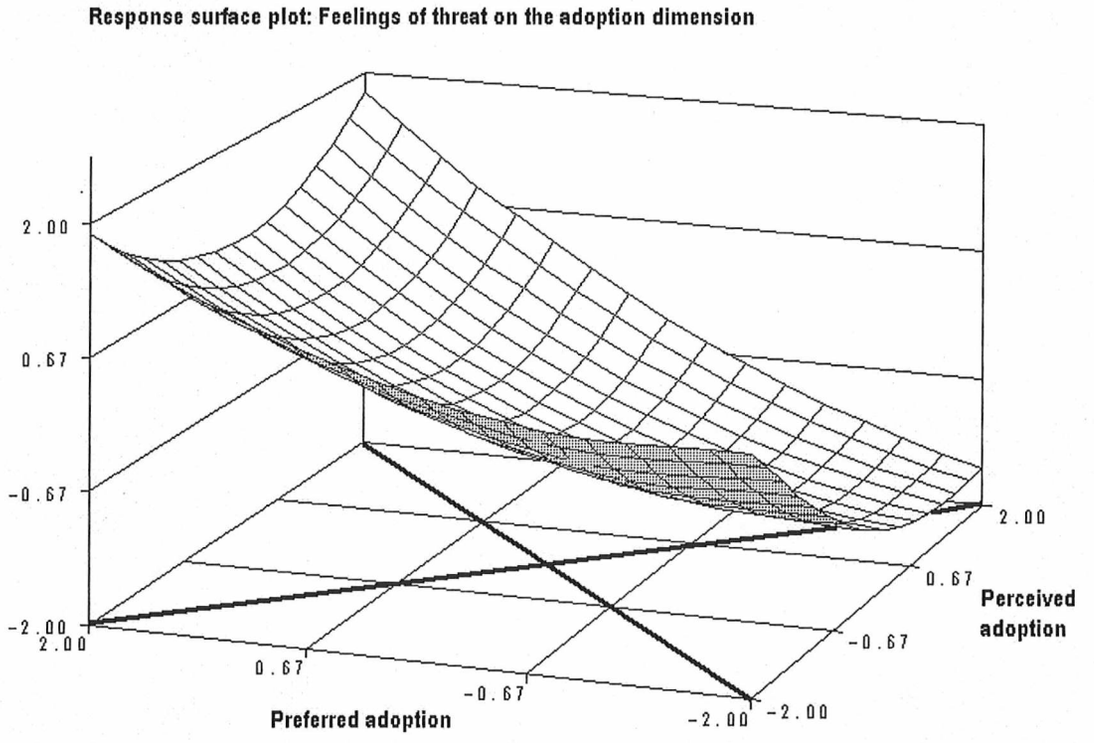


Table 5

| | Feelings of threat |
|---|---|
| Preferred adoption | .581 ** |
| Perceived adoption | -.231 * |
| Squared preferred | .132 |
| Perceived* preferred | .101 |
| Squared perceived | .218 ** |
| a1 | .349 * |
| a2 | .450 ** |
| a3 | .812 * |
| a4 | .249 ** |
| R squared | .373 |
| F (5, 291) | 34.615 ** |

*p <.05; ** p <.01

## Metaperception on the adoption domain

Figure 6

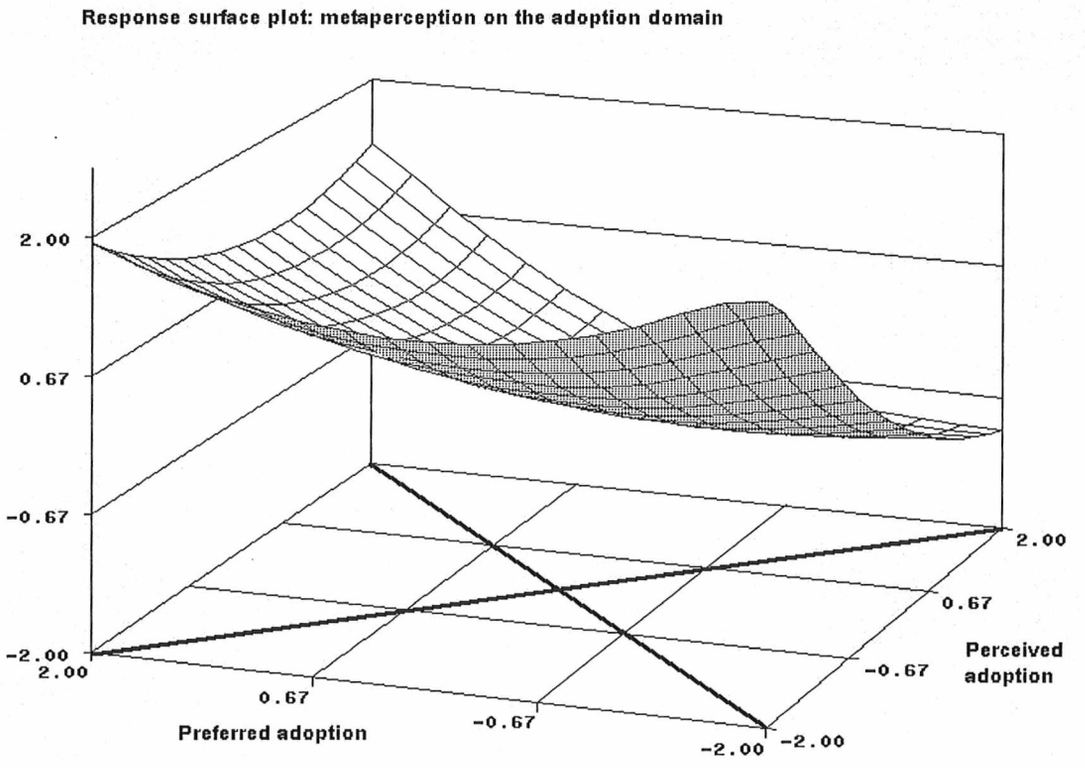


**Table 6**

| | Feelings of threat |
|---|---|
| Preferred maintenance | .272 * |
| Perceived maintenance | -.458 ** |
| Squared preferred | .173 * |
| Perceived* preferred | .154 * |
| Squared perceived | .137 ** |
| a1 | -.186 |
| a2 | .464 ** |
| a3 | .730 ** |
| a4 | .156 |
| R squared | .384 |
| F (5, 291) | 32.217 ** |

*p <.05; ** p <.01