The relationships between internal and external threat and right-wing attitudes: A three-wave longitudinal study

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Abstract

The interplay between threat and right-wing attitudes has received much research attention, but its longitudinal relationship has hardly been investigated. In this study, we investigated the longitudinal relationships between internal and external threat and right-wing attitudes using a cross-lagged design at three different time points in a large nationally representative sample (N = 800). We found evidence for bidirectional relationships. Higher levels of external threat were related to higher levels of Right-Wing Authoritarianism and to both the egalitarianism and dominance dimensions of Social Dominance Orientation at a later point in time. Conversely, higher levels of RWA were also related to increased perception of external threat later in time. Internal threat did not yield significant direct or indirect longitudinal relationships with right-wing attitudes. Theoretical and practical implications of these longitudinal effects are discussed.

KEYWORDS: internal threat, external threat, authoritarianism, social dominance orientation, longitudinal relationships, cross-lagged model

The Relationships between Internal and External Threat and Right-Wing Attitudes: A Three-Wave Longitudinal Study

Over the years, a number of studies have provided convincing empirical evidence for the positive relationship between threat and right-wing ideological attitudes using different indicators of right-wing attitudes, including authoritarianism and social dominance orientation (for meta-analytic reviews, see Jost, Glaser, Kruglanski, & Sulloway, 2003; Onraet, Van Hiel, Dhont, & Pattyn, 2013a). While these relationships have often been interpreted as evidence for the important role that threat plays as a cause of right-wing attitudes (e.g., Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Altemeyer, 1981; Jost et al., 2003), other scholars have considered right-wing attitudes to be a predisposition leading to a heightened sensitivity to perceive threat (e.g., Cohrs, 2013; Feldman & Stenner, 1997, Stephan & Renfro, 2002). While these two perspectives seem to contrast at first sight, both perspectives might in fact be complementary. More specifically, while experiencing threat may enhance levels of right-wing attitudes, these attitudes may, in turn, elicit perceptions of threat. In other words, threat and right-wing attitudes might be dynamically interrelated and may mutually reinforce each other.

However, the literature is characterized by a scarcity of longitudinal studies that have investigated the relationship between threat and right-wing attitudes over time which would allow researchers to simultaneously test for bidirectional longitudinal relationships (Christ & Wagner, 2013; Cohen, Cohen, West, & Aiken, 2003; Finkel, 1995). Therefore, the aim of the present research was to investigate these longitudinal relationships using a cross-lagged panel design in which threat and right-wing attitudes are measured at three points in time. More specifically, we studied the longitudinal direct effects of both internal (i.e., threat originating

from the private life of an individual) and external threat (i.e., threat stemming from the society) (Onraet et al., 2013a, Onraet & Van Hiel, 2013).

Right-Wing Ideological Attitudes

Scholars have argued that right-wing attitudes can be differentiated into the social-cultural and economic-hierarchical domain (see, Duckitt, 2001; Jost et al., 2003; Middendorp, 1978). A typical indicator of right-wing social-cultural attitudes is Right-Wing Authoritarianism (RWA, Adorno et al., 1950; Altemeyer, 1981). Authoritarian individuals uncritically submit to authorities, adhere to mainstream social norms and tradition, and show aggressiveness towards those deviating from these norms and values. Furthermore, a number of studies have consistently demonstrated that RWA is strongly related to generalized prejudice, political conservatism, and ethnocentrism (e.g., Altemeyer, 1981; Crowson, Thoma, & Hestevold, 2005; Dhont & Van Hiel, 2009; Duckitt & Sibley, 2007; Hodson, Hogg, & MacInnis, 2009).

A typical indicator of the economic-hierarchical domain is Social Dominance Orientation (SDO). Introduced by Pratto, Sidanius, Stallworth, and Malle (1994), this concept is defined as a general social attitude expressing individual's preference for hierarchically structured group relations and inequality among social groups (Pratto et al., 1994, Sidanius & Pratto, 1999). Similar to RWA, SDO has been shown to be strongly related to a wide range of sociopolitical phenomena such as generalized prejudice, political conservatism, and ethnocentrism (e.g., Dhont & Van Hiel, 2009; Pratto et al., 1994; Sibley & Duckitt, 2010; Sidanius & Pratto, 1999). Recently, Ho et al. (2012) reported that SDO consists of two distinct, but correlated dimensions; SDO-Egalitarianism, referring to an individual's preference for inequality between groups, and SDO-Dominance, referring to an individual's preference for the domination of some groups over other groups. Their findings further

suggested that these two dimensions of SDO predict qualitatively different intergroup phenomena (see also, Jost & Thompson, 2000). More specifically, whereas SDO-E was related to more subtle forms of intergroup bias, such as hierarchy-attenuating social policies, political conservatism, and subtle legitimizing ideologies, SDO-D, instead, was related to active subjugation of outgroups, such as old-fashioned racism, perceptions of zero-sum intergroup competition and aggressive intergroup phenomena (Ho et al., 2012).

Threat and Right-Wing Attitudes

Threat has been hypothesized to be an important correlate of right-wing attitudes by many scholars. Most research attention was directed towards the relationship between threat and authoritarianism (e.g., Bonanno & Jost, 2006; Doty, Peterson, & Winter, 1991; Duckitt & Fisher, 2003; McCann, 1999; Sales, 1972). The Dual Process Model of social attitudes (DPM; Duckitt, 2001; Duckitt & Sibley, 2009; Perry, Sibley, & Duckitt, 2013) postulated that perceptions of the world as a dangerous and threatening place are related to RWA. This model also postulates that SDO is related to perceptions of the world as a competitive place, which can be considered a threat as well. Empirical research has shown that especially intergroup threats, such as realistic and symbolic threat and intergroup anxiety, are related to SDO (e.g., Hodson et al., 2009; Matthews, Levin, & Sidanius, 2009; Morrison & Ybarra, 2008).

The relationships between threat and RWA and SDO have been supported by two meta-analyses as well, revealing moderate to strong effect sizes for the relationship between threat and right-wing attitudes. The meta-analysis of Jost et al. (2003) reported strong effect sizes between fear of threat and loss, mortality salience, and system instability (including economic, social, and political threat) on the one hand, and right-wing attitudes on the other hand. In the second meta-analysis, Onraet et al. (2013a) provided evidence for a moderate relationship between external threat and right-wing attitudes, whereas this relationship was

curbed for internal threat. However, a major downside of most studies investigating the relationship between threat and right-wing attitudes is their use of a cross-sectional design, which does not allow us to ascertain the direction of these relationships. While some scholars have suggested that threat leads to an increase in right-wing attitudes, other researchers have argued that having right-wing attitudes leads to an increased perception of threat. In the next sections, we discuss both proposed relationships in more detail.

Threat leads to higher levels of right-wing attitudes.

In the face of threat, people engage in a number of behaviors that help them to cope with their negative feelings. For example, Proulx and colleagues (e.g., Proulx & Inzlicht, 2012; Proulx, Inzlicht, & Harmon-Jones, 2012) argued that when people experience inconsistencies, they display palliative behaviors which buffer against the aversive arousal that emerges from these inconsistencies. People might, for example, adopt their attitudes or affirm other, sometimes unrelated, meaning frameworks. Along similar lines, a right-wing belief system has been theorized to have a threat-managing function. Since the publication of The Authoritarian Personality (Adorno et al., 1950), theories on right-wing attitudes have suggested that (the perception of) threat lies at the basis of these attitudes. Adorno et al. (1950) described authoritarianism as a syndrome based on anxiety, which may even be rooted early in life as a result of inconsistent child-rearing practices and a threatening childhood environment. Similarly, Wilson (1973) argued that conservatism is the result of a "generalized susceptibility to experiencing threat or anxiety in the face of uncertainty" (p. 259). More recently, the model of motivated social cognition (Jost et al., 2003) posited that people adhere to right-wing attitudes in the face of threat in order to achieve security and safety. Similarly, Oesterreich (2005) conceptualized authoritarianism as a "flight into security"; a basic and functional reaction to threatening situations. Finally, the DPM (Duckitt, 2001; Duckitt &

Sibley, 2009; Perry, Sibley, & Duckitt, 2013) postulated that dangerous and competitive worldviews lie at the basis of RWA and SDO, respectively.

Several empirical studies have corroborated this theoretical idea. First, archival studies revealed that in times of societal threat, authoritarian attitudes and behaviors increased (e.g., Doty et al., 1991; McCann, 1999; Sales, 1972). Other more recent studies investigating the impact of the major terrorist attack of 9/11, found that it evoked a shift towards conservatism among high-exposure survivors (Bonnano & Jost, 2006), and led to an increase in authoritarian sentiments as reflected in letters to the editor published in US newspapers (Perrin, 2005). Second, some experimental evidence has corroborated the causal direction of threat to right-wing attitudes. For example, Duckitt and Fisher (2003) have demonstrated that exposing participants to hypothetical scenarios describing a threatening future leads to an increase in authoritarianism (see also, Jugert & Duckitt, 2009). Similarly, Asbrock & Fritsche (2013) found that manipulating terrorist threat leads to increased authoritarianism.

Other scholars have shown that threat also lies at the basis of SDO. For example, Morrison and Ybarra (2008) manipulated feelings of realistic threat and found an increase in SDO among individuals who highly identified with their racial group. Furthermore, using a longitudinal study, Matthews et al. (2009) revealed that perceptions of realistic threat and intergroup anxiety at the end of the first year of college were related to higher SDO levels at the end of their second and third year of college.

Right-wing attitudes underlie perceptions of threat.

Threat can affect attitudes, but having particular attitudes might also influence perceptions of threat. This process can be considered to be a form of motivated reasoning (e.g., Kunda, 1990; Redlawsk, 2002). People are motivated to perceive and interpret information in line with what they already believe, rather than processing information in

unbiased ways. People tend to perceive evidence that confirms their pre-existing social attitudes as more convincing and valid than evidence challenging their attitudes (e.g., Lord, Ross, & Lepper, 1979; Munro & Ditto, 1997). Applied to the relationship between right-wing attitudes and threat, people with right-wing attitudes want to confirm and justify their beliefs and are therefore motivated to perceive and interpret the surrounding external world as dangerous and threatening. In line with this view, some authors have suggested that enhanced threat perceptions are a consequence, rather than a cause, of right-wing attitudes (e.g., Cohrs, Duckitt, Funke, & Petzel, in press; Cohrs, 2013). More specifically, this view holds that individuals with right-wing attitudes are more likely to perceive threats than individuals with left-wing beliefs. For example, in their integrated threat theory, Stephan and Renfro (2002) have suggested that authoritarians are more likely to perceive all sorts of threat, which then serves as a direct predictor of prejudice. Furthermore, the DPM (Duckitt, 2001; Duckitt & Sibley, 2009) not only suggests that dangerous and threatening contexts and worldviews predict greater authoritarianism, but also that having authoritarian views leads to more perceived threats, which in turn leads to prejudice, ethnocentrism, and nationalism.

Evidence for this view comes only from a number of studies, which unfortunately solely rely on cross-sectional designs. For example, Cohrs and Ibler (2009) reported that the relationship between RWA and ethnic prejudice was mediated by perceived threat from ethnic outgroups. Similarly, McFarland (2005) has shown that the perception of Iraq as threatening the US, mediates the relationship between authoritarianism and the support for an American intervention in Iraq. Furthermore, on the basis of experimental tasks using automatic word recognition, Lavine, Lodge, Polichak, and Taber (2002) have shown that high scoring authoritarians are more sensitive to threatening information than low scorers.

Reciprocal relationships between threat and right-wing attitudes.

Given that scholars have argued that both an effect of threat on right-wing attitudes and an effect of right-wing attitudes on threat exist, it is surprising that only a few studies have tried to substantiate bidirectionality in this relationship (Matthews et al., 2009; Rippl & Seipel, 2012; Sibley & Duckitt, 2013; Sibley, Wilson, and Duckitt, 2007). Whereas Matthews et al. (2009) showed that perceptions of realistic threat and intergroup anxiety increased SDO, they also found a reverse longitudinal relationship between SDO and realistic threat. However, these authors did not investigate both longitudinal relationships simultaneously. Sibley et al. (2007) reported on bidirectional effects, and obtained evidence for such effects between dangerous worldviews and authoritarianism using a time lag of five months. Similar results were found using a time lag of one year during a period of global recession (Sibley & Duckitt, 2013). Finally, in the context of EU enlargement, Rippl and Seipel (2012) also reported bidirectional effects between threat perceptions and authoritarianism.

While these previous studies serve as important indications that the relationship between threat and right-wing attitudes is bidirectional, some limitations of these studies should be noted. First, whereas Sibley et al. (2007) and Sibley and Duckitt (2013) investigated dangerous and competitive worldviews and Rippl and Seipel (2012) differentiated between two specific threats (i.e., material and cultural threat), the primary aim of these studies was not to differentiate among the effects of various threats. Second, Rippl and Seipel (2012) did not investigate SDO and they used a very small sample (N = 91; retention rate of only 18%), which potentially might bias the results due to systematic attrition and the inability to use latent variables. Moreover, these studies investigated threat and right-wing attitudes only at two points in time, which did not allow to replicate longitudinal findings across waves. In the present study, we addressed these shortcomings by conducting a three-wave longitudinal study in a large heterogeneous sample, over a total time period of 19

months, investigating bidirectional relationships between threat and the right-wing attitudes RWA and SDO. Moreover, we distinguish between internal and external threat.

Internal and External Threat

Although the large body of evidence for the relationship between threat and right-wing attitudes seems to suggest that threat of all types are related to right-wing attitudes, a recent meta-analysis by Onraet and colleagues (2013a) revealed that a distinction should be made between two types of threat, internal and external threat. Internal threat stems from the private life of an individual and is thus only experienced by the individual him or herself, without having any societal relevance (e.g. neurotic anxiety and death anxiety). External threat stems from the society and can be experienced as a threat to the society as a whole, as well as a threat to the individual him or herself (e.g. economic threat and threat to social cohesion). Moreover, concerning the relationship between threat and right-wing ideology, these authors reported that this relationship was curbed for internal threat, while it was significantly stronger for external threat.

A possible explanation for the curbed relationships between internal threat and right-wing attitudes might be that while external threat leads to enhanced levels of right-wing beliefs, internal threat might lead people to affirm their own pre-existing worldviews, no matter what these worldviews are. For example, some scholars have argued that mortality salience makes conservatives more conservative, while it makes liberals more liberal (e.g., Castano et al., 2011; Greenberg, Simon, Pyszczynski, & Solomon, 1992). This would lead to small and non-significant relationships between internal threat and right-wing beliefs. Another possible explanation resides in the fact that different levels of the self can be distinguished, and that within-level relationships are typically stronger than between-level relationships (Johnson, Selenta, & Lord, 2006; Onraet & Van Hiel, 2013). While internal

threat is related to the intrapersonal dynamics and processes (personal level), right-wing attitudes such as RWA and SDO reflect one's convictions about how society should be organized (societal level). Hence, because these variables tap into different levels of the self, their relationship can be expected to be weak. Conversely, because both external threat and right-wing attitudes tap into the societal level, their relationship can be expected to be stronger.

While evidence suggests that internal threat only plays a minor role in right-wing attitudes, another possibility is that internal threat does not yield direct, but indirect effects on right-wing attitudes. Onraet et al. (2013a) reported that the relationship between internal threat and right-wing attitudes is undermined when statistically controlling for external threat, which suggests potential mediating processes. More specifically, individuals who experience strong internal threat might be more susceptible to perceive external threat, which might account for higher levels of right-wing attitudes. A similar chain of processes (although over a much longer period of time) was suggested by Duckitt (2001) who asserted that mental distress early in life underlies social conformity and authoritarianism later in life.

The Present Study

The main goal of the present study was to elucidate whether threat and right-wing attitudes are dynamically interrelated or, stated otherwise, act in a self-enhancing chain of processes. In other words, we investigated the possibility that (experiencing) threat enhances right-wing attitudes, while these attitudes influence perceptions of threat as well. In order to test this hypothesis, we tested bidirectional pathways between threat and right-wing attitudes in a longitudinal design. In line with previous longitudinal studies on this subject, we expected to find evidence for such bidirectional longitudinal relationships (Matthews et al., 2009; Rippl & Seipel, 2012; Sibley et al., 2007; Sibley and Duckitt, 2013). An important

unique feature of this study is that we investigated possible differential longitudinal effects of different types of threat. In line with the findings of Onraet et al. (2013a), we distinguished between internal and external threat. More specifically, this study simultaneously investigated the longitudinal relationships between both internal and external threat and right-wing attitudes. We also tested for the possible indirect effects of internal threat on right-wing attitudes, via external threat.

In order to test these longitudinal effects, we used a full cross-lagged panel design. A cross-lagged panel design enabled us to simultaneously test the effects of threat on right-wing attitudes and the effects of right-wing attitudes to the heightened perception of threat. These cross-lagged effects reflect the 'pure' effects of each variable over time, because both the autocorrelation of each variable is controlled for by the autoregressive paths and intercorrelations of the variables at earlier time points are also controlled for (Christ & Wagner, 2013). By using three waves of data collections, we were able to test full longitudinal meditation (e.g., Cole & Maxwell, 2003; Swart, Hewstone, Christ, & Voci, 2011). More specifically, we investigated the effects of internal threat at Time 1 on external threat at Time 2, and the effects of external threat at Time 2 on RWA and SDO at Time 3, while controlling for external threat and RWA and SDO at Time 1, and internal threat and RWA and SDO at Time 2.

We operationalized right-wing attitudes using RWA and SDO. In line with the research of Ho et al. (2012), we divided SDO in SDO-Dominance (SDO-D) and SDO-Equality (SDO-E). Given that SDO-D and SDO-E have been shown to be related to qualitatively different intergroup phenomena (e.g., Jost & Thompson, 2000; Ho et al., 2012), both dimensions of SDO might also relate differentially to threat. This has been suggested by

Kugler, Cooper, and Nosek (2010), who found that experiencing the world as dangerous and threatening was more strongly related to SDO-D than SDO-E.

Method

The sample of Time 1, as well as the measures of RWA, SDO, internal threat (including neurotic, state, and trait anxiety, death anxiety, and test anxiety), external threat (including dangerous world view, symbolic threat, realistic threat, intergroup anxiety, terroristic threat, economic threat, political threat, and threat to social cohesion) were identical to the sample and measures used in Study 3 of Onraet et al. (2013a). For the present study, we added two more times of measurement (Time 2 and Time 3) with identical measures.

Participants

We collected time 1 data online in April 2010 through a survey company. This nationally representative sample consisted of 800 Dutch adults (1350 people were originally contacted, with a response rate of 59%) who were stratified by age, gender, educational level, and province. The sample had a mean age of 49.46 (*SD* = 15.42) with 46 % females and 54 % males. Thirty four % had a low level, 36% a middle level and 30% a high level of education.

For the data from Time 2[1] (October 2010) the respondents of Time 1 who were still part of the panel of the survey company (*N* = 792) were asked to participate again. Of these respondents, 588 participants completed the questionnaire (response rate = 74%). The Time 2 sample had a mean age of 50.73 years (*SD* = 15.11), and included 47% females and 53% males, and was fairly equally distributed according to education level: 35% had a low level of education, 35% had a middle level of education, and 30% had a high level of education.

For the data from Time 3 (November 2011), the respondents of Time 1 who were still part of the panel of the survey company at that time (*N* = 721) were contacted a third time. Of these respondents, 551 participants completed the questionnaire (response rate = 76%). The

Time 3 sample had a mean age of 51.77 years (*SD* = 15.11) and included 47% females and 53% males. Participants were equally distributed according to their education level (low, middle and high levels, 35%, 35%, and 30%, respectively).

Measures

We administered all measures in Dutch on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), except intergroup anxiety which was measured on a 7 point-Likert scale (1 = strongly disagree; 7 = strongly agree). All items can be found in the Appendix. Tables 1 and 2 in the Online Appendix display the correlations between all scales on all waves (without and with the EM algorithm, respectively) and the Cronbach alphas, means and standard deviations.

Internal threat. We administered three items of the authorized Dutch version of the NEO-PI-R Neuroticism subscale of Anxiety (Costa & McCrae, 1992). We used six items of the State and Trait Anxiety Inventory (translated by Van der Ploeg, Defares, & Spielberger, 1980), three pertaining to trait anxiety and three to state anxiety. Furthermore, we measured death anxiety using three items based on the Death Attitude Profile questionnaire (Wong, Reker, & Gesser, 1994) and test anxiety using three items based on the Test Anxiety Scale (Sarason, 1980).

External threat. We used three items of the dangerous worldview scale (Duckitt, Wagner, Du Plessis, & Birum, 2002) were administered. We included three symbolic threat (based on Stephan et al., 2002), three realistic threat (based on Stephan et al., 2002; see also Dhont & Van Hiel, 2011), and three intergroup anxiety items (based on Stephan & Stephan, 1985). Participants also completed three items measuring perceived terroristic threat (Cohrs, Kielmann, Maes, & Mosher, 2005), three items measuring economic threat (based on

Feldman & Stenner, 1997), three items measuring political threat (Onraet et al., 2013a) and three items measuring threat to social cohesion (based on Feldman, 2003).

Right-wing authoritarianism (RWA). Participants completed six items of Altemeyer's (1981) RWA scale.

Social Dominance Orientation (SDO). Participants completed six items of the SDO scale (Pratto et al., 1994), of which three items pertained to SDO-Dominance (SDO-D) and three item to SDO-Equality (SDO-E).

Results

Preliminary Analyses

Before conducting the longitudinal analyses, we ran three multivariate analyses of variance of the variables under study to determine whether significant differences emerged between respondents who did and those who did not complete the survey at a particular measurement point (Time 2 or Time 3) with respect to their scores on previous measurement points (Time 1 or Time 2). No significant multivariate, Fs < 1.10, nor univariate, Fs < 2.25, ps > .13, differences between any of the groups were obtained, except for a marginally significant difference between the respondents who did and those who did not complete the survey at Time 2 in their Time 1 scores on external threat, $F(1, 798) = 3.09$, $p = .08$. Furthermore, Little's (1988) MCAR test was not significant χ^2 (20) = 20.53, $p = .42$, confirming that the missing data can be considered missing completely at random.[2] Therefore, all respondents who participated at Time 1 (N = 800) were included in the subsequent longitudinal structural equation modeling (SEM) analyses with latent constructs using the full information maximum likelihood method (FIML). The use of FIML has been shown to produce more reliable parameter estimates and standard errors compared to conventional methods used when dealing with missing data (e.g., pairwise or listwise deletion), when

missing data can be considered missing at random (Enders, 2001; Schafer, 1997; see also Swart et al., 2012).

SEM with Latent Factors

To investigate the longitudinal relationships between internal threat, external threat, RWA, SDO-D, and SDO-E over the three waves of data collection, we used SEM with latent variables (Mplus Version 7.1, Muthén & Muthén, 1998-2013). The individual items served as indicators for the latent construct of SDO-D and SDO-E, whereas subsets of items were averaged into three indicator parcels for RWA, and four indicator parcels for internal threat and external threat, in order to smooth measurement error and to maintain an adequate ratio of cases to parameters (Little, Cunningham, Shahar, & Widaman, 2002). The indicators were held equal for all factors across the three waves. Some significant departures from the normal distribution for some variables were obtained. However, the skewness values, ranging from -0.40 to 1.07, were well within the acceptable range of -2.00 to 2.00. Also the kurtosis values ranging from -1.07 to 0.90, were in the acceptable range of -7.00 and 7.00 (see, West, Finch, & Curran, 1995).

All SEM analyses were conducted using a robust maximum likelihood estimation based on the raw data as input. The chi-square test statistic (χ^2), the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR) were used to evaluate the goodness-of-fit of the tested models. A satisfactory fit is indicated by a CFI value close to or higher than .95, an RMSEA value close to or lower than .06, an SRMR value close to or lower than .08 (e.g., Hu & Bentler, 1999). In comparing the relative goodness-of-fit of nested models, we used the corrected chi-square difference (corrected $\Delta\chi^2$) test (Satorra & Bentler, 2001).

Longitudinal measurement invariance

Before testing latent longitudinal models and making meaningful model comparisons, we needed to investigate whether the measurement model could be considered sufficiently equal over time, by establishing longitudinal measurement invariance (MI) (Byrne, Shavelon, & Muthén, 1989; Little, Preacher, Selig, & Card, 2007; Meredith, 1993). Therefore, we first tested a longitudinal measurement model including all latent constructs from each time point with freely estimated parameters (i.e., configural invariance). The residual errors of parallel indicators were allowed to correlate in all models, reflecting stability in systematic error over time. This longitudinal measurement model showed good model fit, $\chi^2(1068) = 1953.62$, $p < .001$; CFI = .967; RMSEA = .032; SRMR = .060. [3] [4]

Next, we compared the model fit of the unrestricted model (with freely estimated parameters across all three time points) with a model in which we constrained the factor loading of parallel indicators to be equal across Time 1 and 2, imposing metric MI across the first two waves. The fit of this second model was still very good, $\chi^2(1080) = 1973.26$, $p < .001$; CFI = .967; RMSEA = .032; SRMR = .060 and showed only a marginally significant difference with the unconstrained model, corrected $\Delta\chi^2$ (12) = 19.71, $p < .08$. Also further constraining the factor loadings of parallel indicators to be equal across all three waves did not significantly worsen the model fit, $\chi^2(1092) = 1994.06$, $p < .001$; CFI = .967; RMSEA = .032; SRMR = .061, showing only a marginally significant difference compared to the previous model, corrected $\Delta\chi^2$ (12) = 20.70, $p < .06$. The assumption of longitudinal metric invariance was thus sufficiently supported, allowing us to meaningfully test and compare longitudinal models (Brown, 2006; Byrne et al., 1989).

Longitudinal model

To investigate the longitudinal relationships between internal and external threat and right-wing attitudes (i.e., RWA, SDO-D, and SDO-E), we assessed several models with

varying parameter restrictions. In all models, we controlled for the stability effects of all factors over time (i.e., including the autoregressive paths) as well as for the associations between the factors within each wave, by allowing the variables to covary at Time 1 and the latent factor residuals to be correlated Time 2 and Time 3 (see Table 1). Furthermore, we controlled for the demographic variables, age, gender, and educational level, by including paths from these demographics to all Time 2 and Time 3 variables. This way we excluded the possibility that significant relationships among the variables of interest could be explained by spurious effects due to shared variance with the demographic variables.

We first tested a model including the paths from Time 1 internal and external threat to Time 2 right-wing attitudes from Time 1 right-wing attitudes to Time 2 internal and external threat, from Time 2 internal and external threat to Time 3 right-wing attitudes, and from Time 2 right-wing attitudes to Time 3 internal and external threat. These models thus tested all bidirectional paths between the two threat variables and right-wing attitudes. Finally, because longitudinal relationships between both types of threat are plausible, we also included bidirectional paths between internal and external threat in our model.

In the first model (Model 1a), we allowed the parameters of the cross-lagged paths to be freely estimated, yielding a good model fit, $\chi^2(1257) = 2747.71$, $p < .001$; CFI = .946; RMSEA = .039; SRMR = .082. We then tested a more restrictive model (Model 1b) in which we constrained the paths between Time 1 and Time 2 to be equal to the same paths between Time 2 and Time 3 to test the assumption of stationarity (Cole & Maxwell, 2003), increasing model parsimony. Model 1b also had a good model fit, $\chi^2(1271) = 2768.35$, $p < .001$; CFI = .946; RMSEA = .038; SRMR = .082, which was not significantly worse than Model 1a with freely estimated cross-lagged paths, indicating that the assumption of stationarity is tenable, corrected $\Delta\chi^2$ (19) = 23.19, $p = .23$. The results of this model test supported the hypothesis

that threat and right-wing attitudes are related in a bidirectional way. However, the results of the path estimates also showed some differences between RWA, SDO-D, and SDO-E in their relationship with external and internal threat.

Figure 1 presents the results (standardized estimates) of the model. Internal and external threat showed positive bidirectional cross-lagged relationships, indicating that internal threat at Time 1 and Time 2 had a significant effect on, respectively, external threat at Time 2 and Time 3, but also that external threat at Time 1 and Time 2 had a significant effect on internal threat at Time 2 and Time 3, respectively. Also external threat and RWA were found to be positively related in a bidirectional way, showing an effect of external threat at Time 1 and Time 2 on, respectively, RWA at Time 2 and Time 3, and an effect of RWA at Time 1 and Time 2 on, respectively, external threat at Time 2 and Time 3. Furthermore, external threat at Time 1 and Time 2 had a significant positive effect on both SDO-D and SDO-E at Time 2 and Time 3, respectively, whereas the effect of SDO-D at Time 1 and Time 2 on, respectively, external threat at Time 2 and Time 3 was only marginally significant. The effect of SDO-E at Time 1 and Time 2 on, respectively, external threat at Time 2 and Time 3 was non-significant. All cross-lagged paths between internal threat and the three right-wing attitudes were non-significant, *p*s > .13.

Next, to get an indication of the relative strength of the paths from external threat to the three right-wing attitudes as compared to the reverse paths, the cross-lagged paths from external threat to RWA, SDO-D, and SDO-E, respectively, were constrained to be equal to the cross-lagged paths from, respectively, RWA, SDO-D, and SDO-E, to external threat. Applying this parameter constraint to the relationships between external threat and SDO-E, significantly worsened model fit, corrected $\Delta\chi^2$ (1) = 6.16, p = .01. Applying this constraint to the relationships of external threat with, respectively, RWA and SDO-D, did not lead to

inferior fit, corrected $\Delta\chi^2$ (1) = 0.26, p = .61 and corrected $\Delta\chi^2$(1) = 1.09, p = .23. Hence, only for the relationship between external threat and SDO-E, we obtained evidence that the path from external threat to right-wing attitudes is significantly stronger than the reverse path, suggesting causal dominance.

We also tested if the relative magnitude of the paths from external threat to each of the right-wing attitudes by constraining the cross-lagged paths from external threat to RWA, SDO-D, and SDO-E to be equal to one another. Constraining the cross-lagged paths from external threat to RWA and SDO-D to be equal only yielded only a marginally significant difference in model fit, corrected $\Delta\chi^2$ (1) = 2.26, p < .10, and constraining the cross-lagged paths from external threat to RWA and SDO-E and from external threat to SDO-D and SDO-E did not significantly worsen model fit, corrected $\Delta\chi^2$(1) = 0.001, p = .98 and corrected $\Delta\chi^2$(1) = 2.04, p = .15. Hence, the relationships between external threat and right-wing attitudes are comparable in strength across the different measures.

Finally, even though internal threat was not directly, significantly related to right-wing attitudes over time, internal threat may still yield indirect effects on right-wing attitudes via the mediating role of external threat. Therefore, we estimated the indirect effects (M-Plus uses the Multivariate Delta Method; MacKinnon, 2008) of internal threat at Time 1 on right-wing attitudes at Time 3. In this model we also added the direct paths from Time 1 internal threat to the right-wing attitudes at Time 3 (Cole & Maxwell, 2003), which were non-significant, ps > .27. Furthermore, we found that all total and total indirect effects of Time 1 internal threat on Time 3 right-wing attitudes were non-significant, all ps > .25, except for one marginally significant total effect on Time 3 SDO-D, β = .07, p = .09. Hence, no convincing evidence was obtained for an indirect effect of internal threat on right-wing attitudes.

General Discussion

The present study makes a unique contribution to the literature by simultaneously investigating the longitudinal relationships between both internal and external threat and the right-wing attitudes RWA and SDO. Previous studies investigating the longitudinal relationships between threat and right-wing attitudes found evidence for bidirectional relationships (Matthews et al., 2009; Rippl & Seipel, 2012; Sibley et al., 2007; Sibley and Duckitt, 2013). However, these studies had some shortcomings, which we addressed in the present study. Our results revealed that external threat leads to enhanced levels of right-wing attitudes, while being authoritarian also leads to enhanced perceptions of threat. Moreover, we did not find convincing evidence for an indirect effect of internal threat on right-wing attitudes. Such an indirect effect was suggested by Onraet et al. (2013a), who reported that the relationship between internal threat and right-wing attitudes disappears after statistical control of external threat. The lack of an indirect effect in the present study neither corroborates the idea that early-life internal threat underlies external threat later on in life, which in turn may evoke right-wing attitudes. However, as the present study examined a time span of only 19 months, the present results do not constitute a strong test of the hypothesized long term perspective on the development of right-wing attitudes. Hence, when these variables are examined during a longer period of time, and especially when internal threat is measured at a young age, indirect effects of internal threat on right-wing attitudes might still emerge.

Bidirectional Relationship Between External Threat and Right-Wing Attitudes.

While we did not find significant longitudinal effects of internal threat, the present results revealed that external threat yields a small, but significant, longitudinal effect on RWA and SDO-E and a moderately strong longitudinal effect on SDO-D. The present set of results thus suggests that increased perceptions of threat evoke higher levels of RWA and SDO later

in time. These findings are in line with theoretical perspectives considering right-wing attitudes as a set of attitudes that can change as a function of contextual influences, and more specifically the degree of situational threat (e.g., Duckitt, 2001; Jost et al., 2003; Oesterreich, 2005). Some of these perspectives argue that right-wing attitudes serve an ego-defensive function, buffering against the negative implications of social threats. For example, Jost et al. (2003) states that "… specific motives relating to the management of fear and uncertainty are associated with the ideology of political conservatism" (p. 366). In other words, adhering to these attitudes in the face of threatening events might help these individuals to maintain their psychological equilibrium and well-being. More specifically, the promotion of beliefs enclosing a preference for one's group to have more power than other groups (SDO), or beliefs to support authoritarian social control (RWA), can give threatened individuals a sense of security and certainty which allows them to cope with threats.

Besides the longitudinal relationships between external threat and right-wing attitudes, we also found evidence for the reverse relationship, at least for RWA. More specifically, we found small, but significant longitudinal effect of RWA on external threat, indicating that high RWA leads to perceptions of elevated threat. This findings aligns well with theories considering right-wing attitudes as a stable trait, which sets the frame for experiencing more threat, potentially leading to elevated authoritarian behaviors (e.g. Cohrs & Ibler, 2009; Stephan & Renfro, 2002). Thus, whereas the perspective of right-wing attitudes as a set of changing attitudes dependent on specific situational features (like external threat) at first seems incompatible with the dispositional perspective of right-wing attitudes, the present bidirectional relationships suggest that both perspectives might be in fact complementary. More specifically, external threat and right-wing attitudes might be dynamically interrelated, reinforcing one another.

In the remainder of the discussion, we first discuss potential mediators in the relationship between threat and right-wing attitudes, and vice versa. Next, we focus on some concerns that can arise based on the present finding. More specifically, we discuss the weak effect sizes and possible spuriousness. Finally, we reflect on whether the present findings can be more generally applied to other countries or political systems.

Potential Mediating Processes.

Given the present findings, the question might arise through which psychological processes threat affects right-wing attitudes and whether the same processes apply in explaining the reverse relationship. We here present some tentative reflections, although future research should tackle this issue. For the effect of threat on right-wing attitudes, various cognitive and affective processes might play a role. Thorisdottir and Jost (2011), for example, reported that manipulations of threat led to increased motivated closed-mindedness, which predicted an increase in self-reported political conservatism. Furthermore, feeling threatened can also lead to a reduction of motivation and capacity to process information, evidenced by a constrained availability of mental resources (e.g., Mathews & MacKintosh, 1998), narrowed focus of attention and restriction of processed stimuli (e.g., Broadbent, 1971, Easterbrook, 1959) which may relate to right-wing attitudes (Van Hiel, Onraet, & De Pauw, 2010). Besides cognitive processes, affective experiences might also play a mediating role in the relationship between threat on right-wing attitudes. Threat may elicit different types of negative emotions (such as fear, anger, hostility, disgust, worry and sadness) and subsequent appraisals (e.g., Lerner, Gonzales, Small & Fischoff, 2003; Sadler, Lineberger, Correll & Park, 2005), which may shape and change attitudes (e.g., Lambert et al., 2010; Lerner & Keltner, 2000).

For the reverse longitudinal effect of right-wing attitudes on threat perception, the mediating processes may be different. More specifically, this effect can be considered a form

of motivated reasoning (e.g., Kunda, 1990; Redlawsk, 2002). People are motivated to perceive and interpret information in line with what they already believe, rather than processing information in an unbiased way. Studies have reported that people tend to perceive evidence that confirms their pre-existing social attitudes as more convincing and valid than evidence challenging their attitudes (e.g., Lord et al., 1979; Munro & Ditto, 1997). Applied to our present findings, because people with right-wing attitudes want to confirm and justify their beliefs, they are motivated to perceive and interpret the surrounding external world as dangerous and threatening and might therefore also have a better memory of such perceptions.

Critical Reflections.

Compared to the meta-analytic effect sizes of .43 and .25 for the relationship of external threat with RWA and SDO, respectively (Onraet et al., 2013a), the magnitudes of the longitudinal relationships between these variables reported in the present study were rather small. However, given the statistical analysis of a cross-lagged longitudinal model, small effects are not that surprising. More specifically, because we control for prior levels of each variable by including autoregressive paths, a substantial part of the variance is already explained by prior levels of the same variable (see for example, Binder et al., 2009). When investigating variables, such as RWA and external threat, that show rather high stability over time (see Figure 1), not much variance is left for lagged effects of other variables, resulting in potential weak effects. However, weak effects may accumulate over time and result in larger effects when adapting a larger time lag between the measurement points.

A second issue arising is that, the present longitudinal effects might reflect spuriousness (Kenny, 1975) instead of causal effects. More specifically, the supposed causal relationships between these variables might result from indirect correlations with third variables. According to Little et al. (2007), spuriousness might be eliminated by the inclusion

of covariates in the model. In our study, we have controlled for the effects of demographic variables (age, sex, and educational level), but we were not able to include other third variables that might contribute to the obtained relationships. Another way to eliminate spuriousness is to conduct experiments with random assignment. Indeed, while longitudinal designs allow for a stronger test of causality than cross-sectional designs, only experimental designs constitute a waterproof test of causality. Unfortunately, not all variables can be manipulated experimentally, and while external threat can be straightforwardly manipulated (e.g., Asbrock & Fritsche, 2013; Duckitt & Fisher, 2003), experimental manipulations of right-wing attitudes are not easy to implement. Hence, for investigating the causal effects of right-wing attitudes on perceptions of threat, longitudinal designs might not be ideal, but because of methodological limitations they are the best option to shed a light on causality. However, we should be cautious in interpreting these results in terms of causality as they might reflect spuriousness.

Finally, given that the present study is conducted in a typically western sample (i.e., the Netherlands), the question arises whether we would obtain similar results in other countries with other political systems. Unfortunately, a scan of the literature on threat and ideological attitudes reveals that almost all empirical studies have been based on western samples. However, a recent cross-national study reported by Onraet, Van Hiel, and Cornelis (2013b) on the basis of data from 91 countries, also including many non-western countries, revealed when countries are characterized by high levels of threat (e.g., high unemployment, low life expectancy), their population tends to be more right-wing as well. Although this relationship has been established on the cross-national level, it seems to suggest that the relationship between threat and right-wing attitudes might be universal, and that similar relationships can be expected in other cultures as well.

Conclusion

The present study offers an important empirical contribution to the growing body of research on the relationship between threat and right-wing attitudes, by providing evidence for bidirectional relationships between external threat and right-wing attitudes.

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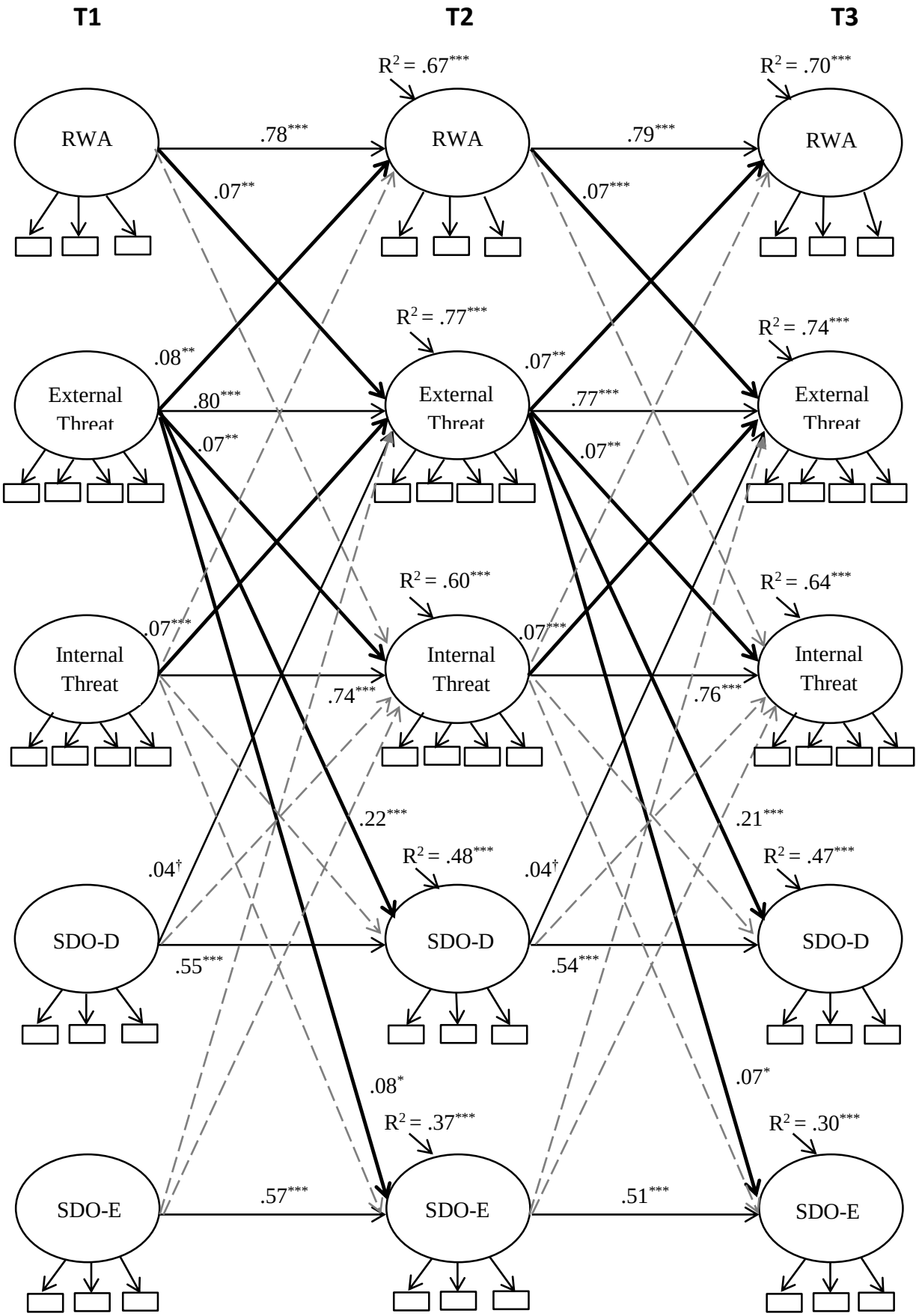
Table 1. Correlations between T1 latent variables (left side of the table) and T2 and T3 latent residuals (right side of the table; T2 above the diagonal, T3 below the diagonal). * p < .05; ** p < .01; *** p < .001

	Time 1 correlations					Time 2 and 3 residual correlations				
	Internal Threat	External Threat	RWA	SDO-D	SDO-E	Internal Threat	External Threat	RWA	SDO-D	SDO-E
Internal Threat	-	.40***	.12**	.19***	.03	-	.26***	.00	.04	.03
External Threat		-	.49***	.42***	.16***	.29***	-	.04	.13**	.11*
RWA			-	.38***	.14***	.01	.08	-	.09	.01
SDO-D				-	.34***	.06	.20***	-.04	-	.08
SDO-E					-	.13**	.15***	.11	.05	-


T1
T2
T3
RWA
External Threat
Internal Threat
SDO-D
SDO-E
$R^2 = .67^{***}$
$R^2 = .70^{***}$
$R^2 = .77^{***}$
$R^2 = .74^{***}$
$R^2 = .60^{***}$
$R^2 = .64^{***}$
$R^2 = .48^{***}$
$R^2 = .47^{***}$
$R^2 = .37^{***}$
$R^2 = .30^{***}$
$.78^{***}$
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$.08^{*}$
$.07^{*}$

Figure 1. Model showing the longitudinal relationships (standardized estimates) between threat and right-wing attitudes, controlling for demographics (i.e., age, gender, and educational level). The latent factors at Time 1 and the latent factor residuals at Time 2 and 3 were allowed to be correlated with one another at each respective time point.

Note. Solid paths represent significant relationships whereas the grey, dashed paths were non-significant. R^2 = explained variance. T1 = Time 1; T2 = Time 2; T3 = Time 3. * $p < .05$;*** ** $p < .01$;*** $p < .001$; † $p < .08$

Appendix

Items of scales used in the present study (all items are the same for the three waves).

Right-wing attitudes	
RWA	Obedience and respect for authority are the most important virtues children should learn.
	The real keys to a good life are obedience, discipline and staying on the right track.
	Laws have to be enforced without mercy, especially when dealing with agitators and revolutionaries.
	It is important that the rights of protestors against the authorities are protected.
	It is good that nowadays young people have more opportunities to protest against authorities.
	The courts are right in going easy on drug users. Punishment would not do any good in cases like these.
SDO-D	This country would be better off if we cared less about how equal all people are.
	Some people are simply not the equals of others.
	Some people are simply inferior to others.
SDO-E	We must increase social equality.
	Equality is an important value to me.
	We should try to treat one another as equals as much as possible

External threat	
Dangerous Worldviews	Every day as society become more lawless and bestial, a person's chances of being robbed, assaulted, and even murdered go up and up.
	My knowledge and experience tells me that the social world we live in is basically a dangerous and unpredictable place, in which good, decent and moral people's values and way of life are threatened and disrupted by bad people.
	It seems that every year there are fewer and fewer truly respectable people, and more and more people with no morals at all who threaten everyone else.
Symbolic Threat	I think that immigrants do not have the same mentality as native Dutch people.
	Immigrants have very different norms and values compared to native Dutch people.
	Immigrants and native Dutch people have different family values.
Realistic Threat	Nowadays, immigrants have too much political power and responsibility in our country.
	The presence of immigrants in our country has a negative influence on the Dutch economy.
	Immigrants make it harder for native Dutch people to find a decent job.
Intergroup Anxiety	To what extent do you feel anxious when interacting with immigrants?
	To what extent do you feel scared when interacting with immigrants?
	To what extent do you feel nervous when interacting with immigrants?
Terroristic Threat	Personally, I feel very threatened by terrorism.
	There's a real danger that I myself or my relatives will fall victim to terrorist attacks.
	I feel that my everyday life is affected by possible terrorist activity.
Economic Threat	I worry that I myself or someone from my family will lose their job in the

	near future.
	I worry that I myself or someone from my family will be worse off financially in the near future
	I worry that the available budget for traveling and relaxing for my family and I will decrease in the near future.
Political Threat	I worry that the government withholds important information from the population.
	I worry that politicians do not listen enough to the opinions of the Dutch people.
	I am afraid that the decisions of politicians today will bear important negative consequences in the future.
Threat to Social Cohesion	There have been too many things changing in this country and it's taking a toll on our basic values.
	The values in our society have gone seriously off track
	It seems as if people in this country have less in common than they used to.
Internal Threat	
NEO-PI-R Neuroticism	I worry a great deal.
	I'm more anxious than most people.
	Terrifying thoughts often run through my head.
Trait Anxiety	Generally, I feel nervous and restless.
	Generally, I feel tormented by frightening thoughts.
	Generally, I get tense and upset when I think about my worries.
State Anxiety	At this moment, I am worried about something.
	At this moment, I am ruminating about bad thing that might happen.
	At this moment, I am scared.
Death Anxiety	I have an intense fear of death.
	The prospect of my own death frightens me.
	I am concerned about the fact that death is the end of everything.
Test Anxiety	I freeze when doing things like intelligence tests or important exams.
	Even when I'm well prepared for a test, I feel very anxious about it.
	If I were to take an intelligence test, I would worry a great deal before taking it.

Footnotes

[1] Some data from Time 2 (more specifically, RWA, SDO, economic and terroristic threat) have been previously published in Onraet and Van Hiel (2013). Analyses of longitudinal data have not been reported yet.

[2] Analogously, Little's (1988) MCAR test was also non-significant, $\chi 2$ (85) = 81.85, p = .58, when tested with the indicators that are used to estimate the latent factor scores in the structural equation models instead of the mean scores of the variables for this test.

[3] Also the fit indices for the measurement models at each time point separately indicated sufficient model fit at all three waves of data collection, for Time 1 (N = 800), $\chi^2(109)$ = 404.63, $p < .001$; CFI = .963; RMSEA = .058; SRMR = .054; for Time 2 (N = 588), $\chi^2(109)$ = 342.05, $p < .001$; CFI = .964; RMSEA = .060; SRMR = .047; for Time 3 (N = 551), $\chi^2(109)$ = 359.84, $p < .001$; CFI = .959; RMSEA = .065; SRMR = .064.

[4] This model with separate latent factors for SDO-D and SDO-E, also fitted the data significantly better than a model in which SDO was represented by a single latent factor, $\chi^2(1107)$ = 3972.13, $p < .001$; CFI = .894; RMSEA = .057; SRMR = .086, corrected $\chi^2\Delta(39)$ = 1760.67, $p < .001$.