Navigating the Moral Landscape: Moral Identity Threat and Stress Responses

Examining the relationship between Moral Identity, Group Identification, and Stress

Outcomes in Dutch-International Student Dialogues

Stijn J. Boermans (6469604)

Utrecht University

Master Thesis Social, Health and Organisational Psychology

Track: Social Influence

Supervisor: Elena Bacchini

Second assessor: Hyunji Kim

Date: July 6th, 2023

Word count: 7902

May be made publicly accessible.

Abstract

This study explores the relationship between moral identity threat, stress responses and group identification in the context of intergroup discussions between Dutch and international students. Focusing on the interconnected and globalized society, it specifically examines the experience of potential loss or compromise to one's moral status within an intergroup dialogue. A sample of 50 students (25 dyads) participated in a controlled lab study where each dyad discussed the usage of Dutch and English languages within higher education, a contentious topic in the contemporary academic landscape. Both psychological (self-reported anxiety) and physiological (heart rate) measures of stress were obtained. Results indicated a significant increase in heart rate during the discussion compared to the baseline, suggesting an engagement of participants in the task. However, the anticipated relationships between moral identity threat, group identification, and stress responses (self-reported anxiety and heart rate) were not significant. The study adds to the body of literature on moral identity and stress responses in intergroup dynamics, albeit with null findings, and underscores the complexity of these relationships. It brings forth a range of methodological strengths, such as the incorporation of an intercultural perspective and controlled environment, while also highlighting limitations including the modest sample size and homogeneity, as well as potential issues with the moral identity threat measure. The findings underscore the importance of future research to further understand the complex interplay between moral identity threat, group identification and stress responses in diverse societal settings, which could aid in promoting inclusive environments and well-being.

Keywords: moral identity threat, stress responses, group identification, intergroup dialogues.

Introduction

Intergroup dialogues

As we navigate our way through the complex landscape of modern society, we are confronted with a seemingly endless array of moral decisions and interactions, influencing everything from our personal relationships to our connections with society at large. In this increasingly interconnected society, people from diverse backgrounds find themselves in dialogue on various societal matters more often, sometimes leading to disagreements or conflicts of interests. This thesis focuses on one such specific intergroup setting where dyads of Dutch- and an international students are engaged in a discussion about the changing use of Dutch and English language in their education, an issue where their interests and/or values might differ. Central to these interactions could be the fear of a potential loss or compromise to one's self-perceived moral status, which is defined as moral identity threat. Unlike the broader concept of moral identity, moral identity threat focuses on the apprehension about losing the self-perceived moral standing, leading to potential discomfort or distress. For instance: when discussing a controversial issue with a peer from a different culture, a Dutch student may worry about coming across as prejudiced or biased -which might not align with this students' moral values- and thereby experiencing a threat to their moral identity. In this thesis, I will investigate whether this experience of worrying might possibly manifest in a way that corresponds to a psychological- and/or physiological stress response.

A growing body of literature suggests that our social identity may be closely linked to our mental and physical well-being (Jetten et. al., 2012; Sani et. al., 2015; Haslam et. al., 2009). Additionally, research argues that moral identity, as a core aspect of an individual's self-concept, significantly influences social identification processes and behaviours, indicating an inherent link between one's moral identity and their social identity (Aquino & Reed, 2002; Reed et al., 2007; Hertz & Krettenauer, 2016). Thus, perceived moral threat might not merely be a stand-alone, abstract concern; it could have concrete implications on our bodies and minds. Despite these current findings on moral identity and well-being, a gap in the literature remains in the understanding of the relationship between moral identity threat and its, particularly stressful, effects on our mental and physical state. By focusing on this relationship between moral identity threat and stress in an intergroup setting, this thesis aims to shed light on this intricate interplay. Furthermore, this research could provide a glimpse into how moral identity threat could shape people's attitudes, behaviours, and physiological responses in an intergroup dialogue. Concisely, this thesis aims to explore the potential

relationship between moral identity threat and physiological stress responses in the context of intergroup discussions between Dutch and International students, in the hopes of better understanding the role of moral identity threat in (ethical) decision-making and its impact on overall well-being. The results could possibly contribute to the science of intergroup interactions and might be a small step in the direction of a better understanding of complex intergroup dynamics, ultimately facilitating the creation of a more inclusive environment and society. Essentially, these findings might contribute to existing scientific knowledge, and also serve as a foundation for practical steps towards reducing conflict, managing stress, and promoting well-being in diverse societal settings.

Moral identity & moral identity threat

Aquino et. Al (2009) conceptualize moral identity as the cognitive schema an individual holds about their moral character. Furthermore, moral identity is defined as one kind of self-regulatory mechanism that motivates moral action and guide moral decision-making processes (Blasi, 1984). It is also proposed that moral identity, like other social identities, can be a basis for social identification that individuals use to construct their definitions of self (Aquino & Reed, 2002). In short: moral identity is the extent to which an individual perceives their moral values and beliefs as an integral part of their sense of self and identity. According to Aquino and Reed (2002), moral identity can be seen as a multidimensional construct that includes both internal and external components. The internal refers to an individual's self-perception as a moral person and the importance they place on moral values and beliefs. The external refers to the extent to which an individual's moral identity is recognised and affirmed by others in their social environment. This external aspect of moral identity plays a vital role in shaping the individuals' experience and reactions. When an individuals' moral actions align with the societal or groups' expectations, it can result in a sense of affirmation and a strengthened moral identity (Reed & Aquino, 2003). However, when these actions fail to align, or when an individuals' moral values are not recognized or affirmed by their social environment, this could pose a significant threat to their moral identity.

This occurrence leads to what is referred to as moral identity threat. Moral identity threat is a construct that refers to a specific situation where an individual's moral self-concept is challenged or threatened, which could elicit a range of cognitive and emotional responses, potentially leading to discomfort or distress (Mulder & Aquino, 2013). The concept of moral identity threat has been researched in various contexts including organizational behaviour,

decision making and social psychology. For example: Monin and Jordan (2009) found that in situations where individuals are asked to do something that conflicts with their moral values, they could experience moral identity threat. This threat can lead to different responses like defensiveness, rationalization of immoral behaviour, or an effort to restore the moral self-image. Furthermore, people tend to be motivated to engage in behaviours that could restore their moral self-image when their moral identity is threatened. More of these behaviours include moral compensation, where engage in positive actions to make up for negative or immoral actions, and moral cleansing, where individuals engage in symbolic actions to 'cleanse' themselves of moral impurity (Zhong & Liljenquist, 2006).

Moral identity and group identification

Group identification could also play a role in how individuals respond to moral identity threat. Group identification refers to the sense of belonging to a social group and the emotional significance and meaning attached to this membership (Tajfel, 1981). Higher levels of group identification have been linked to greater cooperation, improved well-being, and reduced stress levels (Haslam et. Al, 2009). It's hypothesized that, when individuals identify strongly with a group, they might feel a heightened sense of moral identity threat if the actions or values of the group are perceived as immoral (Ellemers, Pagliaro, Barreto & Leach, 2008). Group identification could also influence how individuals perceive- and respond to moral dilemmas. Jonathan Haidt, known for his prominent contributions to moral psychology, suggests that individuals who strongly identify with a group are more likely to endorse moral decisions that favour their in-group, even when these decisions conflict with universal moral principles (Haidt, 2001).

To elaborate on this, social identity theory proposes that people's identification with a group can affect their self-concept, behaviour, and values (Tajfal & Turner, 1979). In the context of moral identity, group identification can provide a framework for group members to develop and express their moral selves. One way in which group membership may influence moral identity is through shared norms and values. Research has shown that individuals who identify strongly with a moral community such as social justice organisations or religious groups are more likely to internalize the moral values and beliefs that these groups hold (Aquino & Reed 2002; Skitka, Bauman & Sargis, 2005). Furthermore, group membership can shape the content of a group member's moral identity by providing individuals with moral role models and examples. For example, individuals who identify with a group that emphasizes compassion and helping others may adopt these values and behaviours as part of

their moral identity (Aquino & Reed, 2002; Skitka et al., 2005). Lastly, group membership may also influence the salience of moral identity by emphasizing certain moral issues or concerns. In the literature it has been shown that group membership can influence the extent to which members perceive certain moral violations as relevant and important to their identity (Reed, Aquino & Levy, 2003; Skitka, Bauman & Sargis, 2005). As a result, this can affect group members' motivation to take action and address moral issues.

Further studies have shown that moral identity is linked to a range of outcomes, such as pro-social behaviour (Aquino, Freeman, Reed, Lim, & Felps, 2009; Malti, Gummerum, Keller, & Buchmann, 2009), moral reasoning (Aquino, Reed, Thau, & Freeman, 2007) and well-being (Hardy & Carlo, 2011; Cui et. Al, 2021). Moreover, individuals with a strong moral identity may be more resistant to moral disengagement tactics such as moral justification, euphemistic labelling, and displacement of responsibilities (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Aquino & Reed, 2002). Research also suggests that moral identity can interact with other individual and contextual factors to predict behaviour such as that social norms and situational cues may trigger the activation of moral identity (Reed, Aquino & Levy, 2007). Additionally, group membership may also significantly influence the salience and content of moral identity (Aquino & Reed, 2002; Lapsley & Lasky, 2001).

Moral identity and stress outcomes

As mentioned before, research has shown that a strong moral identity might be beneficial for overall well-being. This fits in the narrative that individuals with a more mature sense of identity have better mental health and experience greater psychological well-being (Schwartz et. Al, 2000). Individuals who have a clear sense of moral values and use these to help them to guide their behaviour may experience greater life satisfaction and psychological health (Aquino & Reed, 2002; Blasi, 1984, Garcia et. Al, 2018). An article by Cui and colleagues also found a significant positive correlation between moral identity and subjective well-being. Subsequently, Hardy and colleagues (2013) found individuals higher on moral identity to report lower anxiety and depressive symptoms, although there has to be accounted for the fact that moral identity is more predictive of health outcomes at higher levels of identity formation (the formation of a mature identity structure), i.e. the significance of valuing morality in relation to one's health is greater if the individual has stronger identity commitments or a more coherent structure of identity.

While having a strong moral identity can be beneficial to one's well-being, it might not always be a stress-free state. Stress is implicitly understood as a state of psychological and psychological arousal in response to a perceived threat or challenge (Selye, 1956). According to Seery's (2013) biopsychosocial model (BPS), threat appraisals stimulate increased arousal and risk-aversive behaviour with a narrow focus on avoiding harm or failure, which can impair performance and health outcomes (McEwen, 1998). On the other hand, challenge appraisals elicit moderate arousal, promoting a broader focus on achieving success and/or growth which potentially enhances performance and positive health outcomes. These appraisals are influenced by a complex interplay of biological responses, like heart rate variability (HRV), psychological traits (such as: personality traits, coping styles, and cognitive appraisal processes.), and social factors such as context and support.

The biopsychosocial model (Seery, 2013) offers a comprehensive framework to understand the potential effects of moral identity threat. In accordance with the BPS-model, the experience of a threat to one's moral identity could be considered a stressful event that could potentially trigger biological, psychological, and social responses. Biologically, such a threat could activate the body's sympathetic-adrenal-medullary (SAM) response, resulting in physiological changes such as an increased heart rate and higher blood pressure (Cannon, 1953). On a psychological level, research shows that moral identity can become a source of anxiety and defensiveness under certain conditions, particularly when it is threatened (Mulder & Aquino, 2013; Skitka et. Al, 2005). This occurrence aligns with the BPS's models' emphasis on individual differences in psychological factors, such as coping styles and cognitive appraisal processes. In terms of social factors, the perception of moral identity threat could also be influenced by social context and social support, such as the BPS-model suggests. For example: the threat to an individual's moral identity could be more intense in situations where one's moral identity is not recognized or affirmed by others in the (direct) social environment (Branscombe et. al, 1999).

In group situations, like Dutch-International student dialogues, the interplay of moral identity threat, stress and group identification could become particularly complex. As mentioned before, as individuals we identify with groups that reflect our values and morals – therefore; any threat to the group could also possibly be perceived as a threat to one's moral identity (Tajfel & Turner, 1979). In that sense, strong identification with a group might amplify the stress experienced by moral identity threat since the threat could be perceived as more personal (Ellemers, Spears & Doosje, 2002). On the contrary, if students do not

strongly identify with their in-group, the impact of moral identity threat might be less pronounced, resulting in lower stress levels.

Research questions and hypotheses

Despite the growing body of research on moral identity, group identification, and stress, surprisingly little attention has been given to the potential interactions between these variables. Especially in the context of Dutch-International student dialogues, it is critical to consider the potential interaction between these variables. Further research on these constructs and their interplay could improve our understanding of how people navigate complex social and moral landscapes, particularly under stressful conditions. This study aims to address this gap in the literature by exploring the relationship between moral identity, group identification, and stress in the context of Dutch-International student dialogues. This leads to the following research questions: what is the relationship between moral identity threat and stress? And: how does group identification moderate the relationship between moral identity threat and stress? These questions suggest the subsequent hypotheses:

> *Hypothesis 1*: **Individuals who perceive higher moral identity threat will experience higher levels of stress (as indicated by self-reports and HR).**

> *Hypothesis 2*: **The relationship between moral identity threat and stress outcomes is moderated by group identification.**

The second hypothesis assumes that a negative relationship between moral identity threat and stress is stronger for individuals who identify highly with their group in comparison to individuals who identify less. See figure 1 for an overview of the dependent-, and independent variables. The hypothesized constructs between all three constructs are visualised in the research model in Figure 1.

Figure 1

Research model visualizing the proposed hypotheses.
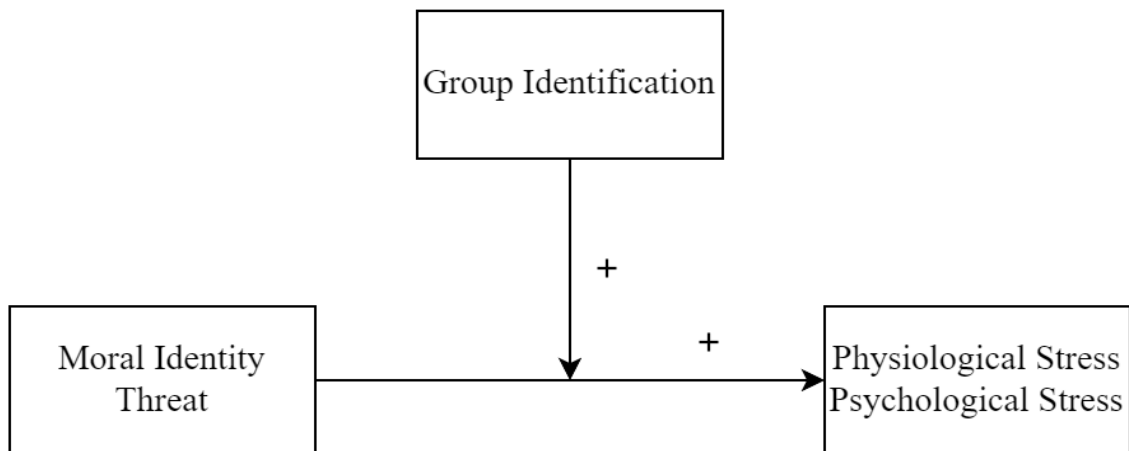
Method

Participants

A G*Power software analysis was performed beforehand to determine the minimum number of participants needed for this study, which was predicated on a linear multiple regression model. Assuming an alpha level of .05, a power of 0.80, and a small effect size (Cohen's f^2) of .03, it was indicated that a minimum of 36 participants would be needed. Eventually a total of 50 participants participated in the study, forming 25 dyads of one Dutch-and one international student (8 male, 42 female) to ensure the intercultural dimension to the discussion. The participants were all over 18 years of age. The ability to fluently converse in the English language was a necessary criterion for participation as the entire procedure was conducted in English. Recruitment was realised through distribution of promotional flyers across the University campus, inviting students to participate in a study where we 'needed their opinion.' Additionally, a convenience sampling approach was employed by the researchers, reaching out to their direct social and academic network. To compensate for their time and participation, participating students received 6 euro's. Participating bachelor Psychology students were also given the choice of receiving 1 Participant Hour Point (PPU): a system used by the department of Psychology to fulfil course requirements for Bachelor's degree students.

Design and procedure

This research utilized a correlational study design to explore the relationships between moral identity threat, stress, and group identification in an intergroup discussion context. This research was carried out in accordance with the ethical guidelines regarding human subject research. Before commencing with the study, the research proposal was reviewed and approved by the Ethics Committee of the Faculty Support Office Social and Behavioural Sciences to ensure ethical integrity of the research design and methods.

Firstly, the Dutch- and international participant dyad was welcomed, briefed, and informed consent was obtained (appendix A). Both participants were then separated from each other using a divider. Thereafter, ECG electrodes were attached to both wrists and beneath the right collarbone. After watching a calm two minute video to measure the baseline heart rate, both participants commenced with the first survey. At the end of the first survey, participants were asked to form an opinion on the topic of the use of Dutch and English language within higher education in the Netherlands. The discussion topic was deliberately chosen to evoke potential intergroup experiences, centring on the debate regarding the use of the English language to create more opportunities for internationals at universities, including the potential switch to English as the sole language for all university courses (see Appendix B for the vignettes used in this study). After individually writing down a personal opinion on the matter, the divider between both participants was removed by the researchers. Variably, the Dutch or International participant shared his/her opinion first, and the other student could respond, followed by a free discussion of 3 minutes. The heart rate biodata was marked in Acqknowledge by the researchers at the start and at the end of the 3 minutes to determine the average heart rate of both participants during the discussion. Thereafter, the divider was put back up and the participants continued with the second part of the survey, in which participants self-reported on their experienced stress, experienced moral identity threat and group identification. After completing the survey, the ECG electrodes were carefully removed, and the participants were debriefed. Lastly, both participants, signed for-, and received their compensation of choice.

Measures

Physiological and psychological stress. The dependent variable stress was measured through both physiological and psychological self-reported measures. Physiological stress was quantified by using an electrocardiogram (ECG) monitor to capture biodata during the intergroup discussions. The heart rate (HR) data was collected and interpreted using

Acqknowledge software, providing an objective, physiological measure of stress. To measure engagement and potential increased physiological stress-levels, the participant average baseline heart rate ($M = 80.93$; $SD = 22.05$) was compared with their average heart rate during the discussion ($M = 88.88$; $SD = 16.72$). Missing baseline heart rate data of one participant was replaced by the average baseline HR of all participants combined. The HR-difference variable was then calculated by subtracting the discussion HR from the baseline HR for each participant, representing the change in HR due to the potential effect of the discussion (also see table 1 in the results section). Psychological stress was evaluated through a self-reported measure of anxiety (self-reported anxiety) experienced during the discussion on five statements e.g., '*During the speech I felt... – Nervous*' (see appendix C for all statements on all measures) with responses ranging from 1 (strongly disagree), to 5 (highly agree). The data on these statements were combined into a single variable with an output on a scale of 1 to 5 (1 = low experience of anxiety, and 5 = high experience of anxiety). In this study, the self-reported anxiety scale demonstrated a reasonably acceptable internal consistency ($\alpha = .64$).

  Moral identity threat. The independent variable, Moral Identity Threat, was measured by three statements, adapted from a study investigating the interaction between social dominance orientation and group threat, comprised of status and moral image threat, in predicting perceived discrimination among White Americans and men (Okuyan & Vollhardt, 2022). These statements were specified for both Dutch and International students separately, e.g.: '*I'm concerned that discussions about international students and study language make Dutch students look bad*' (again, see Appendix C for all statements). The statements were to be answered on a 5 point Likert-scale varying from 1 = highly disagree to 5 = highly agree. The average scores on these statements were combined into a single variable. The merged variable moral identity threat demonstrated a potentially problematic internal consistency ($\alpha = .55$) in this study. An analysis of item removal was conducted to assess if eliminating specific statements would enhance the scale's reliability; however, none of the eliminations substantially increased the alpha level.

  Group identification. The moderating variable group identification was measured by asking students to what extent they agreed on three statements, inspired by-, and adapted from a study by Henry, Arrow & Carini, (1999), e.g.: '*I see myself as a Dutch student*', or: '*I feel strong bonds with other international students.*' These statements were to be answered on a 7 point Likert-scale varying from 1 = highly disagree to 7 = highly agree. The data on these

statements were combined into a single variable. In the current study, the group identification scale demonstrated a reasonably acceptable internal consistency ($\alpha = .67$).

Results

Before conducting the main analyses, several assumptions were checked to validate the use of multiple regression models, including linearity, multivariate normality, homoscedasticity, and absence of multicollinearity. The relationships between the independent and dependent variables were visually examined for linearity. Independence of observations was ensured through the study design. Multivariate normality and homoscedasticity were verified using a combination of statistical tests and visual inspection of histograms and scatterplots. Finally, multicollinearity was assessed by calculating the Variance Inflation Factor (VIF) for each predictor variable. All predictor variables demonstrated VIF values below the commonly accepted threshold of 5, suggesting that multicollinearity was not a concern. Subsequently, A paired-samples t-test was conducted to compare the means of the baseline- and discussion HR-variables, which showed a significant difference in the scores for the baseline- and discussion heartrate conditions; $t(49) = -2.87$, $p = <.05$, indicating that, overall, participants were physiologically engaged during the discussion task. An overview of the main variables used in this study can be found in Table 1.

Table 1

Descriptive Statistics

Variable	N	*Min.*	Max.	M	SD
Moral identity threat	50	1	4	2.14	.77
Group identification	50	3	7	6.04	.98
HR-difference	50	-35	64	6.33	15.58
Self-reported anxiety	50	1	3	1.71	.53

Note. N = total number of participants, M = mean, SD = Standard Deviation

To test the first hypothesis if individuals who perceive higher moral identity threat will experience higher levels of stress, Pearson's correlation coefficients were calculated to determine the bivariate relationship between moral identity threat, self-reported anxiety, and HR-difference. The Pearson correlation coefficient between moral identity threat and Self-Reported Anxiety was found not to be significant ($r(48) = -.08$, $p = .59$). Similarly, the

correlation between moral identity threat and HR-difference was also not statistically significant (r (48) = .18, p = .21). Lastly, the correlation between HR-difference and self-reported anxiety also appears not to be statistically significant (r (48) = -.11, p = .48).

Table 2

Correlations Between Variables

		1.	2.	3.
1. Moral identity threat	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	50		
2. Self-reported anxiety	Pearson Correlation	-.08	1	
	Sig. (2-tailed)	.59		
	N	50	50	
3. HR-difference	Pearson Correlation	.18	.11	1
	Sig. (2-tailed)	.21	.48	
	N	50	50	50

*. Correlation is significant at the .05 level (2-tailed).

**. Correlation is significant at the .01 level (2-tailed).

To test the second hypothesis, multiple regression analyses were performed to examine the effects of moral identity threat and group identification on self-reported anxiety and HR-difference separately. To test for the moderating effects of Group Identification, an interaction term (moral identity threat*group identification) was included in the regression models. For HR-difference as the outcome variable, the interaction term was found not to be statistically significant (b = .32, se = 3.00, p = .92). This suggests that group identification did not significantly moderate the relationship between moral identity threat and HR-difference. For self-reported anxiety as the outcome variable, the interaction term similarly did not prove to be statistically significant (b = -.04, se = 1.01, p = .73). This indicates that group identification also did not significantly moderate the relationship between moral identity threat and self-reported anxiety during the discussion. As seen in table 3 and 4, also none of

the main effects on either HR-difference or self-reported anxiety proved to be statistically significant.

Table 3

Moderation Analysis of group identification on the Relationship between moral identity threat and HR-difference.

Predictor	b	se	t	p	95% C.I.	
					Lower	Upper
Intercept	1.69	42.24	-.04	.97	-86.71	83.32
Moral identity threat (x)	-5.4	17.91	-.30	.76	-41.48	30.63
Group identification (w)	2.57	7.04	.37	.72	-11.60	16.73
Interaction term (x*w)	.32	3.00	.11	.92	-5.72	6.37

Note. b = coefficient, se = standard estimate.

Table 4

Moderation Analysis of group identification on the Relationship between moral identity threat and Self-reported anxiety

Predictor	b	se	t	p	95% C.I.	
					Lower	Upper
Intercept	2.26	1.43	1.59	.12	-.61	5.13
Moral identity threat (x)	.15	.60	.24	.81	-1.07	1.36
Group identification (w)	-.07	.24	.29	.78	-.55	.41
Interaction term (x*w)	-.04	.10	.35	.73	-.24	.17

Note. b = coefficient, se = standard estimate.

Explorative analyses

For additional explorative analyses, the sample was subdivided into Dutch and International participants to investigate potential group-specific moderating effects of group identification. For both self-reported anxiety and HR-difference, separate multiple regression analyses were conducted. For Dutch participants, regression models were computed to examine the impact of moral identity threat and group identification on self-reported anxiety and HR-difference. The interaction term (moral identity threat*group identification) was included to assess potential moderation. Neither for self-reported anxiety ($b = .04$, se $= .15$, $p = .82$), nor for HR-difference ($b = 6.27$, se $= 4.76$, $p = .20$) did the interaction term yield statistical significance, indicating that within the Dutch group, group identification did not

significantly moderate the relationship between moral identity threat and the respective outcome variables. A similar analytical approach was taken with the international student subgroup. For both outcome variables - self-reported anxiety ($b = -.22$, se $= .16$, $p = .19$) and HR-difference ($b = -7.80$, se $= 3.87$, $p = .06$)- the interaction term did not prove to be statistically significant, suggesting that group identification did not significantly moderate the relationship between moral identity threat and these outcomes within the international subgroup either.

Discussion

The goal of this study was to delve deeper into the potential relationships between moral identity threat, stress responses, and group identification in the context of intergroup discussions between Dutch and International students. More specifically, this research sought to explore whether group identification would moderate the relationship between moral identity threat and stress responses, offering a more nuanced understanding of the dynamics of intergroup dialogues in an academic setting.

Moral identity threat and stress outcomes

Results from the correlation analysis indicated that both dependent physiological and psychological measures of stress did not show a significant correlation with the independent variable Moral identity threat. Thus, these findings prove to be inconsistent with the research suggesting that individuals who perceive their social identity as threatened, may experience heightened stress levels (Branscombe et. al, 1999; Ellmers, Spears, & Doosje, 2002), which results in the first hypothesis to be invalidated. The absence of any significant findings could be attributed to several factors. One possible explanation relates to the measurement of the variable moral identity threat. Moral identity threat is a complex, multifaceted construct that could be influenced by a variety of individual situational factors (Reed, Aquino & Levy, 2007). In this present study there was only focused on one particular type of moral identity threat tied to intergroup discussions, which might not have fully captured the range of threats individuals may experience in such situations. Another consideration relates to the nature of the intergroup discussion itself: rather than producing a sense of moral identity threat, it is possible that these discussions were perceived as engaging and potentially enjoyable by the participants. This suggests that the physiological stress response observed, as demonstrated by the increase in heart rate during the discussion, might not have been solely linked to the

perceived moral identity threat, but instead could be a sign of a more general type of threat or emotional arousal. Additionally, the nature of moral identity threat might be more closely tied to specific types of threat not measured in this study, such as threats to resources or other forms of social identity (Tajfel & Turner, 1986). While these results did not support the first hypothesis, they do underscore the complexity of the relationship between moral identity threat and stress, which calls for a more nuanced understanding and measurement of moral identity threat in future research.

Moral identity threat, stress outcomes, and group identification

Contrary to expectations, no significant interaction was found between moral identity and group identification in predicting stress outcomes, resulting the second hypothesis to be rejected. In the explorative analyses, the interaction term also proved not to be statistically significant on either outcomes. These results suggest that group identification did not significantly moderate the relationship between moral identity threat and the respective outcome variables within each subgroup.

Despite the lack of findings, it remains noteworthy that participants in this study reported relatively high levels of group identification ($M = 6.04$, $SD = 0.98$). This observation suggests that they experienced a strong sense of affiliation with their respective in-groups. Research has suggested that a strong sense of group identification might serve as a buffer against the effects of perceived threats or stressors (Haslam et. al., 2005; Branscombe, Schmitt & Harvey, 1999). In the context of this study, it is possible that the high levels of group identification reported by participants may have served as a buffer to the potentially distressing effects of moral identity threat. However, it is also essential to consider the nuances of group identification. A strong group identification may not equally translate to potential buffering effects against stress (Jetten et. al., 2017). Depending on various factors, such as group norms or the nature of the group's intergroup relations, a strong group identification could either be protective, or worsening in the context of stress.

Considering the absence of significant findings and the potential complexities around the role of group identification, future studies could further explore these dynamics. This might involve adopting more nuanced measures of group identification, examining different types of stressors, or including additional moderating or mediating variables to better understand these complex interrelationships.

HR-difference and self-reported anxiety

An additional finding was that the heart rate difference scores and self-reported anxiety also did not significantly correlate, which is a notable result since these variables were expected to measure the same overarching construct of stress. This lack of correlation might seem counterintuitive, but it could be explained by several factors. Firstly, psychological stress (self-reported anxiety) and physiological stress (HR-difference) are related, but separate components of the human stress response. These two responses might not always align, because different stressors might lead to differential activation of these systems (Dickerson & Kemeny, 2004). For instance: cognitive or emotional stressors might trigger a stronger psychological stress response, while physical stressors might elicit a more pronounced physiological stress response. Secondly, a study by Waugh & colleagues (2010) examining cardiovascular and affective responses to threat found that the relationship between self-perceived anxiety and physiological stress markers like heart rate is complex and may not always reflect a linear relationship. An individual's subjective perception of their stress levels can be influenced and 'clouded' by a multitude of factors, such as one's cognitive appraisal of the situation, emotional state, and past experiences with stress. Therefore, someone might report feeling anxious but not exhibit any significant changes in heart rate, or vice versa. Lastly, Gross & Jazaieri's (2014) research on emotion regulation suggests that individual differences, such as stress sensitivity, emotional regulation skills, physical health, and fitness level can all influence how closely self-reported anxiety corresponds with physiological stress markers. For example: people with high emotional awareness and regulation skills might report increased anxiety but are able to keep their bodily arousal in check. These findings suggest that the constructs of physiological and psychological stress might need to be differentiated more clearly in future theories and models of stress. Furthermore, the complexity of human stress responses and its knack for individual differences in emotion regulation underline that a single measure might not capture all aspects of this multidimensional construct, and developing theories that consider individual variations in stress perception, physiological responses, and emotional regulation skills could be an interesting direction for future research.

However, it is important to note that participants did in fact show an increase in physiological arousal (evident from the significant increase in HR) during the discussion compared to the baseline. This suggest that the intergroup discussion task was in some way engaging for the participants but did not necessarily provoke an experience of Moral Identity Threat. Theory suggests there could be several other factors to account for the increase in heart rate during the discussion. Firstly, engaging in discussions requires cognitive

processing, which in turn could increase physiological arousal. According to the cognitive load theory, tasks that demand higher mental effort can lead to an increase in physiological indicators, such as heart rate (Sweller, 1988; Solhjoo et. al., 2019; Romine et. al., 2020). A second explanation could be from Zajonc's (1965) social facilitation theory. The social facilitation theory suggests that individuals may experience increased physiological arousal in the mere presence of others, which could explain the elevated heart rates observed during the discussion. Lastly, it is possible that participants might have been emotionally engaged during the discussion, even if they did not feel morally threatened. A popular study by Mauss & colleagues (2005) demonstrated a link between emotional engagement and physiological changes, such as cardiovascular activation. This suggests that participants could have been emotionally aroused while having the discussion, which might have caused the increased average hear rate. These alternative explanations of increased physiological arousal during intergroup discussions provide a new scope for understanding engagement in such contexts. The results suggest that increased heart rate, indicating higher engagement, doesn't necessarily relate to an experience of moral identity threat, which again highlights the complexity of intergroup dynamics and underlines the possibility that factors beyond stress, such as excitement or interest, could drive bodily responses in these intergroup discussions.

Strengths & Limitations

This study possesses a range of unique methodological strengths that enhances its scientific contribution. One feature is the incorporation of an intercultural/intergroup perspective, characterized by pairing Dutch- and international students in a dyadic discussion. This design encapsulates the evolving nature of globalized academia and provides a practical context in which to examine intergroup dynamics and stress responses. Furthermore, it recognizes the value of diverse perspectives and the complexities of intergroup communication within the educational landscape. Despite the non-significant findings, this study modestly contributes to the existing body of literature on intergroup dynamics, by showing that intergroup discussions may not always be linked to perceived stress and/or the experience of moral identity threat. Lastly, this study underscores the complexity of these relationships and the need for further research to better understand them.

On the contrary, several limitations must be considered when interpreting the findings of this study, which can be broadly categorized in methodological, procedural and design, and sampling issues. Firstly, central to the methodological limitations is the problematic internal consistency of the moral identity threat scale. This scale demonstrated a relatively

low reliability (α = .55), which could partly explain the null findings. The use of a more robust scale with a greater number of (reverse-coded) statements might lead to a more increased, and consistent level of experienced moral identity threat in future studies. Moreover, although both physiological (HR) and psychological (self-reported anxiety) measures of stress were measured, other important dimensions of stress responses such as cortisol levels, blood pressure and other psychological stress indicators were not assessed in this particular study setup. Also, the measures used to quantify group identification were relatively simple and might not have fully captured the complexity and multi-dimensionality of this construct. Future studies could consider implementing a more robust measure of group identification and include a broader range of stress indicators to provide a more comprehensive picture of stress response.

Secondly, concerning procedural and design issues, another limitation is related to the choice of the discussion topic. The discussion topic used in this study may not have provoked a sufficient level of moral identity threat among participants. his could partly explain the absence of any significant effects. It would be beneficial for future research to consider using more personally relevant or controversial discussion topics, as these might elicit a more pronounced and consistent level of moral identity threat.

Lastly, there were some limitations concerning the sample that may have affected the generalizability of the results. The sample size was relatively small (50 participants, 25 dyads), which might have limited the power to detect any small to moderate significant effects. Moreover, there was an overrepresentation of female students with 42 out of 50 participants. The sample also proved to be quite homogenous in its average political orientation and education level, which might have influenced the level of in- and out group experience during the discussion leading to a decreased experience of moral identity threat, group identification and stress responses. Finally, the study assumed comparable reactions to moral identity threats and intergroup dynamics across different cultures (Dutch and international students). However, cultural differences could significantly affect these reactions and have not been accounted for in the study design. For future research, ensuring a more diverse sample could help improve the validity and generalizability of any potential findings.

Conclusion

In a world of increasingly diverse academia, this study explored the relationship between moral identity threat, stress responses, and group identification in a dialogue setting

involving Dutch and international students discussing language use in education and underscores the significance of understanding intergroup dynamics and their potential impact on student stress levels. Although no statistically significant results were found, they nevertheless present practical implications for higher education institutions. Gaining insights into how intergroup interactions can influence stress and group identification can help universities tailor strategies for better intercultural communication and cooperation, ultimately fostering an inclusive environment. The focus of this study - the Dutch-English language debate within the Netherlands' higher education sphere - not only has contemporary relevance but also aligns with the upcoming policy requiring that a maximum of one-third of the courses during a bachelor's degree program may be taught in a language other than Dutch starting from the academic year 2025-2026. Although the findings are modest, they offer potential insight for academic institutions seeking to enhance inclusivity for students from diverse backgrounds.

In summary, this study, despite its non-significant results, contributes to the body of knowledge on moral identity threat, stress responses, and group identification in intergroup settings. It emphasizes the need for further research to optimize stress management and well-being in our increasingly globalized academic landscape.

References

Aquino, K., & Reed II, A. (2002). The self-importance of moral identity. *Journal of personality and social psychology*, 83(6), 1423.

Aquino, K., Freeman, D., Reed, A., Lim, V. K., & Felps, W. (2009). Testing a social-cognitive model of moral behaviour: The interactive influence of situations and moral identity centrality. *Journal of Personality and Social Psychology*, 97(1), 123-141.

Aquino, K., Reed II, A., Thau, S., & Freeman, D. (2007). A grotesque and dark beauty: How moral identity and mechanisms of moral disengagement influence cognitive and emotional reactions to war. *Journal of experimental social psychology*, 43(3), 385 392.

Blasi, A. (1984). Moral identity: Its role in moral functioning. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Morality, moral behavior, and moral development* (pp. 128-139). John Wiley & Sons.

Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of personality and social psychology*, 77(1), 135.

Cannon, W. B. (1953). Bodily changes in pain, hunger, fear, and rage, ed2. Boston, CH Branford, 20- 36.

Cui, P., Mao, Y., Shen, Y., & Ma, J. (2021). Moral identity and subjective well-being: The mediating role of identity commitment quality. *International Journal of Environmental Research and Public Health*, 18(18), 9795.

Dickerson, S. S., & Kemeny, M. E. (2004). Acute stressors and cortisol responses: a theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, 130(3), 355–391.

Ellemers, N., Pagliaro, S., Barreto, M., & Leach, C. W. (2008). Is it better to be moral than smart? The effects of morality and competence norms on the decision to work at group status improvement. *Journal of Personality and Social Psychology*, 95(6), 1397–1410.

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual review of psychology*, 53(1), 161-186.

Garcia, D., Moradi, S., Amato, C., Granjard, A., & Cloninger, K. (2018). Well-being and moral identity. *PsyCh journal*, 7(1), 53-54.

Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: An affective science perspective. *Clinical Psychological Science*, 2(4), 387–401.

Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108(4), 814–834.

Hardy, S. A., & Carlo, G. (2011). Moral identity: What is it, how does it develop, and is it linked to moral action? *Child development perspectives*, 5(3), 212-218.

Hardy, S. A., Francis, S. W., Zamboanga, B. L., Kim, S. Y., Anderson, S. G., & Forthun, L. F. (2013). The roles of identity formation and moral identity in college student mental health, health-risk behaviors, and psychological well-being. *Journal of Clinical Psychology*, 69(4), 364-382.

Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health, and well-being: an emerging agenda for applied psychology. *Applied Psychology*, 58(1), 1-23.

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social psychology*, 44(3), 355-370.

Henry, K. B., Arrow, H., & Carini, B. (1999). A tripartite model of group identification: Theory and measurement. *Small group research*, 30(5), 558-581.

Hertz, S. G., & Krettenauer, T. (2016). Does moral identity effectively predict moral behaviour? A meta-analysis. *Review of General Psychology*, 20(2), 129-140. doi:10.1037/gpr0000074

Jenkins, J. (2014). *English as a Lingua Franca in the international university: The politics of academic English language policy*. Routledge, 2013.

Jetten, J., Haslam, C., & Haslam, S. A. (2012). The social cure: Identity, health and well-being. *Psychology Press*. doi:10.4324/9780203813195

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., & Jones, J. M. (2014). How groups affect our health and well-being: The path from theory to policy. *Social Issues and Policy Review*, 8(1), 103-130.

Lapsley, D. K., & Lasky, B. (2001). Prototypic moral character. *Identity: An International Journal of Theory and Research*, 1(4), 345-363.

Malti, T., Gummerum, M., Keller, M., & Buchmann, M. (2009). Children's moral motivation, sympathy, and prosocial behavior. *Child development*, 80(2), 442-460.

Monin, B., & Jordan, A. H. (2009). Dynamic moral identity: A social psychological perspective. In D. Narvaez & D. K. Lapsley (Eds.), Personality, identity, and

character: *Explorations in moral psychology* (p. 341–354). Cambridge University Press.

Mulder, L. B., & Aquino, K. (2013). The role of moral identity in the aftermath of dishonesty. *Organizational Behavior and Human Decision Processes*, 121(1), 219-230.

Okuyan, M., & Vollhardt, J. R. (2022). The role of group versus hierarchy motivations in dominant groups' perceived discrimination. *Group Processes & Intergroup Relations*, 25(3), NP54-NP80.

Reed II, A., & Aquino, K. F. (2003). Moral identity and the expanding circle of moral regard toward out-groups. *Journal of personality and social psychology*, 84(6), 1270.

Reed, A., Aquino, K., & Levy, E. (2007). Moral identity and judgments of charitable behaviours. *Journal of marketing*, 71(1), 178-193.

Romine, W. L., Schroeder, N. L., Graft, J., Yang, F., Sadeghi, R., Zabihimayvan, M., ... & Banerjee, T. (2020). Using machine learning to train a wearable device for measuring students' cognitive load during problem-solving activities based on electrodermal activity, body temperature, and heart rate: development of a cognitive load tracker for both personal and classroom use. *Sensors*, 20(17), 4833.

Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. (2015). Greater number of group identifications is associated with healthier behaviour: Evidence from a Scottish community sample. *British Journal of Health Psychology*, 20(3), 466-481. doi:10.1111/bjhp.12119

Schwartz, S.J.; Mullis, R.L.; Waterman, A.S.; Dunham, R.M. Ego Identity Status, Identity Style, and Personal Expressiveness: An Empirical Investigation of Three Convergent Constructs. *J. Adolesc. Res*. 2000, 15, 504–521.

Seery, M. D. (2013). The biopsychosocial model of challenge and threat: Using the heart to measure the mind. Social and Personality *Psychology Compas*s, 7(9), 637-653.

Selye, H. (1956). *The stress of life*. New York: McGraw-Hill.

Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of personality and social psychology*, 88(6), 895.

Solhjoo, S., Haigney, M. C., McBee, E., van Merrienboer, J. J., Schuwirth, L., Artino, A. R., ... & Durning, S. J. (2019). Heart rate and heart rate variability correlate with clinical reasoning performance and self-reported measures of cognitive load. *Scientific reports*, 9(1), 1-9.

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. CUP Archive.

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & L. W. Austin (Eds.), *Psychology of intergroup relations*. Nelson-Hall.

Tajfel, H., Turner, J. C., Austin, W. G., & Worchel, S. (1979). An integrative theory of intergroup conflict. *Organizational identity: A reader*, 56(65), 9780203505984-16.

Waugh, C. E., Panage, S., Mendes, W. B., & Gotlib, I. H. (2010). Cardiovascular and affective recovery from anticipatory threat. *Biological Psychology*, 84(2), 169–175.

Zajonc, R. B. (1965). Social facilitation. *Science*, 149(3681), 269-274.

Zhong, C. B., Strejcek, B., & Sivanathan, N. (2010). A clean self can render harsh moral judgment. *Journal of Experimental Social Psychology*, 46(5), 859-862.

Appendix A

Informed Consent

Universiteit Utrecht

Let's talk about it!

March 2023

Dear participant,

Thank you for your interest in our study!

Completing this experiment will take around 40 minutes.

This study consists of answering a few questions and engaging in a short discussion with another student. The discussion will take place with a person you do not know. During this discussion you will have to answer a few specific questions with your discussion partner.

It is important for you to know that while completing the discussion session, we will record your voice. In this study, we also measure your **physiological, behavioural, and emotional responses**. To measure your physiological response, some sensors and electrodes will be attached to your fingers. We ask you to move as little as possible during the experiment so as not to affect the physiological measurements.

Potential risks and inconveniences

You may feel some discomfort from sitting in the same position for a short period of time, but before beginning you will have the chance to sit as comfortably as possible. It is also important to note that the researchers cannot (and will not) use your physiological measurements for medical or diagnostic purposes. As a result, no statement can be made about your health and all data is therefore used for **scientific research only**. We would like to remind you that you always have the possibility to stop your participation throughout the experiment without having to give a reason.

Confidentiality

Recordings will not be linked to any additional personal information that could identify you (e.g., your name). These data will remain **confidential**, meaning that only the researchers involved can access the data. Personal data such as in the voice recordings will be stored

separately from the raw research data. Results obtained from these data will be reported and shared in an **anonymous format**. Any personal information that could identify you will be removed or changed before files are shared with other researchers or results are made public.

The data that will be collected in this study are stored and secured to the highest standards. Data will be used for scientific research purposes only and stored for at least 10 years, in accordance with **guidelines for data storage and privacy**.

Your participation in this study is completely voluntary. If for any reason you may want to stop filling in this questionnaire you may do so at any time.

Compensation

Upon completion of this research, you will be rewarded for your time and effort with 6 euros or 0.45 PPU (for UU psychology bachelor students).

If you have any questions, you may contact us at *e.a.m.bacchini@uu.nl* or contact an external person to this project if you have an official complaint about the study: *klachtenfunctionaris-fetcsocwet@uu.nl*

Appendix B

Vignettes
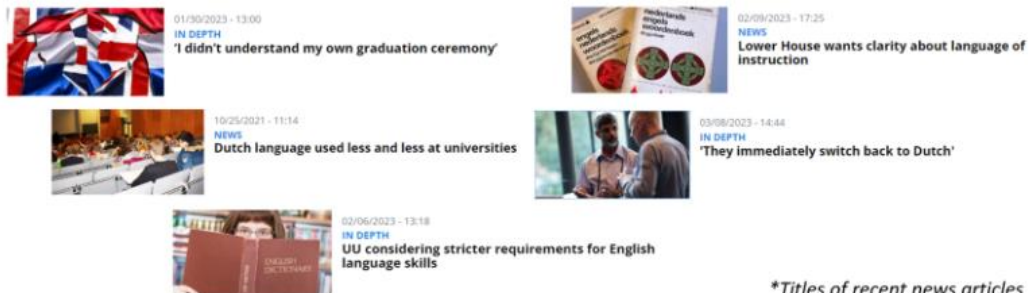
*Titles of recent news articles

In The Netherlands, there has been a focus on integrating international students especially within higher education at different universities across the country. However, it is now clear that there are some advantages and disadvantages to this. **We would like for you to think about the use of Dutch and English language within higher education in the Netherlands. Recent debate says there should be more attention towards internationals and use of the English language to create more opportunities for internationals (for example more availability of English internships, more examples in English during classes and educational events...). There is even a recently proposed policy that asks whether the official language in all university courses should be changed to English. This would mean that no more courses would be offered in Dutch.**

- How do you think this all affects Dutch students?
- How does this make you feel as a Dutch student?
- Share your thoughts, opinions, or concrete examples that support your opinion.

You can for example write about whether you think the situation can be problematic for Dutch students, or whether you think the situation is fair for Dutch students.

Appendix C
Scales

Items for measuring ''moral identity threat''

        Please rate the following statements (Dutch students).

1. I'm concerned that discussions about international students and study language make Dutch students look bad.
2. Discussions about language injustice against international students have led people to have a negative view of Dutch students.
3. The image of ordinary Dutch students as good and moral people is being chipped away.

        Please rate the following statements (international students).

1. I'm concerned that discussions about international students and study language make international students look bad.
2. Discussions about language injustice against international students have led people to have a negative view of international students.
3. The image of ordinary international students as good and moral people is being chipped away.

Items had to be rated on a five point Likert scale ranging from 'highly disagree' to 'highly agree'.

Items for measuring '''self-reported anxiety''

        Now think about the discussion. Please rate the following statements.
During the speech I felt…

1. Upset
2. Frightened
3. Nervous
4. Jittery
5. Confused

Items had to be rated on a five point Likert scale ranging from 'highly disagree' to 'highly agree'.

Items for measuring ''group identification''

The following questions are about your identity as a Dutch student. Please think about you and your fellow Dutch students in your peer group.

To what extent do you agree with the following statements?

1. I identify with Dutch students.
2. I see myself as a Dutch student.
3. I feel strong bonds with other Dutch students.

The following questions are about your identity as an international student. Please think about you and your fellow international students in your peer group.

To what extent do you agree with the following statements?

1. I identify with international students.
2. I see myself as an international student.
3. I feel strong bonds with other international students.

Items had to be rated on a seven point Likert scale ranging from 'highly disagree' to 'highly agree'.