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A cognitive consistency approach to understanding multiple group identification and intergroup attitudes

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**UNIVERSITY OF
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OLLSCOIL LUIMNIGH

**A Cognitive Consistency Approach to Understanding Multiple Group
Identification and Intergroup Attitudes**

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Doctor of Philosophy in Psychology

University of Limerick

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Abstract

There are many reasons in contemporary life why people will relate or refrain from relating to multiple social groups (e.g., migration, historical intergroup conflict, living in a multicultural society, transitioning from one identity to another, or political upheaval). Since social identification and intergroup bias are considered drivers of intergroup conflict, it is increasingly important to understand when people can identify with multiple groups simultaneously and when intergroup bias is likely to occur. The current thesis aims to address these contemporary issues and explain them from a cognitive consistency perspective. The cognitive consistency approach has been applied in many fields in psychology and is based on the principle that people are inherently motivated to avoid making judgements that are inconsistent with one another. In line with a cognitive consistency approach and specifically the Recategorization Model of Roth and colleagues (2018), we suggest that people will identify with multiple groups to a more similar extent the more they perceive these groups to be compatible. Similarly, intergroup bias will be smaller the more the social groups are perceived to be compatible. These hypotheses are tested in three studies.

The first study ($N = 269$) investigated the identity transition from being a student to becoming an employee. We manipulated the compatibility of students and employees in a sample of current employees who were formerly students. In line with predictions, those in the high compatibility condition identified to a more similar extent and showed more similar attitudes towards both groups compared to the low compatibility condition.

The second study ($N = 403$) moved to a largescale, real-life example of potential identity loss i.e., Brexit, and investigated the relationship between perceived group compatibility of UK and EU citizens, social identification, and intergroup attitudes in

the wake of the referendum outcome. In line with predictions, the cross-sectional analysis showed that perceived compatibility was associated with reduced ingroup bias of UK citizens relevant to EU citizens and that this relationship was mediated by identification with EU citizens. Longitudinal analyses, however, showed that identification with EU citizens predicted perceived group compatibility at subsequent time points while there was no indication of the reverse relationship over time. These findings suggest that in certain contexts motivational and social factors may be stronger predictors of intergroup attitudes than striving for cognitive consistency.

The third study ($N = 635$) then applied the same cognitive consistency approach to social groups with a history of intergroup conflict and investigated whether intergroup bias would be lower when residents of Northern Ireland perceived British and Irish people as higher in compatibility. As hypothesised, attitudes towards British people were positively associated with attitudes towards Irish people when perceived compatibility was higher and the opposite relationship was found at the lowest levels of perceived compatibility.

The results of these studies largely support our cognitive consistency approach in explaining multiple group identification and intergroup attitudes across a variety of applied contexts. Each of the studies found that higher perceived compatibility of two distinct social groups was associated with more similar levels of identification with both as well as more similar attitudes towards both. Apart from the theoretical contributions, we also derive applications on how to improve intergroup relations.

List of Papers

This thesis consists of the following three original empirical articles, which are published or under review in peer-review journals:

Loughnane, J., Roth, J., Rauner, M., & Strack, F. (2021). From Student to Employee:

Group Compatibility Predicts Group Identification and Intergroup Attitudes.

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Loughnane, J., Roth, J., DeTezanos-Pinto, P., & Van Tilburg, W.A.P. (2023). Brexit

and the Loss of EU Membership for UK Citizens: EU Identification and UK

Preference. Manuscript invited for resubmission. *Social Psychological Bulletin*.

Loughnane, J., Roth, J., & Van Tilburg, W.A.P. (2023). A Cognitive Balance

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Ireland. *British Journal of Social Psychology*.

00, 1– 19. <https://doi.org/10.1111/bjso.12656>

Conference Presentations and Invited Talks

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Strack, F. (2023, July 9-12) *A Cognitive Consistency Approach to Understanding Group Identification and Intergroup Bias*. 36th Annual Convention of the International Association for Conflict Management, Thessaloniki, Greece.

Loughnane, J., Roth, J., Van Tilburg, W.A.P., DeTezanos-Pinto, P., Rauner, M., &

Strack, F. (2023, June 30-July 4) *A Cognitive Consistency Approach to Understanding Group Identification and Intergroup Bias*. 19th General Meeting of the European Association of Social Psychology (EASP), Krakow, Poland.

Loughnane, J. (2023, March 6) *A Cognitive Consistency Approach to Understanding*

Group Identification and Intergroup Bias. Invited talk at the University of Limerick, Ireland.

Loughnane, J., O'Connor, A., & Minescu, A. (2022, September 16-17) *The*

Challenges of Engaging in Research with and about Irish Traveller Communities in Ireland. Irish Travellers/Mincéirs and the State, 1922-2022: The Struggle for Equality, University of Galway, Ireland.

Loughnane, J., Roth, J., & Van Tilburg, W.A.P. (2022, September 5-7) *A Cognitive*

Consistency Approach to Understanding Intergroup Attitudes in Post-Brexit Northern Ireland. BPS Social Psychology Section Conference, University of Greenwich, London, UK.

Roth, J., Steinmann, M., **Loughnane, J.**, Van Tilburg, W.A.P., Campbell, C., Shelly,

C., M., ... Muldoon, O. (2022, September 5-7) *The Effect of the 2022 Northern Ireland Assembly Elections on Intergroup Attitudes*. BPS Social Psychology Section Conference, University of Greenwich, London, UK.

Loughnane, J., Roth, J., & Van Tilburg, W.A.P. (2022, August 24-26) *A Cognitive Consistency Approach to Understanding Intergroup Attitudes in Post-Brexit Northern Ireland*. Small Group Meeting: Intergroup relations in face of contemporary challenges, University of Limerick, Ireland.

Steinmann, M., Roth, J., **Loughnane, J.,** Van Tilburg, W.A.P., Campbell, C., Shelly, C., M., ... Muldoon, O. (2022, August 24-26) *The Results of the 2022 Northern Ireland Assembly Elections Decreased Social Identity Threat particularly among Sinn Féin Supporters*. Small Group Meeting: Intergroup relations in face of contemporary challenges, University of Limerick, Ireland.

Roth, J., Steinmann, M., **Loughnane, J.,** Van Tilburg, W.A.P., Campbell, C., Shelly, C., M., ... Muldoon, O. (2022, August 24-26) *Highlighting Similarities between British and Irish in Northern Ireland as Means to Improve Intergroup Attitudes*. Small Group Meeting: Intergroup relations in face of contemporary challenges, University of Limerick, Ireland.

Loughnane, J., Roth, J., Van Tilburg, W.A.P., & DeTezanos-Pinto, P. (2021, September 25-27) *Brexit and the loss of EU membership: A potential threat to intergroup relations* [Research Talk]. British Psychological Society Social Psychological Section Annual Conference, virtual.

Loughnane, J., Roth, J., Van Tilburg, W.A.P., & DeTezanos-Pinto, P. (2021, September 13-15) *Brexit and the Loss of EU Membership: A Potential Threat to Intergroup Relations* [Research Talk]. ESCON Transfer of Knowledge Annual Conference, virtual.

Loughnane, J., Roth, J., Rauner, & M., Strack, F. (2021, February, 11-13) *From Student to Employee: Group Compatibility Predicts Group Identification and*

Intergroup Attitudes [Poster Presentation]. Social and Personality Psychology (SPSP) Annual Convention, virtual.

Loughnane, J., Roth, J., Rauner, & M., Strack, F. (2021, June 30-July 4) *From Student to Employee: Group Compatibility Predicts Group Identification and Intergroup Attitudes* [Poster Presentation]. 19th General Meeting of the European Association of Social Psychology (EASP), Krakow, Poland (subsequently cancelled due to Covid).

Loughnane, J., Roth, J., Rauner., M., Strack, F., & Van Tilburg, W.A.P. (2020, October 9-10) *Social Identity Change: Group compatibility affects group identification and intergroup attitudes* [Research Talk]. Early Doctoral Exchange Network (EDEN) conference, virtual.

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- **Department of Psychology PhD Scholarship** Awarded a competitive PhD scholarship by the UL Department of Psychology valued at approximately €64,000.

Declaration

The substance of this thesis is the original work of the author and due reference, and acknowledgement has been made, where necessary, to the work of others. No part of the thesis has been submitted in candidature for any degree. The candidate was the primary author of the three empirical papers.

The three empirical studies included in this thesis were written up as three papers for publication. The substantial contribution to the coauthored papers was made mainly by the candidate. However, while the candidate is fully responsible for the work presented in the thesis, where the first person is used it is in the plural (i.e., 'we' rather than 'I') as in the original peer-reviewed articles, to reflect the collaborative efforts guiding the research process.

Jack Loughnane

(Candidate)

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CHAPTER ONE

General Introduction

Chapter 1: General Introduction and Overview of the Thesis

People change the groups they belong to many times during their lives. They do so in many ways and for a variety of reasons. These changes can come about as they progress through life (e.g., from student to employee, becoming a parent), through changes they make of their own accord (e.g., smoking cessation, joining a club) and for reasons beyond their control (e.g., political decisions, forced migration). This may, or may not, involve a process of a change of identity, gaining an identity, or the loss of an identity (Amiot et al., 2007). As such, in contemporary society, it is critical to understand group identification and intergroup attitudes in the context of identity change. Avoiding conflict towards former ingroup members or towards outgroup members in the case of lost superordinate group membership should be a goal of functional, harmonious societies. This is particularly the case in a world in which many group boundaries are increasingly permeable.

In addition to the many reasons that people may change social groups, understanding predictors of intergroup attitudes is also important in a world where most people now live in diverse societies. As societies have become more diverse, opportunities for encounters between people from different groups has continued to grow. Functional diverse societies imply that people from different social groups live together in harmony and intergroup attitudes can be considered an indicator of this. People may interact with others from different ethnic or racial groups, different religious backgrounds, or even with members of outgroups that have a history of conflict with their own ingroup.

Regardless of the circumstances under which identity change or exposure to outgroup members occurs, since group identity and intergroup attitudes are considered drivers of intergroup conflict (Hewstone & Greenland, 2000), understanding when these events affect group identity and intergroup attitudes is vitally important. Previous

research has identified many factors that contribute to our understanding of intergroup attitudes (Brown & Hewstone, 2005; Park & Judd, 2005; Plaut, 2002; Rattan & Ambady, 2013; Tajfel, 1978; Turner et al., 1987). Understanding the strength with which people identify with their social groups is also important as it can have consequences for attitudes and behaviours towards both ingroup and outgroup members (Tajfel et al., 1971). This thesis complements previous research by applying a cognitive consistency approach to understand identification with and attitudes towards a) previous and new ingroups, b) subordinate and superordinate groups, and c) an ingroup and outgroup in a context of historical intergroup conflict.

The approach taken in this thesis has previously been applied to many fields of psychology (see Gawronski, 2012). By applying a cognitive consistency approach to understanding identity integration and intergroup attitudes in various contexts, it builds on the notion originally posited by Leon Festinger (1957) that people inherently strive for cognitions that are consistent with each other and avoid conflicting cognitions. The current thesis tackles the issues of multiple group identification and intergroup attitudes by drawing upon previous theory and research that were themselves informed by a cognitive consistency approach. The research conducted as part of this thesis, for example, builds upon Heider's (1958) Balance Theory. This theory makes predictions about interpersonal relationships. According to Heider people hold interpersonal beliefs that are cognitively balanced. I extend upon this line of research by investigating whether intergroup attitudes similarly adhere to cognitively balanced patterns.

Finally, the studies in this thesis test hypotheses directly derived from a cognitive consistency informed theoretical model. Specifically, Roth and colleagues' (2018) Recategorization Model. This model makes predictions about the simultaneous integration of new and old identities into the self-concept - one's cognitive self-knowledge and self-beliefs based on past experiences (Krol et al., 2020) - and the

consequences for intergroup attitudes. The approach can theoretically be applied in multiple contexts and focusing on different group dynamics. This model highlights the important role of perceived compatibility of social groups for multiple group identification and intergroup attitudes.

Throughout this thesis compatibility is defined in line with Roth and colleagues' (2018) understanding. That is as the overlap between distinct social groups in the extent to which they share values, norms, and goals. Two groups are said to be compatible when their values, norms, and goals are harmonious with one another and are incompatible when their values, norms, and goals conflict with each other. For example, the groups vegetarians and vegans could be perceived as more compatible than the groups vegetarians and carnivores. In three studies, I investigated the role of perceived compatibility of distinct social groups in predicting identification with multiple groups and respective intergroup attitudes. The studies were conducted in three different applied contexts.

The overarching goal of the thesis was to test a novel theoretical approach to understanding multiple group identification and intergroup attitudes that has been informed by previous cognitive consistency theory and research and extend it to various contexts. I build upon previous psychological research which has applied a cognitive consistency approach by focusing specifically on mutual identification and intergroup attitudes as outcomes. I simultaneously extend the predictions of the Recategorization Model of Roth and colleagues (2018) by investigating not only contexts of identity change but also to a context of superordinate category loss and a one of historical intergroup conflict. I aim to answer the general research question, 'does increased perceived compatibility of distinct social groups allow for simultaneous identification with and more similar attitudes towards both groups?'.

In this opening chapter, I first present the theoretical background to the research and general overview of previous research, explaining the importance of a cognitive consistency approach to understanding multiple group identification and intergroup attitudes. While the theoretical framework that I focus on can potentially be applied to understanding identification with multiple social groups and intergroup attitudes in many contexts, I specifically argue why this approach can be applied to understanding intergroup attitudes in the context of an identity transition in Study 1, where a superordinate categorization has been lost in Study 2, and between social groups with a history of intergroup conflict in Study 3. Having outlined the theoretical approach and the previous research that informs this thesis, I then describe the studies that comprise the current thesis in greater detail.

I next move to the empirical studies that form the basis of the thesis. These studies are portrayed in Chapter 2, Chapter 3, and Chapter 4. Each of the three studies in this thesis test predictions of our cognitive consistency approach in different applied contexts. As such, they all examine the relationship between the perceived compatibility of two distinct social groups and identification with both groups as well as intergroup attitudes. The three studies differ in terms of the type of intergroup relations that they investigate. The contexts of the studies are described in greater detail in the present research section of this introductory chapter.

The final chapter is a general discussion of the research conducted as part of the current thesis. I provide a summary of the findings of each of the studies before discussing the theoretical implications of the research and how it contributes to existing knowledge. I then move to the practical implications of the approach in applied contexts and how it can inform policy and interventions which aim to improve intergroup relations. I close with potential limitations of the current research and some considerations for future research.

Theoretical Background and Previous Research

Social Identification and Intergroup Attitudes

Identification with social groups and how it relates to intergroup attitudes is a key concern of the studies in this thesis. Part of an individual's self-concept is based on their personal identity and part on their social identity (Tajfel et al., 1979). The personal identity is defined by idiosyncratic traits while an individual's social identity is the part of their self-concept that is constructed by the groups that they are members of (Easterbrook & Vignoles, 2012; Tajfel, 1978; Tajfel & Turner, 1986; Turner et al., 1987). These groups are referred to as ingroups in social identity research. Resulting from this sense of self-concept, an ingroup can effect a person's thoughts (Van Bavel & Cunningham, 2012), feelings (Brewer, 1999), and behaviours (Postmes et al., 2005). In addition, the amount that an ingroup affects an individual's attitudes and behaviours is dictated by the extent to which they identify with that group (Leach et al., 2008; Turner, 1999).

Certain preconditions for a social group to be considered an ingroup have previously been identified. For example, Tajfel (1982) posited that for a social group to be considered an ingroup in the psychological sense it requires both a cognitive component and an evaluative component. The cognitive component refers to one's awareness of membership, and the evaluative component refers to some value connotation that is associated with membership of the group. Tajfel (1982) suggests that only if both exist can a membership in a social group result in a social identity. Furthermore, people differ in the strength of their psychological attachment to an ingroup which is reflected in different levels of identification with a group.

Opinions on whether membership of a social group is necessary for identification to be possible are split among previous researchers. Whereas some subsequent research is in line with Tajfel's account and suggests that group membership

is a precondition for group identification (Leach et al., 2008), other research suggests that people can identify with social groups that they do not belong to and that this has meaningful consequences (Figueiredo et al., 2010; Özkan & Ergün, 2022; Page-Gould et al., 2010). The hypotheses investigated in the current studies are in line with the latter research findings. In this thesis I investigate whether people will identify to a similar extent with both ingroups and outgroups (which in some cases were former ingroups or members of a shared superordinate group) when they perceive the groups as more compatible in terms of their values, norms, and goals.

People show more positive feelings, thoughts, and behaviours towards groups they belong to compared to groups that they do not belong to (i.e., outgroup). This phenomenon is often referred to as intergroup bias. Intergroup bias (also called ingroup bias or ingroup favouritism) can be observed at cognitive, affective or behavioural levels (Mackie & Smith, 1998). Similarly, people respond more favourably to groups they identify more strongly with compared to groups they identify with less strongly (Brewer, 1999). Aiming to test the minimal conditions required for intergroup bias to be displayed, previous researchers assigned participants to novel and arbitrary categories (Rabbie & Horwitz, 1969; Tajfel et al., 1971). The findings of these seminal experiments allowed researchers to conclude that mere categorization was sufficient for intergroup bias to be displayed (Ashburn-Nardo et al., 2001; Otten & Wentura, 1999). Even though intergroup bias is stronger in relation to pre-existing groups (Mullen et al., 1992), the fact that it is observed in minimal groups displays the omnipresence of the phenomenon and the importance of understanding when people can identify with multiple groups simultaneously and when groups are perceived as in conflict with one another.

Multiple Group Identification

Previous research has shown that when particular social identities become salient, individuals are motivated to act in ways typical of the salient group identity, to reinforce similarities with ingroup members and to differentiate from outgroup members (Tajfel & Turner, 1986; Turner et al., 1987). The core reasoning behind this idea is that certain contexts lead to people thinking of themselves and others as group members rather than as individuals (Ellemers & Haslam, 2012). Previous researchers have manipulated identity salience through priming and shown how it affects many distinct outcomes. The impact of identity salience is evidenced in many ways as identity salience priming has been shown to affect, for example, task performance (Spencer et al., 1999; Steele & Aronson, 1995), sports fan-related behaviour (Laverie & Arnett, 2000) and stereotype consensus (Haslam et al., 1999). However, the current study instead focuses on the relatively under studied line of research which is when people can identify with distinct social groups simultaneously.

Understanding multiple group identification, that is the ability to identify with distinct groups simultaneously, is important as it has consequences for intergroup relations. Despite the prominence of identity salience research above multiple group identification research, some previous research and theory has provided valuable insight into the way that distinct identities can be integrated simultaneously. Amiot and colleagues (2007) for example suggest that distinct identities can be integrated into the self-concept simultaneously and perceptions of inconsistencies can be overcome in multiple ways. One such way would be to find the similarities or commonalities of the distinct groups. On the other hand, Roccas and Brewer (2002) suggest that when the overlap between distinct groups that an individual is a member is perceived to be high, multiple group memberships can merge to form a single ingroup identification.

Common to these approaches is the idea that the extent to which distinct social groups overlap or match each other is an important factor.

Group Compatibility

Some preliminary evidence exists showing the importance of perceived group compatibility for multiple group identification. Iyer and colleagues (2009) investigated individuals starting university and found that those who perceived their previous identity as compatible with their new student identity were best able to integrate their new student identity into their self-concept. Matschke and Fehr (2017) similarly found that individuals who perceived their home cultural identity and the cultural identity of the country that they were moving to as incompatible, can be more likely to disidentify with the receiving society. Perceived compatibility has also been a key focus in acculturation research. Benet-Martinez and colleagues focus on the compatibility of multiple cultural identities versus the oppositionality of these identities when defining identity integration in their research (Benet-Martínez, 2012; Benet-Martínez & Haritatos, 2005). This line of research suggests that when two cultural identities are perceived as in conflict rather than overlapping people experience acculturation stress and identify with one group more strongly than the other, rather than being able to integrate both identities simultaneously.

As well as evidence that perceived compatibility of distinct groups is associated with successful identity integration, research has also investigated the relationship between perceived group compatibility and intergroup bias. The classic studies by Sherif and Sherif (1953) showed that intergroup conflict is reduced when distinct groups are presented with superordinate goals that are compelling and attractive to both groups. Crisp and Beck (2005) experimentally manipulated the degree of overlap between various social groups and found that those primed to perceive the ingroup and outgroup as overlapping to a greater extent displayed less intergroup bias. These studies

provide preliminary evidence that perceived compatibility of distinct social groups can be a predictor of mutual identification and decreased intergroup bias.

Levels of Categorization and their Implication for Intergroup Attitudes

Like much previous research, the current study is informed by the social identity approach in its understanding of intergroup attitudes. The social identity approach combines Social Identity Theory (SIT; Tajfel, 1978), mentioned above, and Self-Categorisation Theory (Turner et al., 1987). While there are many similarities between SIT and SCT (Hornsey, 2008), a main distinction is that while SIT considers interpersonal and intergroup dynamics as representing opposite ends of a spectrum, SCT characterizes identity as operating at different levels of inclusiveness. In SCT, Turner and colleagues nominated three distinct levels of categorization that can be important to an individual. The most abstract is the human level (i.e., categorization as a human being), the intermediate level is social categorization (i.e., categorization with a social group), and the subordinate level refers to one's personal identity. The studies in this thesis predominantly investigate categorization at the social categorization level. At the social categorization level, categorization differs depending on context and can occur at various levels of inclusiveness (Tajfel et al., 1979). According to SCT, which level of categorization is applied (and at the intermediate level which specific social category) is a function of accessibility and fit. Fit refers to the extent to which group distinctions are perceived to reflect reality. Individuals will perceive strong category fit if they feel like a representative member of a social group and distinct from relevant outgroups. The level of categorization affects outcomes such as intergroup attitudes. The current study contributes to social categorization research as Study 2 and Study 3 examine a context where a superordinate inclusive category has been lost.

People share a social identity when they belong to a common social group. This approach posits that a shared social identity leads to a sense of connectedness with other

group members which in turn can foster prosocial orientation, positive intergroup evaluations, and can facilitate supportive behaviour (Gaertner et al., 2000). The social identity approach additionally posits that when the distinctions between subgroups are less salient it results in less intergroup bias (Stone & Crisp, 2007). According to the Common Ingroup Identity Model (CIIM; Gaertner et al., 1993), the reduction in bias can be attributed to changing the perception of the group boundaries from ingroup and outgroup to a more inclusive superordinate category or from “us” and “them” to a more inclusive “we”. An alternative understanding of superordinate categorization is the Ingroup Projection Model (Mummendey & Wenzel, 1999). This asserts that a relevant superordinate group to which an ingroup and outgroup belong provides dimensions and norms for comparisons between the groups. Subgroup members tend to project characteristics of their ingroup onto the superordinate group, implying prototypicality of their ingroup (Wenzel et al., 2003). For example, UK citizens who identify as European may consider politeness as a characteristic that all Europeans should possess. The projection of characteristics onto the superordinate group can become a battlefield for various subgroups. Ingroup members may be motivated to assert themselves as more prototypical of the superordinate group than outgroup members leading to potential conflict between the ingroup and outgroup, potentially in the form of intergroup bias.

Previous research investigating when and how adding a superordinate level of categorization can improve perceived similarities between the involved subgroups and improved intergroup attitudes is plentiful (Brown & Abrams, 1986; Brown, 1984; Hogg & Turner, 1985; Stein et al., 1965; Wilder, 1984). A real-life and large scale example of the effect of superordinate category membership is evident in that European Union membership was thought to play a role in promoting intergroup harmony among subgroups living in Northern Ireland – a context with a history of intergroup conflict between subgroups (Lowe & Muldoon, 2014). In comparison, a gap exists in the

research in relation to what happens when membership of such a superordinate category is lost. Though in general research on the loss of superordinate group membership is lacking, recent research has shown that a sense of common identity loss among minority group members is associated with an increase in the likelihood of participating in violent collective action (Saguy et al., 2020) which may be driven by increased intergroup bias. Studies 2 and 3 in this thesis aim to address this gap in the literature by investigating perceived compatibility as a predictor of group identification and intergroup attitudes in a context where a superordinate category membership has been lost.

A Cognitive Consistency Approach to Intergroup Relations

Intergroup relations permeate almost every aspect of society and as such researchers for many years have been interested in understanding when people display intergroup bias. As outlined above, previous research has indicated that group compatibility plays a role in identity transitions and mutual identification (Benet-Martínez & Haritatos, 2005; Iyer et al., 2009; London et al., 2011). Additionally, mutual fit within a common inclusive group and shared goals can be related to positive intergroup relations (Gaertner et al., 1993; Sherif & Sherif, 1953). A potential explanation of these findings is that to perceive distinct groups as being compatible or sharing common goals while simultaneously strongly favouring of one group over the other would be cognitively inconsistent. To take an example from acculturation research, for a Polish immigrant in Ireland the two social groups Polish and Irish will be self-relevant. If the distinct groups are perceived as sharing norms (e.g., family orientation), values (e.g., religiosity), or goals (e.g., economic prosperity), holding similar attitudes towards both groups will be experienced as cognitively consistent. Conversely for an individual who perceives the two groups as being in conflict in terms of their norms, value, or goals it would be cognitively consistent to display intergroup

bias. The present thesis adds to intergroup relations research by investigating people's tendency for cognitively balanced judgements of social groups. Specifically, I investigate whether perceptions of (in)compatibility of distinct social groups are associated with a difference in strength of identification with and difference in attitudes towards these groups. I aim to test predictions from a cognitive consistency approach on social identification and intergroup attitudes in various contexts.

A cognitive consistency approach suggests that the relationship between group (in)compatibility and mutual identification and downstream consequences for intergroup attitudes displayed in identity integration and acculturation research (Benet-Martínez & Haritatos, 2005; Iyer et al., 2009; London et al., 2011) can be accounted for by people's motivation for cognitively consistent judgements. The current thesis aims to test this approach. Many previous researchers have focussed on the cognitive processes which predict the outcomes of intergroup attitudes. Principles of cognitive psychology have been applied to many areas of research and provide evidence that people strive for cognitions that are consistent with one another. Festinger (1957) theorised that holding contradicting cognitions simultaneously creates a dissonance within a person and this dissonance is associated with an aversive feeling. For example, if a person evaluated another to be both *nice* and *mean* simultaneously, they would experience dissonance. Festinger suggests that people are motivated to avoid such a situation because of the negative feelings experienced. Building on this core principle, Heider (1958) proposed Cognitive Balance Theory which states that interpersonal relations are also driven by cognitive consistency. Heider's model predicts that people are motivated to have interpersonal relationships that exist in a balanced triad of all liking relations or an even number of disliking attitudes. For example, the triad *John likes James, John likes Jane, and James likes Jane* is cognitively balanced, but the triad *John likes James, John likes Jane, and James dislikes Jane* is imbalanced (see Figure 1). In other words, people

usually like others who are liked by their friends and dislike others who their friends dislike. Conversely, it is imbalanced to dislike an enemy's enemy or to like and enemy's friend.

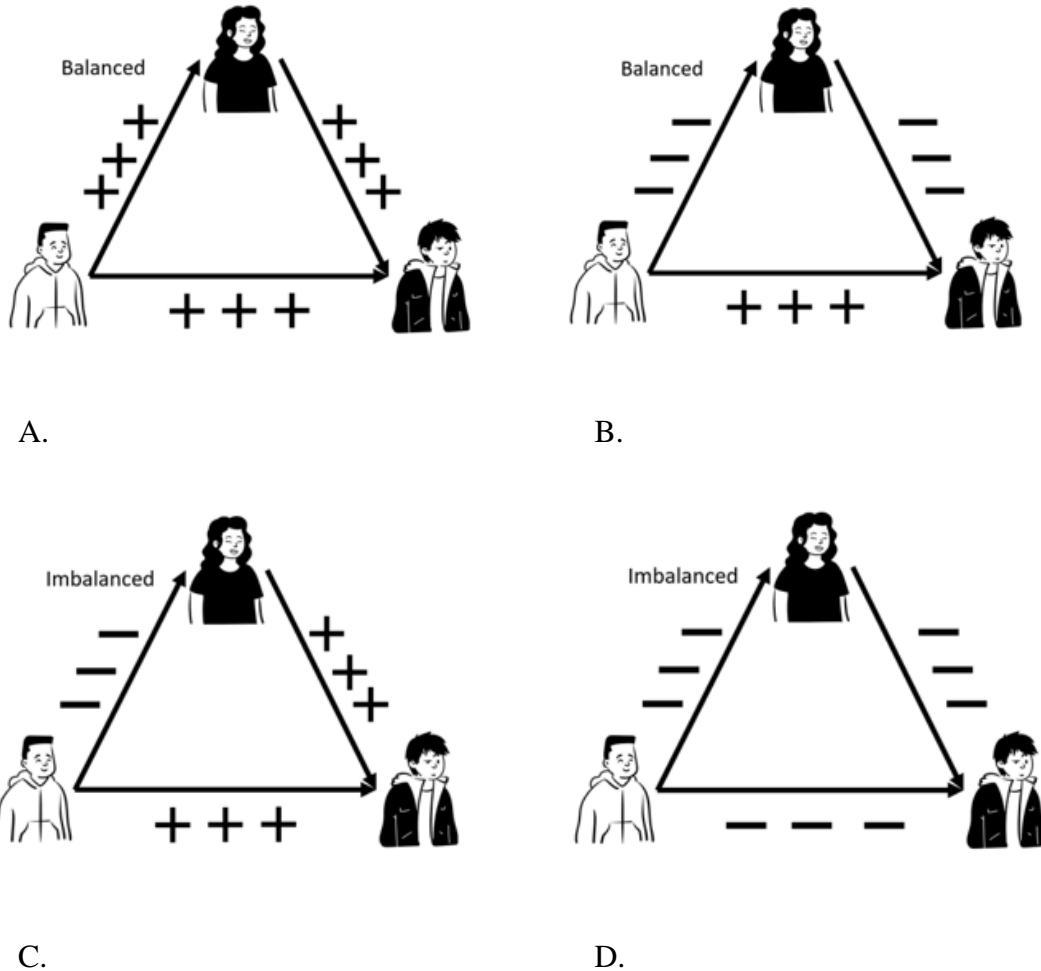


Figure 1. Based on Heider's balance theory, images A and B represent cognitively balanced triads of interpersonal relations while images C and D represent cognitively imbalanced triad of interpersonal relations which Heider predicts that people would be motivated to avoid.

Heider suggested that if people held imbalanced triads of interpersonal relations, they would be motivated to change their evaluations to bring them in line from a cognitive consistency perspective. In subsequent research Gawronski and colleagues (2005) supported this hypothesis experimentally. These researchers found that when participants evaluated one person and then learned of this person's evaluation of another person, they made evaluations of the third party in the way that it completed a balanced

triad of interpersonal relations. Both Festinger's initial hypotheses and subsequent research (Gawronski et al., 2016) suggest that the extent to which people are motivated to respond in a cognitively consistent manner is dependent upon the subjective importance of the evaluations to the individual.

Cognitive Consistency as a Core Motive

A significant claim of Festinger's cognitive consistency theory is that the desire to obtain consistency is a motive as fundamental to human behaviour as hunger or thirst. To make predictions on how the motivation for cognitive consistency predicts outcomes for identity integration and intergroup relations, it is necessary to define what is meant by cognitive consistency. The original definition by Festinger (1957) states that two cognitive elements are inconsistent if the opposite of one precedes the other "x and y are dissonant if not-x follows from y" (p. 13), with x and y relating to "any knowledge, opinion, or belief about the environment, about oneself, or about one's behaviour" (p. 3). According to Gawronski (2012) there are two important aspects of this definition that require consideration. First, this cognitive consistency is defined as relating to logical associations between cognitive elements such as thoughts, beliefs, attitudes or perceptions. Second, the cognitive elements need to be understood as propositions about states of affairs that are either regarded as true or false by the individual (Gawronski & Strack, 2004). These criteria distinguish cognitive consistency from a purely semantic understanding. That is cognitive consistency does not arise at the mere activation of two opposing concepts, rather the proposition of how both are related to an object of reference. For example, activation of the concepts *extraversion* and *introversion* simultaneously would not necessarily result in cognitive inconsistency unless both concepts are associated with the same reference object (e.g., *Sally is extraverted*, and *Sally is introverted*). If the two concepts are associated with separate objects, cognitive inconsistency would not be experienced (e.g., *Sally is extraverted*, and *John is*

introverted). Moreover, the semantic pairing of opposing concepts with a common object only results in the experience of cognitive inconsistency if both propositions are regarded as true i.e., if one regards the proposition *Sally is extraverted* as true and the proposition *Sally is introverted* as false, cognitive inconsistency is not experienced. In summary, for cognitive consistency to act as a core motive the cognitive elements involved need to be *propositional beliefs*, which are characterized by (a) propositional relationships between concepts (e.g., *John is nice, Sally is smart, smoking causes cancer*) and (b) an evaluation of the whether propositions are true or not.

Another important element of the cognitive consistency perspective is the distinction between inconsistency and ambivalence, which has been previously discussed by Gawronski (2012). Ambivalence occurs when an object is simultaneously associated with positive and negative attributes (Van Harreveld et al., 2009). If the attributes are related to different dimensions, then ambivalence rather than cognitive inconsistency is experienced (e.g., *John is clever and John is rude*). Both propositions can be evaluated as true and not result in cognitive inconsistency based on Festinger's (1957) definition as one proposition does not imply the opposite of the other (Judd et al., 2005). Of course, ambivalence and cognitive inconsistency can co-occur (*John is warm, John is cold*), but ambivalence does not imply cognitive inconsistency.

Additionally, and particularly relevant to the current set of studies, Festinger's theory states that people are motivated to achieve balance by reducing inconsistencies of cognitions and to maintain a state of consonance (Gawronski & Strack, 2012). In this sense, cognitions refer to any bits of knowledge held by an individual (Harmon-Jones et al., 2015). There are multiple ways in which inconsistencies can be addressed. For example, a smoker who wants to become healthier can resolve the dissonance that results from the inconsistency between their beliefs and behaviours by adding consonant cognitions ("I really enjoy smoking"), subtracting dissonant cognitions ("I don't need to

give up smoking”), increasing the importance of consonant cognitions (“You only live once, I should do what I enjoy”) or by decreasing the importance of consonant cognitions (“Smoking is not that unhealthy”). In the current thesis, I test whether people resolve dissonance by bringing their group evaluations (both identification with and attitudes towards distinct groups) and their perception of compatibility of those groups, in line with one another.

Although the initial assertion of Festinger (1957) was that the motive of cognitive consistency was ubiquitous, researchers have subsequently identified several boundary conditions which predict whether a dissonance-related attitude change occurs. One common finding is that dissonance is less tolerable when it relates to the self. Dissonance related attitude change has been attributed to mechanisms of ego-defense such as the need for consistent views about the self (e.g., Aronson, 1968), the need for a positive self-image (Steele & Liu, 1983), feelings of personal responsibility for negative outcomes (Cooper & Fazio, 1984), and the need for one’s views to match one’s personal standards (Stone & Cooper, 2001). While the evidence that attitude change resulting from cognitive inconsistency is moderated by self-relevance seems clear, it is important not to misinterpret this as meaning that cognitive inconsistency is not experienced without self-relevance (Gawronski, 2012).

Of relevance to the current study is how cognitive consistency motivates intergroup attitudes. Prejudice, a specific type of intergroup attitude, has been researched from a cognitive consistency perspective. Gawronski and colleagues (2008) illustrated how a conceptualization of prejudice in terms of cognitive consistency can provide an integrative framework for understanding the relationship between proposed concepts. A central assumption of this proposed framework is that negative judgements that are activated in response to a certain social group can result in negative affective reactions towards targets of prejudice. If this affective negative reaction is consistent

with other prejudice relevant beliefs (e.g., beliefs relating to egalitarianism, discrimination, anti-prejudice goals etc.), it will result in negative evaluation of the target (see Gawronski & Bodenhausen, 2006, 2011). To exemplify this in relation to prejudice towards Black people, Gawronski and colleagues (2008) use the following three statements:

- 1) I dislike Black people.
- 2) Negative evaluations of disadvantaged groups are wrong.
- 3) Black people are a disadvantaged group.

These three statements contradict one another and cannot be simultaneously endorsed without invoking cognitive inconsistency. Inconsistency then may be resolved by rejecting any one of the three statements while maintaining the other two. The first option would be for the person to change their evaluation of African Americans i.e., not relying on their negative affective reaction as the basis for their evaluative judgement. Since the affective reaction is not necessarily overridden by making a positive evaluation, taking this option can result in discrepancy between the affective reaction and the endorsed belief, as it is described in the concept of aversive prejudice (Dovidio & Gaertner, 2004). The second option to resolve the inconsistency would be to reject the notion that African Americans are a disadvantaged group. This solution would be in line with McConahay's (1986) definition of modern racism, in which people deny that discrimination continues in modern societies. The third option would be to reject the general disapproval of discriminatory behaviour. This option would be more closely associated with old-fashioned racism in which discrimination is openly supported (Swim et al., 1995). The examples outlined here show how cognitive consistency can be applied to understand many previously described forms of prejudice. In the current thesis I aim to build upon these mechanisms in understanding of prejudice by applying these principles of cognitive consistency to identification with multiple groups and

respective intergroup attitudes. I do so by extending Heider's balance approach from interpersonal relations to intergroup relations.

Recategorization Model

The Recategorization Model by Roth and colleagues (2018) deals with the psychological processes involved in identity integration following identity change and the downstream consequences for intergroup attitudes. The model is based on cognitive consistency principles. It expands Balanced Identity Theory of Greenwald et al. (2002), which itself builds on Heider's Balance Theory (1958), by making predictions for identification with the new ingroup and the previous outgroup following a change of group membership. The Recategorization Model specifically focuses on instances of identity change. The current thesis aims to not only test the hypotheses in relation to identity change (Study 1), but to extend the predictions to contexts where a superordinate category membership has been lost and in a context of historical intergroup conflict (Studies 2 and 3).

In line with Balanced Identity Theory, in their Recategorization Model, Roth et al., (2018) suggest that people acquire knowledge about themselves throughout their lives and this knowledge makes up people's self-concepts. Associative links between these concepts also form in one's memory (Collins & Loftus, 1975), linking attributes to both the self and the groups that one is a member of. The model suggests that in one's social knowledge structure, the self-concept is represented by the association between the self and attributes, stereotypes are represented by the association between a group and attributes, and social identification is represented by the relationship between the self and a group (Greenwald et al., 2002). A key component of Balanced Identity Theory is that the relationship between these various concepts follow principles of cognitive consistency.

Both the Recategorization Model and Balanced Identity Theory are based on the specific cognitive consistency principles of balance congruity and imbalance dissonance. The balance congruity principle states that when two concepts are simultaneously associated with a third concept, the relationship between the first two concepts strengthens. Based on this principle, if a person perceives that a group to which they belong is associated with an attribute that they associate with their self-concept, their identification with that group will strengthen (e.g., if I perceive myself as friendly and I also perceive Irish people as friendly, I will identify more strongly as Irish). Conversely, the principle of imbalance dissonance states that when two concepts are diametrically opposed, they cannot simultaneously be associated with a common third concept (e.g., if I perceived myself as friendly and I perceive Irish people to be unfriendly, I will identify less strongly with Irish people).

The goal of the Recategorization Model of Roth and colleagues (2018) is to expand upon Balanced Identity Theory to understand the integration of new identities into the self-concept. In building on the Balanced Identity Theory, the Recategorization Model specifically focuses on the construct of group compatibility. The model asserts that two groups are compatible if they are similar in terms of their values, norms, goals etc. and they are incompatible if they differ on these points. The model proposes that a person can identify to a similar extent with both groups if they are perceived as compatible but not if they are incompatible. To identify with two groups that are incompatible to a similar extent would be cognitively inconsistent. Similarly, to hold similar attitudes towards two distinct groups that are perceived as incompatible would also be cognitively inconsistent. Figure 1 provides a summary of the model. Based on the premise that people generally evaluate themselves positively (Yamaguchi et al., 2007) and this positive evaluation is extended to the ingroup (Roth & Steffens, 2014), the Recategorization Model additionally hypothesises that the discrepancy in

identification with both groups mediates the relationship between compatibility and discrepancy in group attitudes. Importantly for the hypotheses in this thesis that are derived from the Recategorization Model, the model makes these predictions in relation to social groups that people currently belong to, belonged to in the past, or newly belong to. In the present thesis, the hypotheses are tested in contexts of identity transition, however Study 3 additionally extends the predictions to a context of intergroup conflict where participants potentially never belonged to at least one of the groups.

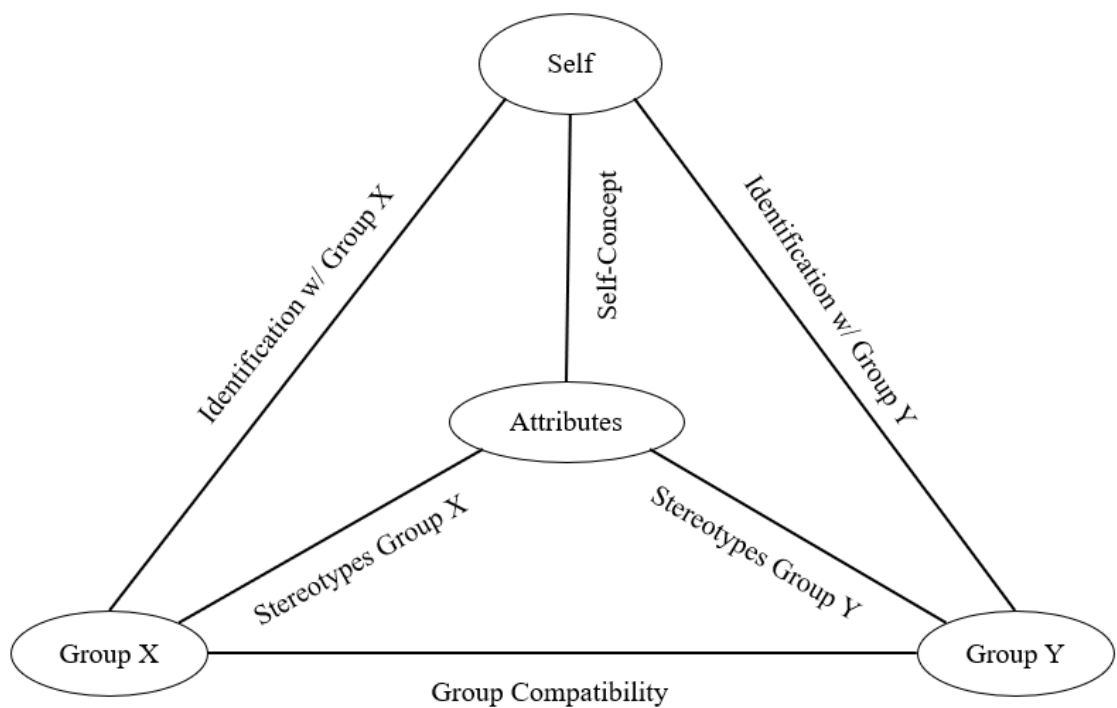


Figure 1. Recategorization Model based on cognitive consistency principles taken from Roth et al., (2018).

The Recategorization Model additionally predicts that the voluntariness with which a person changes group predicts the extent to which they will identify with the former and new ingroup. If the two groups are perceived as incompatible identification with the new group will be higher if the change in identity is voluntary rather than forced. How the relationship between perceived compatibility and group identification

differs dependent upon the voluntariness with which people change is examined in Study 1 and in supplementary analysis in Study 2.

The Present Research

The aim of the current thesis is to test predictions derived from a cognitive consistency approach on identification with two social groups and respective intergroup attitudes. More specifically I test the prediction that multiple group identification and intergroup attitudes are dependent upon the perceived (in)compatibility of different social groups. I tested these predictions in different contexts and in relation to different types of intergroup relations. These studies are unique in that they test predictions from a cognitive consistency approach on multiple group identification and intergroup attitudes. In times of increasing social group change and contact between distinct social groups, understanding when positive intergroup attitudes emerge is more important now than ever before.

The research in this thesis will contribute to literature investigating perceived group compatibility as it relates both to the ability to identify with multiple groups simultaneously and to intergroup attitudes. As such, the hypotheses in each of the three studies are at least in part informed by the Recategorization Model of Roth and colleagues (2018). In each study I predict that higher levels of group compatibility of the distinct social groups will be associated with more similar levels of identification with and attitudes towards both groups. While this model was initially developed to investigate identity change contexts, the current thesis expands on this approach by additionally applying the general hypotheses to contexts of the loss of a superordinate category membership and to investigating mutual identification and intergroup attitudes between two groups with a history of intergroup conflict. Overall, the studies test predictions of the model in three distinct contexts.

These predictions can be supported by various analytical models. In some cases, we examine whether higher levels of group compatibility predict lower absolute differences in identification with and attitudes towards the distinct social groups. In other cases, we examine whether group compatibility moderates the relationship between identification with and attitudes towards distinct social groups. While this means that in some studies group compatibility is labelled the predictor and in others it is labelled the moderator, conceptually we are testing the same predictions.

Study 1 investigates the identity transition from being a student to becoming an employee. This study utilises an experimental design to test whether manipulating the level of compatibility of the two groups students and employees can affect the discrepancy in levels of identification with both groups as well as discrepancy in attitudes towards both groups. Of the 269 participants whose data were analysed in this study, 135 were primed to perceive the groups as being more compatible while 134 were primed to perceive the groups as less compatible. I additionally tested whether the relationship between compatibility condition and difference in identification with both groups was moderated by how voluntarily participants reported their transition from being a student to becoming an employee to be.

In Study 2, I investigated intergroup attitudes between ingroup members and members of a former superordinate group, namely UK citizens and EU citizens. I investigated whether perceived compatibility of these two groups was associated with intergroup attitudes in the form of showing preference for one group over the other. I additionally investigated whether strength of identification with either group mediated this relationship. All participants recruited to take part were UK citizens who formally lost EU category membership due to Brexit. I collected data at three distinct time points ($N = 389$, $N = 270$, $N = 264$), which allowed me to examine whether the findings were replicable between time points and to detect directionality of the relationships between

the variables. The current thesis is groundbreaking in that Study 2 and Study 3 were conducted in the wake of a large-scale, real-life example of a political decision which resulted in identity recategorization for millions of people simultaneously, i.e., Brexit, and as such are timely and important.

Study 3 investigated intergroup relations between two distinct social groups that recently lost a common group membership, namely British people and Irish people in Northern Ireland post-Brexit. I investigated whether perceived compatibility of British and Irish people moderated the relationship between identification with both groups as well as attitudes towards both groups. All participants recruited to take part in this study were residents of Northern Ireland. I collected data at two distinct time points (N = 604, N = 350), which additionally allowed for testing whether the predicted moderating effect was repeated over time as whether it was observable over time as well as cross-sectionally.

As described above, Gawronski (2012) suggests that attitude change resulting from cognitive inconsistency is moderated by self-relevance. Since each of the studies in this thesis investigate social groups that are self-relevant to participants (either ingroups, former ingroups or relevant outgroups), the cognitive consistency approach is particularly appropriate.

Methodology

This thesis is comprised of three quantitative studies. The first study is an experimental design study in which the compatibility of the groups students and employees was manipulated. Participants were either assigned to the high compatibility or low compatibility condition. In all three studies, participants were recruited through the online platform Prolific.co. Prolific.co has a reputation for providing high quality data (Peer et al., 2017). Participants recruited for Study 1 were employees (full-time,

part-time or self-employed) at the time of data collection and had all previously been students. Only participants who met these inclusion criteria could access the online questionnaire. Study 2 and Study 3 utilised both correlational cross-sectional analysis as well as longitudinal analysis. The longitudinal design allowed for the investigation of the directionality of the relationships between perceived group compatibility, group identification, and intergroup attitudes. In Study 2, only UK citizens were invited to take part in the questionnaire. Those participants who completed the entire questionnaire and passed an attention check at each timepoint were included in the cross-sectional analysis. In Study 3, only residents of Northern Ireland were invited to take part in data collection. Like Study 2, only those participants who completed the questionnaire in full and passed an attention check were included in the cross-sectional analysis. Table 1 provides an overview of the studies.

Table 1. *Overview of studies*

Study	Total Sample	Waves	Study Design	Population
1	269	1	Experimental	Employees who were formerly students (identity transition)
2	401	3	Cross-sectional and longitudinal	UK citizens (superordinate category loss)
3	635	2	Cross-sectional and longitudinal	Residents of Northern Ireland (intergroup conflict)

I am committed to open science and transparency of research. As such, the hypotheses and inclusion criteria for each of the three studies were preregistered on the Open Science Framework and the data and material for each of the studies are also shared here. I also uploaded the manuscripts for the studies that have been published to the University of Limerick Institutional Repository so that the research is available in an Open Access format.

Structure of the Thesis

Following this introductory chapter, Studies 1, 2, and 3 are described in Chapters 2, 3, and 4 respectively. In the final chapter, both the theoretical and practical implications of this series of studies are discussed. I discuss the relationship between perceived compatibility, multiple group identification and intergroup attitudes in a variety of contexts and how the findings of the current research may inform policies and strategies to improve or maintain positive intergroup relations.

To conclude, this thesis presents the overarching research question: are higher levels of perceived compatibility of distinct social groups associated with similar levels of identification with and similar attitudes towards both? This work builds on previous cognitive consistency research. It extends previous research showing that interpersonal judgements follow cognitively consistent patterns by extending to intergroup attitudes. It also tests the predictions of the Recategorization Model of Roth and colleagues (2018) by investigating whether perceived compatibility of distinct groups allows for continued identification with and more similar attitudes towards both a former and new identity. In addition, it extends the predictions of this model beyond contexts of identity change to mutual identification and intergroup attitudes in the context of a lost superordinate category and in a context of historical intergroup violence.

CHAPTER TWO

From Student to Employee: Group Compatibility Predicts Group Identification and
Intergroup Attitudes

Abstract

Transitions go along with the need to integrate a previous outgroup into the self-concept. This study examines whether this integration follows cognitive consistency principles. In line with recent theorizing, we test whether the perceived compatibility of a previous and a current ingroup determines identification with these groups and intergroup attitudes. We primed employees who were former students ($N = 269$) to perceive the groups of students and employees as either more compatible or less compatible and measured the strength of identification and group attitudes with regard to both groups. The findings largely confirmed predictions. Greater compatibility between social groups increased identity integration and reduced intergroup bias. Identity integration mediated the effect of compatibility on intergroup bias. In line with predictions, the voluntariness of group change explained which of the groups people identified more strongly with when groups were perceived low in compatibility. The results of the study provide evidence that integrating identities into the self-concept follows cognitive consistency principles and suggests that emphasizing similarities between previous and current ingroups fosters identity integration and reduces intergroup bias.

Keywords: group change; social identity integration; social identification; intergroup bias; multiple social identities

From Student to Employee: Group Compatibility Predicts Group Identification and Intergroup Attitudes

Transitions are challenging. Particularly the transition to work can come along with stress and discomfort (Ashforth & Saks, 1996; Louis, 1980). These transitions not only mean that people need to get used to a new environment, new colleagues and to learn to manage new tasks but they also change people's social identity. Social identity is that part of the individual's self-concept that is derived from people's membership in social groups (Tajfel, 1978). The transition from student to employee is a major change in people's social identity. Being a student is associated with specific goals, values, and attitudes. It provides people with a sense of who they are based on this group membership. The transition from student to employee means that people need to take on a new social identity, the identity as an employee, that has previously been an outgroup. The present paper investigates how people integrate a previous outgroup into their self-concept having made the transition from student to an employee. We built on previous research indicating that the compatibility between the previous and the new ingroup is a crucial determinant for identity integration. Identity integration occurs when people identify to a similar extent with two groups and as such they show low discrepancy in identification with both of these groups. Importantly, we present a unifying theoretical account that is based on cognitive consistency mechanisms. We test the hypotheses derived from the model in an experiment on a cross sectional sample including contemporary employees who have previously been students.

Social Identity Change

Previous research focussed on the effects of identity salience demonstrating that people's feelings, thoughts, and behaviours can vary depending on which social identity is salient in a specific context (Iyer et al., 2009; Tajfel & Turner, 1979). However, membership in a social group is not static and the current research focuses on more

permanent changes in group membership. When changing between social groups, people face the challenge of integrating a new social group into their self-concept. This may be particularly challenging if they change from an ingroup to a previous outgroup. If a person changes from being a student to becoming an employee, they must integrate the norms, values, and goals of a previous outgroup into their self-concept. Even though still underrepresented in the social psychological literature, research on identity change has highlighted the relevance of identification with the new ingroup for various types of adjustment, such as well-being in the context of transitioning to university (Iyer et al., 2009), and on motivation and task performance in the workplace (Van Knippenberg, 2000).

Despite the relevance of social identification for ingroup attitudes, research on transitions has rarely investigated the consequences of social identity change on group attitudes. Minimizing intergroup bias between social groups in societies in general is important as it contributes to intergroup harmony (Vogt, 1997). Given the relevance for social identification and group attitudes on adjustment, it is important to understand the psychological mechanisms that facilitate or hinder social identification when people change social groups.

A Cognitive Consistency Based Model of Identity Integration

A current model that deals with psychological processes involved in identity integration is the “recategorization model” by Roth and colleagues (2018) that is based on a uniform mechanism for integrating social groups into the self-concept and affords predictions about the development of group attitudes. The authors expand the “balanced identity theory” of Greenwald and colleagues (2002) to account for the integration of new social groups into the individual’s knowledge structure.

People acquire knowledge throughout their lives including knowledge about themselves. This knowledge is stored in memory in the form of associative links between concepts (Collins & Loftus, 1975). Knowledge about themselves then resonates through their attributes and associations with groups. In the social knowledge structure, the self-concept is represented in associations of the self with attributes (e.g., intelligent), group stereotypes are represented in associations of the social group (e.g., students) with attributes (e.g., intelligent), and social identification is represented in associations between the social group and the self (Greenwald et al., 2002). Most importantly, balanced identity theory suggests that the triad of the self, a social group and attributes follows cognitive consistency principles. The two cognitive consistency principles that the balanced identity theory and the recategorization model are built on are the balance congruity and the imbalance dissonance principles. The balance-congruity principle suggests that when two concepts are simultaneously associated with a third concept, the association between the two concepts strengthens. As a consequence, social identification only forms if the self and the social group share attributes (e.g., “I am intelligent, students are intelligent, I identify with students”). The imbalance dissonance principle suggests that no associations will be formed when an association between one of the concepts and a third concept would imply an association between diametrically opposed concepts. This means that if the self and a social group are associated with opposing traits (e.g., “I am diligent, students are lazy, I do not identify with students”), the cognitive network hinders social identification (Greenwald et al., 2002).¹ In addition, balanced identity theory and the recategorization model work off the premise that most people’s self is associated with positive traits resulting in an

¹ Many factors other than traits, such as norms and values, provide the basis of identification, so this is a simplification. We are just suggesting that the balance-congruity and imbalance-dissonance principles overall drive the association with overlapping vs. contradicting features in general.

overall positive self-concept (e.g., Yamaguchi et al., 2007). If self-associated traits are mostly positive and if the cognitive system strives for cognitive consistency between the self, social groups and traits, this implies that self-associated groups are evaluated more positively than self-dissociated groups. As a result, social groups that people identify with are evaluated as more positively than social groups that people do not identify with (Roth & Steffens, 2014).

To account for the integration of new identities into the self-concept, Roth and colleagues (2018) have extended balanced identity theory in their “recategorization model”. Crucial to this extension is the construct of “group compatibility”. Two groups are said to be compatible if their stereotypes, norms, values, etc., are in line with each other and are incompatible if they are not. The model predicts that to maintain cognitive consistency, people’s identification with a current ingroup will be comparably strong with that of its predecessor only if both groups are perceived to be compatible. If a current ingroup is incompatible with a previous ingroup that people strongly identify with, maintaining cognitive consistency causes people to not identify with the current ingroup (unless they disidentify with the previous ingroup).²

If we apply this reasoning to people who made the transition from students to employees, the model predicts that a person will only identify with the groups of students and employees if these groups are perceived to be compatible. Otherwise, a strong identification with both groups would result in cognitive dissonance. Based on the model, Figure 1 illustrates a state of cognitive consistency among representations of the self, the previous ingroup of students and the current ingroup of employees after the transition from university to work. Since people strive for consistency in their

² As the relationship between concepts in the balanced identity theory is bidirectional, it is also possible that identifying similarly strongly with both groups leads to the perception that the two groups are compatible.

cognitions and aim to avoid the aversive feeling that comes along with cognitive dissonance (Festinger, 1957), they will identify with one of two incompatible groups more strongly than with the other. This results in greater discrepancy in the extent to which people identify with these groups.

What determines with which group people identify more strongly when group identities are perceived as incompatible? In general research has shown that voluntary group change is associated with more positive outcomes (e.g., life satisfaction, Echterhoff et al., 2020; Martin et al., 2014; Matschke & Fehr, 2015). Building on this evidence, Roth and colleagues (2018) suggest that people will more strongly identify with a current ingroup when the transition to this ingroup was made more voluntarily. This should particularly be true if groups are perceived to be incompatible. The present study aims to provide empirical evidence for this novel prediction.

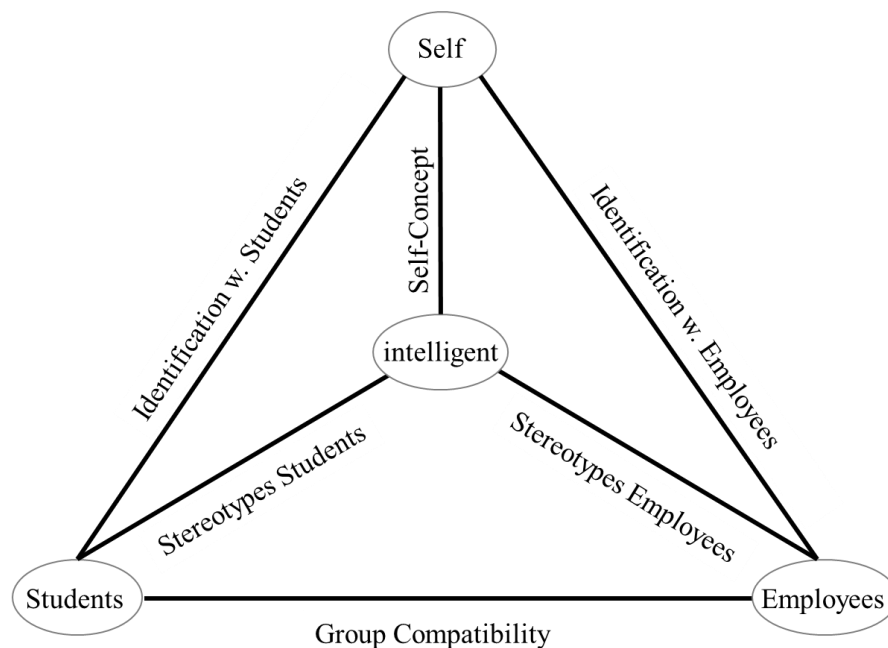


Figure 1. Illustration of the integration of the current employee ingroup along with the previous student ingroup into the self-concept along cognitive consistency principles (adapted from Roth et al., 2018). The oval forms represent concepts, and the lines represent the associations between the concepts: the association between self and group (group identification), association between self and attributes (self-concept), association between group and attribute (stereotypes), association between both groups (group compatibility).

The Present Experiment

The current experiment sets out to test the predictions of the recategorization model (Roth et al., 2018) in the context of the transition from students to employees. Based on the balance congruity and the imbalance dissonance principles outlined in the model, we predict that current employees integrate their previous in-group students and their current in-group employees similarly strongly into the self-concept when they perceive these groups to be more compatible compared to less compatible. Furthermore, we predict that compatibility between students and employees will also lead to reduced discrepancies in attitudes towards these groups. This prediction rests on the assumption that the self is associated with mostly positive traits. As such, social groups that people identify with will also be evaluated more positively than social groups that people do not identify with. Therefore, we additionally predict that the effect of compatibility on discrepancies in intergroup attitudes will be mediated by discrepancies in identification with students and employees.

To test these hypotheses, we experimentally manipulated the compatibility of the two groups, students and employees, in current employees who have been students previously. We assessed identification with students and employees as well as attitudes towards both groups.

In addition, to determine which of the social groups people identify more strongly with when groups are less compatible, we also assessed the voluntariness of the change from students to employees. Based on the recategorization model, people will identify with one group more strongly than with the other when both groups are incompatible. In this case, identification is determined by the degree to which the groups and the self share traits. Based on the balance congruity principle, people will identify more strongly with the group that shares more traits with the self than with the group that shares less traits with the self. We hypothesise that the voluntariness of the

group change moderates with which of the two groups people will identify more strongly. People who more voluntarily join a new group are in a state of readiness to identify with that group more strongly than with the previous group to which they belonged (Brehm, 1956). Therefore, we predict that the more people wanted to become employees the more they will identify with employees relative to students when students and employees are perceived to be low in compatibility. If groups are high in compatibility voluntariness will not affect identification because there is no need for people to identify with one group over the other to achieve cognitive consistency. Thus, the voluntariness with which employees changed from students to employees will moderate the relationship between compatibility and difference in identification with the two groups.³.

Method

Preregistration

(https://osf.io/hkt7m/?view_only=f803a457011b42ca9149d6243142731d) of the study including the hypotheses, sample size, and exclusion criteria along with the material and data of the present research

(https://osf.io/7kncz/?view_only=d62c10b5ff974318a246dfe1a699d9e6) can be found on the Open Science Framework.

Design and Participants

We conducted an online experiment manipulating compatibility (high vs. low) of the social groups “employees” and “students” between participants who were

³ An additional hypothesis on the correlation between duration of group membership and group evaluation was preregistered. However, this hypothesis is not at the core of the present paper. The specific hypothesis along with its results are available in the supplementary material. In addition, we investigated the duration of group membership as a covariate and found that it did not affect the relationship between low vs. high compatibility condition and the outcome variables.

currently employees (full-time, part-time or self-employed) and had previously been students. We manipulated high versus low compatibility by similarity versus dissimilarity priming. The questionnaire was made available on the Prolific.com recruitment platform only to people who fulfilled the inclusion criteria of being currently an employee and having been a student. Participants were randomly assigned to the high versus low compatibility condition.

A priori power analysis (Faul et al., 2009) for one-sided testing of the effect of compatibility on discrepancies in group identification as well as on intergroup attitudes with a t-test for independent means with $\alpha = 0.05$, power $(1 - \beta) = .80$ and a small to medium effect size $d = 0.30$ showed a necessary sample size of $N = 278$ (see preregistration).

Altogether 288 participants completed the study. At the beginning of the study, they read the following inclusion criteria: (1) indication of some similarities/differences (depending on the respective experimental condition) between employees and students, (2) passing the attention check, and (3) to finish the study within 30 minutes. We removed 11 participants who violated these criteria. Furthermore, we excluded those who indicated that they are currently a student ($n = 5$), and those who indicated that they are not currently an employee ($n = 3$; see preregistration for these exclusion criteria⁴).

⁴ We also preregistered that we would exclude participants who worked 20 hours or more alongside their studies. However, this was preregistered to be a conditional exclusion. If more than 10% of participants met this criteria it would not be applied. Forty of the participants (around 14%) indicated that they had worked 20 hours or more alongside their studies. Therefore, this exclusion criterion was not applied. Additionally, we did not apply the exclusion criterion stating that we would exclude participants who indicated on a control item that they have not been a student previously. In fact despite the preselection criterion of Prolific only allowing people to take part in the study who were students previously, the majority of participants indicated on that control item that they have not been a student previously. We followed up with these participants and based on the responses of those in the follow up emails stating that they have misunderstood that item and confirming that they have been students previously, we did not apply that criterion. We also included whether or not participants worked part time

We analysed data of 269 participants (149 women, 120 men, $M_{age} = 36.68$, $SD_{age} = 9.88$, range: 18-66) who were evenly distributed to experimental conditions (high compatibility $n = 135$, low compatibility $n = 134$). The time since participants had become an employee had a mean of 15.42 ($SD = 10.63$, range 1-50) years.

Procedure

After providing consent, participants were prompted to use a personal computer or laptop, to maximize their browser window, and to switch off anything distracting. They read that this study is about the transition from being a student to being an employee. We highlighted that this study is about everyone who used to be a student and currently is an employee (including full-time, part-time jobholders, professionals and people who are self-employed). Anybody who did not fulfil these criteria was asked to exit the study. Participants read the list of criteria that they needed to meet to complete the study successfully. Participants then completed the compatibility manipulation followed by its manipulation check. Then, they completed the group identification scales including an attention check item. Afterwards, participants completed trait ratings and behavioural intentions for both groups followed by voluntariness of identity change. Exploratory items followed and we thanked participants. Completion of the study took on average 10.53 minutes and participants received €1.03 for participating. This study was performed in accordance with the ethical standards of the institutional and national research committee.

Materials

Compatibility manipulation. We used semantic priming (Higgins et al., 1977) to manipulate perceived compatibility between the groups of students and employees. In the high compatibility condition, we asked participants to indicate three commonalities

during university as a moderator in our analyses and the interaction effects were not significant (see supplemental material).

of students and employees. In the low compatibility condition, we asked them to indicate three differences or contradictions between the groups (see supplemental material for the exact wording).

Unless stated otherwise, we assessed answers to all of the items included in the following measures on a 7-point rating scale (1 = *strongly disagree*, 7 = *strongly agree*).

Compatibility manipulation check. We assessed group compatibility with three items. One was a graphical item asking about the overlap between students and employees (Schubert & Otten, 2002). The other two items asked directly about the group compatibility [“The two groups (students, employees) are compatible. Two groups are compatible when they share important attributes, norms, values, rules, and goals”] and incompatibility [“The two groups (students, employees) are incompatible. Two groups are incompatible when important attributes, norms, values, rules and goals contradict or conflict each other, reverse coded]. All items were averaged ($\alpha = .69$). The higher the score the more participants perceived the groups to be compatible.

Discrepancies in group identification. We assessed identification with employees and identification with students with 10-items each. Those items cover a range of identification aspects (see Leach et al., 2008; e.g., “I have a lot in common with the average employee/student”)⁵. We presented items referring to identification with employees and items referring to students intermixed and in random order. Discrepancy scores were calculated by subtracting the student identification scores from the employee identification scores for each of the individual items and then converting these scores to absolute values. All identification discrepancy items were averaged to form a discrepancy in group identification score ($\alpha = .90$). The higher the score the

⁵ The full scale can be found in the supplemental material.

more participants identified with one group over the other indicating that one of the groups is integrated more strongly into the self-concept than the other group.⁶

Discrepancies in group attitudes. Group attitudes were assessed using trait ratings that tap into the affective attitudes component (Turner et al., 2012), and behavioural intentions capturing the behavioural component of attitudes (Rosenberg & Hovland, 1960). Trait ratings consisted of three positive (good, positive, pleasant) and negative (bad, negative, unpleasant) adjective pairs that were rated for students and employees separately. Negative trait ratings were reverse scored. We presented the six traits for each of the groups randomly and randomised order in which we presented traits for students and employees. Discrepancy scores were calculated similarly as discrepancies in group identification (see above). All trait discrepancy items were averaged to form a discrepancy in group attitudes score ($\alpha = .76$). The higher the score the greater the discrepancy between the trait ratings of the two groups reflecting that participants evaluated one group more positive than the other group.

We assessed behavioural intentions with six items in which participants indicated how much statements about possible behaviours towards people from the respective social groups apply (e.g., “I want to spend time with employees/students”, Turner et al., 2012). Negative behavioural intentions were reverse scored. We presented the six items for each of the groups randomly in single block and randomised group order. Similar to the trait ratings discrepancy score, behavioural intentions discrepancy scores were calculated ($\alpha = .76$). The higher the score the greater the discrepancy between the behavioural intentions towards the two groups.

⁶ In addition, we assessed discrepancy in group identification with a single item “I identify with ...” (Postmes et al., 2013), ranging from 1 = *students* to 7 = *employees*.

Voluntariness of identity change. Four items presented in random order assessed the voluntariness of the group change (e.g., “I couldn’t wait to become an employee”) along with the instruction to think back to the time when they became employees. Two reversed score items were recoded before all items were averaged ($\alpha = .81$). The higher the score the stronger people wished to become an employee.

Exploratory items and exclusion criteria, and demographics. We assessed perceived ease of retrieval of indicating similarities or differences between the two groups respectively (Schwarz et al., 1991). Participants also indicated how long it was since they became an employee, whether they were currently a student and employment during participants’ time as a student. An attention check item asked them to tick the button on the far right. Furthermore, they indicated their English language ability (first language, second language etc.). We assessed demographic data (age and gender) and participants were given the opportunity to leave comments.

Results

We tested all confirmatory hypotheses one-sided (see preregistration). Therefore, all reported p -values are half the size of those for two-tailed testing.

Manipulation Check

Supporting a successful compatibility manipulation, an independent samples t -test showed that participants in the high compatibility condition ($M = 4.74$, $SD = 0.98$) perceived the social groups of students and employees to be significantly more compatible than did the participants in the low compatibility condition ($M = 3.84$, $SD = 0.98$), $t(267) = -7.52$, $p < .001$, $d = 0.92$.

Discrepancies in Group Identification

In line with the hypothesis, an independent samples t -test showed that the discrepancy in group identification in the low compatibility condition ($M = 1.90$, $SD =$

1.18) was significantly larger than in the high compatibility condition ($M = 1.53$, $SD = 0.87$), $t(267) = 2.91$, $p = .002$, $d = 0.35$, see Figure 2.⁷ These findings support the hypothesis that people identify with one of the two groups more strongly than with the other group when group compatibility is low but identify more equally strong with both social groups, students and employees, when group compatibility is high.

Discrepancies in Group Attitudes

In line with the hypothesis, an independent samples t-test showed that discrepancies in trait ratings of employees and students were significantly greater in the low compatibility condition ($M = 0.76$, $SD = 0.73$) than in the high compatibility condition ($M = 0.61$, $SD = 0.52$), $t(267) = 1.95$, $p = .027$, $d = 0.24$. The same t-test on discrepancies in behavioural intentions failed to reach the pre-set criterion of statistical significance, $t(267) = 1.64$, $p = .051$, $d = 0.20$, see Figure 2.

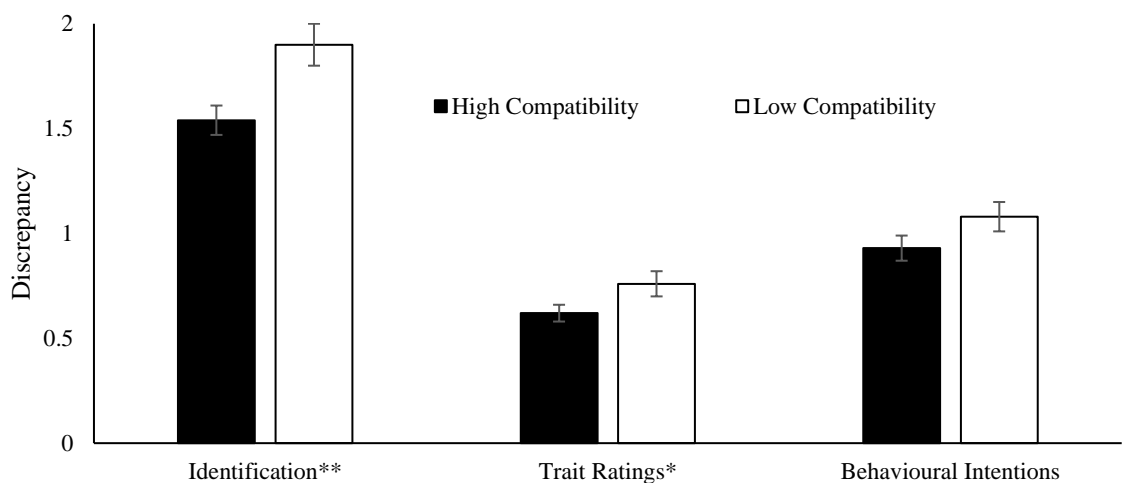


Figure 2. Mean values of discrepancy in group identification, trait ratings and behavioural intentions (with standard errors) in the high and low compatibility conditions. Discrepancy: 0 = equally strong identification / positive evaluation of both groups to 6 = maximal strong identification / positive evaluation of one group and minimal identification / positive evaluation of the other group. ** $p < .01$, * $p < .05$.

⁷ The same analysis on the single item identification measure replicated this result (low compatibility: $M = 1.57$, $SD = 1.04$, high compatibility: $M = 1.20$, $SD = 1.00$), $t(267) = 2.95$, $p = .002$, $d = 0.36$.

Discrepancies in Identification as a Mediator

The intercorrelations of the outcome variables are displayed in Table 1.

Table 1 *Outcome variable correlations*

	Discrepancy in TR	Discrepancy in BI
Discrepancy in ID	.32**	.54**
Discrepancy in TR		.53**

Note. ** $p < .01$ (Two-Tailed). * $p < .05$ (Two-Tailed). ID = Identification, TR = Trait Ratings, BI = Behavioural Intentions. Higher scores indicate greater discrepancy between both groups for all measures.

To test whether data are in line with the hypothesis that the effect of compatibility on discrepancies in group attitudes is mediated by discrepancies in group identification, we conducted two separate mediation models one with trait discrepancies as criterion and one with behavioural intentions as criterion. Results are presented in Figure 3. We implemented bootstrapping with 10,000 resamples using PROCESS Model 4 for SPSS (Hayes, 2017). The indirect effect of compatibility on discrepancy in trait ratings through discrepancy in identification was reliable $b = -0.07$, $SE = 0.03$, 95% CI [-0.14, -0.02]. The indirect effect of compatibility via identification discrepancies replicated for discrepancy in behavioural intentions $b = -0.15$, $SE = 0.05$, 95% CI [-0.26, -0.05].⁸

⁸ Replacing the identification scale with the single item measure of identification discrepancies replicated the indirect effect of compatibility on discrepancy in behavioural intentions $b = -0.06$, $SE = 0.03$, 95% CI [-0.13, -0.02] but the indirect effect of compatibility on discrepancy in trait ratings did not, $b = -0.02$, $SE = 0.02$, 95% CI [-0.06, 0.01].

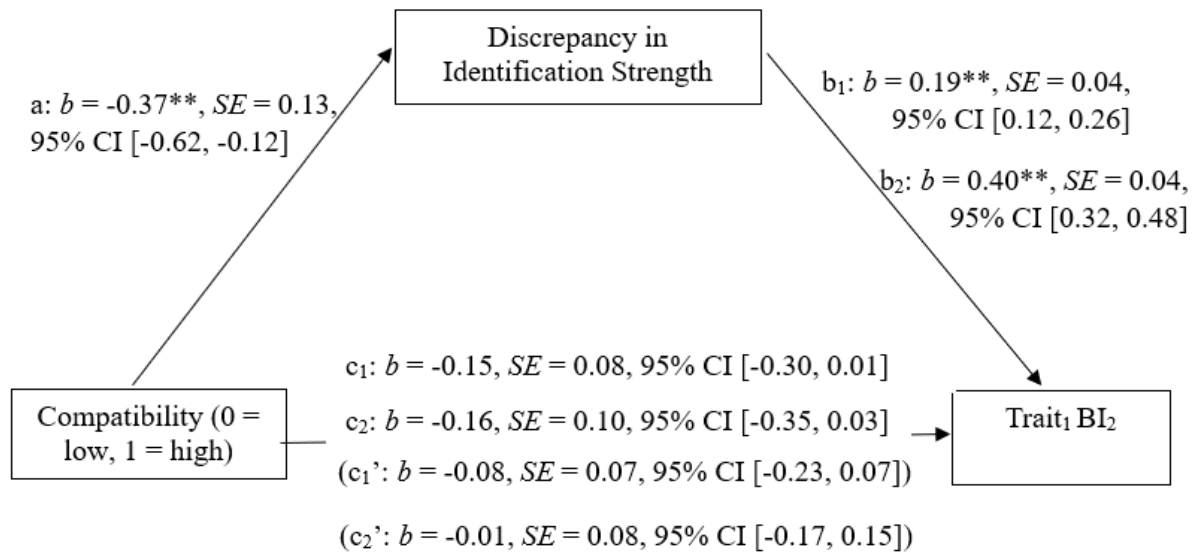


Figure 3. Mediation of discrepancy in identification strength on the relationship between compatibility and discrepancies in trait ratings (subscript₁) and discrepancies in behavioural intentions (subscript₂). Trait = discrepancy in trait ratings, BI = discrepancy in behavioural intentions. $^{**}p < .01$. $^*p < .05$.

Overall results support the prediction, that differences in the strength of identification with employees and students mediate the effect of the compatibility of students and employees on intergroup attitudes (both measured by trait ratings and behavioural tendencies).⁹

Voluntariness of Identity change as a Moderator

In order to determine which of the social groups people identify more strongly with when groups are less compatible, we calculated the relative identification score based on the difference between identification with employees and identification with students (identification with employees minus identification with students, $\alpha = .92$). Positive values reflect stronger identification with employees than with students and vice versa. Values close to zero indicate a similarly strong identification with the two groups. Differences in identification with employees and students was positively

⁹ We also explored a sequential mediation model in line with theory claiming that attitudes drive behavioural intentions (for more details see supplemental material).

correlated with voluntariness of group change, $r = .33, p < .001$ (two-tailed). In order to test whether the wish to become an employee moderates with which group people identify more strongly with when employees and students are perceived to be low in compatibility, we conducted moderation analysis using the PROCESS model 1 for SPSS (Hayes, 2017). We entered manipulated compatibility (0 = low vs. 1 = high) along with the centred metric variable of voluntariness as predictors and relative group identification as criterion in a regression model. The interaction voluntariness \times compatibility was statistically significant, $t(265) = -2.49, p = .013$, indicating that voluntariness moderated the effect of compatibility on relative group identification ($b = -.26, SE = 0.10$).¹⁰ Simple slopes analyses showed that, in both the high compatibility condition, $b = 0.15, SE = 0.06, t(134) = 2.38, p = .019$ and in the low compatibility condition, $b = 0.41, SE = 0.08, t(133) = 5.07, p < .001$, voluntariness was positively related to relative group identification, but in line with the hypothesis this relationship was stronger in the low compatibility condition. This indicates that in both conditions, the more people wished to become an employee the higher their identification with employees relative to students, but this effect is even stronger when the two groups are perceived as low in compatibility.

¹⁰ When replacing the identification scale with the single item measure of identification the interaction effect of compatibility condition and voluntariness of group change was not significant $t(265) = 1.77, p = .079$.

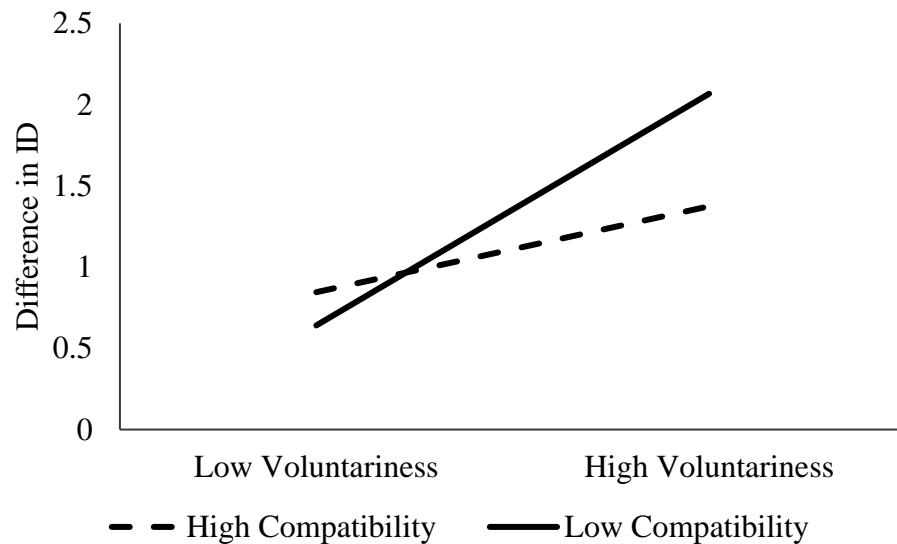


Figure 4. Presentation of the conditional effects of compatibility of students and employees on identification with employees relative to students for high (+1 *SD*) and low (-1 *SD*) voluntariness to become an employee. Relative identification 6 = maximum identification with employees and minimum identification with students, 0 = equally strong identification with employees and students, -6 = minimum identification with employees and maximum identification with students. ID = Identification.

Discussion

The present experiment demonstrated that perceived compatibility between the social groups of students and employees determines whether the current employee ingroup is integrated along with the previous student ingroup into the self-concept following the transition from students to employees. Current employees who perceived their previous ingroup of students and their current ingroup of employees, as less compatible identified either more strongly with students or with employees compared to those who perceived these ingroups as more compatible. Similarly, employees who perceived students and employees as less compatible preferred one of the groups over the other compared to those who perceived the two groups as more compatible. The current data are also in line with the hypothesis that group identification contributes to explaining the effect of compatibility on intergroup bias. Those participants who perceived the two groups as more compatible compared to less compatible identified more similarly with both groups, which in turn explained more similar attitudes towards

the two groups. This was the case for affective intergroup bias and tended to hold true for behavioural intentions towards the groups.

Even though, in general, the wish to become an employee was positively associated with stronger identification with employees relative to students this association was more pronounced when students and employees were perceived as rather incompatible. This pattern of results supports the assumption that, in addition to cognitive processes, additional motivational factors influence the strength of identification with social groups, specifically how voluntarily the group change occurs (Roth et al., 2018). When a previous and current ingroup are perceived to be incompatible, the voluntariness of having changed group membership explains with which of the two groups people identify more strongly.

Theoretical Implications

The present study tested predictions derived from the recategorization model (Roth et al., 2018) for the integration of student and employee identities when people had made the transition from students to employees. Results not only support the validity of the model but also the general claim made in previous literature, that group compatibility influences whether and how easily new ingroups are integrated into one's self-concept (Amiot et al., 2007; Benet-Martínez, 2012). Importantly, the recategorization model integrates this previous research by suggesting that mechanisms of cognitive consistency determine identity integration. As such, the model also can potentially explain why people identify only with one, rather than both cultures when these cultures are perceived to be incompatible with each other (Benet-Martínez & Haritatos, 2005). However, as the current research specifically investigated a natural change in identity following the completion of university, further research would be required in order to test whether the predictions hold true in the context of integrating a new cultural group into the self-concept. Results are in line with previous findings that

perceived compatibility of previous and new ingroups increases the likelihood of identification with a new ingroup (Iyer et al., 2009; Matschke & Fehr, 2015) and that perceived compatibility between one's identity and membership of a group corresponds with feelings of belonging (London et al., 2011). The present results are also in line with previous research, indicating a connection between social identification and intergroup bias (Brewer, 1979). Furthermore, findings support the assumption that emphasizing commonalities between groups can reduce intergroup bias (Crisp & Beck, 2005; Hewstone et al., 2002).

Practical Implications

Since the failure of integrating new social groups into the self-concept can have negative consequences for the functionality of a society, research into the processes that take place when there is a change between social groups and the associated implications for identification and group attitudes is of particular interest. In modern society, changes in group membership occur all the time. Positive ingroup evaluation increases adjustment and functioning and the model tested in this research helps to explain and predict when this will occur. The present research suggests that the emphasis on similarities between previous and current ingroups can reduce intergroup bias. Therefore, for people to both successfully integrate new groups and at the same time retain positive attitudes towards previous groups, a focus on the similarities between the two groups can be beneficial. Repeatedly increasing the accessibility of similarities rather than differences between previous and current identities may be a practicable approach for people overcoming barriers in identifying with new ingroups particularly if these groups have been outgroups before.

Limitations and Future Directions

This is the first study testing the predictions of the presented recategorization model. An issue of the present study concerns the internal consistency of the

implemented compatibility measure which was acceptable but low (Moss et al., 1998). This is not a major concern for the present results, as we manipulated perceived compatibility, and the scale merely functions as a manipulation check however, for future cross-sectional or longitudinal designs a reliable scale will be of greater importance. So far, a reliable and validated scale only exists for assessing perceived compatibility of national groups (Huynh et al., 2018). However, as people experience many different types of identity change other than those related to acculturation, it is important that future research aims to validate a universal scale that can be used in relation to any type of group change.

A strength of the current research is that we experimentally manipulated perceived compatibility, which allowed us to draw causal conclusions about the effect of compatibility on group identification and intergroup attitudes. For future research however, a longitudinal study is needed. An issue with the current research is that the measure of voluntariness is a retrospective measure. Participants were asked to remember the time when they started their careers and to recall their attitudes towards changing groups at that time. For data collected retrospectively, the basic principle is that distortion of memory may reproduce information incorrectly (Hassan, 2006). A study which collects data before and after a group change occurs would solve this issue.

On a related note, the results that group identification mediated the effect of group compatibility on intergroup attitudes does not imply causation. It merely demonstrates that the present data are in line with the assumption that group identification explains differences in intergroup attitudes caused by group compatibility. Future research could manipulate discrepancies in group identification in addition to group compatibility to test whether discrepancies in identification cause intergroup bias or vice versa. Clearly, this could also be tested by conducting a longitudinal study investigating the effects of changes in group membership depending on perceived group

compatibility. Based on the present recategorization model and the underlying cognitive consistency principles we do not have clear predictions about the directionality. In fact, we believe that the cognitive consistency principles work bidirectional; whether identification drives intergroup bias or intergroup bias drives identification may depend on individual moderators. For example, when people have a choice in selecting their group membership, group attitudes may drive identification whereas when people are forced to become a member of a social group identification may drive attitudes.

The time passed since the transition varied between participants. This may have affected the efficacy of the manipulation. One could imagine that recalling similarities or dissimilarities between students and employees is easier when less compared to more time has elapsed since the transition. However, we believe that this does not compromise the present results that are based on randomly assigning employees to the experimental low compatibility and high compatibility condition.

Conclusion

The results of the present study provide some evidence for important real-life implications. Highlighting similarities between previous and new ingroups could support successful transitions between groups and cultivate more similar attitudes towards previous and new ingroups fostering intergroup harmony. As the recategorization model, which acted as the theoretical framework for the current study, makes predictions related to any group change, the potential benefits of the present research are wide ranging.

CHAPTER THREE

Brexit and the Loss of EU Membership for UK Citizens: EU Identification and UK
Preference

Abstract

This study investigated the relationship between perceived group compatibility of UK and EU identities, social identification, and intergroup attitudes in the wake of Brexit. In three waves of data collection, two prior to the UK's official withdrawal from the EU ($N = 389$ and $N = 270$) and one afterward ($N = 264$), we tested whether perceived compatibility between EU and UK identities relates to intergroup bias and whether this is explained by identification with these groups. In line with a cognitive consistency approach to multiple identities and intergroup attitudes, perceived compatibility was negatively associated with intergroup bias. Specifically, parallel mediation analysis showed that EU identification mediated the relationship between perceived compatibility and intergroup bias at each time point. Longitudinal analyses, however, showed that identification with EU citizens predicted perceived group compatibility at subsequent time points with no indication of the reverse relationship over time. Our results indicate that at specific time points people make cognitively consistent judgements about the perceived compatibility of UK and EU citizens and attitudes towards both groups. Additionally, EU identification can reduce aspects of UK ingroup favouritism over time.

Brexit and the Loss of EU Membership for UK citizens: EU Identification and UK Preference

On June 23rd 2016, a slight majority of UK citizens voted to leave the EU after more than 40 years of membership. Subsequently, several steps were taken towards the goal of formal separation. This withdrawal implies that the UK becomes a separate social category that is no longer included in the superordinate category of the EU. In line with general social categorization principles (Turner, 1999; Turner & Oakes, 1986), categorizing people into the same rather than distinct social groups decreases ingroup favouritism—preference for the ingroup over the outgroup (Gaertner et al., 1989). In the case of the EU, one explanation of decreased ingroup favouritism of different EU national groups is their joint categorisation as members, and thus subgroups of the superordinate category of EU citizens. However, little research has addressed how the reverse process of removing a subgroup from a superordinate category affects ingroup favouritism. Brexit provides a unique opportunity to investigate how separating a subordinate group from a superordinate category affects intergroup attitudes.

The present research investigates UK citizen's ingroup preference over EU citizens in the wake of the Brexit referendum. We propose that the separation of the UK subordinate category from the EU superordinate category will decrease perceived compatibility between these groups, which in turn affects intergroup attitudes. Specifically, we suggest that the UK's withdrawal from the EU increases the salience of separate social categories: UK citizens and citizens from EU countries. Given that categorization increases the perception of similarities between members of the same social group and differences between members from different social groups (Tajfel & Wilkes, 1963; see McGarty, 1999 for a discussion of more intergroup differences than intragroup similarities), we expected that perceived compatibility between UK citizens and EU citizens will affect identification with these groups. Much evidence has

previously demonstrated that people prefer members of groups they identify more strongly with, compared to members of groups they identify with less strongly (Allport, 1954; Ashburn-Nardo et al., 2001; Brewer, 1979; Hewstone et al., 2002a; Otten & Wentura, 1999; Roth & Steffens, 2014). Building on this, we expected that continued identification with the former superordinate category, EU citizens, while accounting for their identification with the subordinate category, UK citizens, will in turn decrease preference for UK citizens relative to EU citizens.

Social Identity and Intergroup Attitudes

People's social identities form part of their self-concept and as such define the person as who they are based on their group memberships (Easterbrook & Vignoles, 2012; Tajfel, 1978; Tajfel & Turner, 1986; Turner et al., 1987). As part of people's self-concept, social group memberships influence peoples' thoughts (Van Bavel & Cunningham, 2012b), feelings (Brewer, 1999) and behaviour (Postmes et al., 2005). Additionally, the extent to which people identify with a social group dictates how much that social group affects outcomes such as intergroup attitudes (Leach et al., 2008; Turner, 1999). Research has demonstrated that people show more favourable attitudes towards members of social groups that they identify with compared to members of social groups that they identify less strongly with (Brewer, 1999). These ingroup preferences can appear at cognitive, affective or behavioural levels (Mackie & Smith, 1998).

Superordinate Category Loss

People who view each other as belonging to a common group have a shared social identity. The social identity approach—comprising of social identity theory (Tajfel, 1978) and self-categorization theory (Turner et al., 1987)—suggests that shared social identities can provide a sense of connectedness that in turn enhances prosocial orientation, positive intergroup evaluations, and facilitates supportive behaviour

(Gaertner et al., 2000). This approach also asserts that when the salience of intergroup distinctions weakens, intergroup bias can be reduced (Stone & Crisp, 2007). The Common Ingroup Identity Model (CIIM) attributes these outcomes to a transformation of common category members' perceptions of group boundaries from "us" and "them" to a more inclusive "we" (Gaertner et al., 1993; but see Mummendey & Wenzel, 1999).

The process of re-categorizing members from distinct social categories into a superordinate category may help perceiving distinct social categories to be compatible with each other. Previous research has demonstrated how the mere process of categorization increases the perception of similarities within category boundaries and differences between them (Tajfel & Wilkes, 1963) and that a common superordinate category membership increases perceived compatibility between members of previously distinct social categories (Brown & Abrams, 1986; Brown, 1984; Hogg & Turner, 1985; Stein et al., 1965; Wilder, 1984). In addition, research has investigated how the inclusion of a subordinate category into a larger superordinate category positively affects intergroup attitudes and prosociality towards outgroups (Houlette et al., 2004; Levine et al., 2005).

Little research has investigated the reverse process of losing a superordinate category membership, or its consequences for social identity and intergroup attitudes. Building on this premise and research on common ingroup identity (Dovidio et al., 2010; Kunst et al., 2015; Levine et al., 2005), we suggest that losing a previous superordinate category may strengthen perceived distinctions and thus perceived incompatibility between the subordinate category and the previous superordinate category in members who belong to the subordinate category. The increased incompatibility between the subordinate category and the former superordinate category may then contribute to fostering preferences for members of the subordinate category. Applying this reasoning to Brexit suggests that with the loss of EU membership, UK

citizens will perceive greater intergroup distinctions and thus less compatibility between their ingroup of UK citizens and citizens of remaining EU countries, which in turn would lead to a display of increased preference for UK citizens relative to EU citizens. Despite a lack of social psychological research on loss of a superordinate category, recent research has indicated that a sense of common identity loss among members of a minority group increases intentions to take part in violent forms of action (Saguy et al., 2020) which may be driven by increased intergroup bias.

Losing (and Gaining) Social Groups

Research investigating when people join new social groups may be informative about the reverse process of losing a category membership. A few approaches to understanding when new groups become part of one's social identity exist. Looking at these approaches may help us to understand the consequences of losing a superordinate identity on intergroup attitudes. These approaches exist in various disciplines but theoretical models explaining the integration of new social groups into the self-concept are particularly prominent in acculturation research. They focus on the influence that the compatibility of different groups has on whether or not people integrate a new group membership into their self-concept (Benet-Martínez, 2012; Benet-Martínez & Haritatos, 2005). From a broader perspective, Amiot and colleagues' (2007) stage model of identity integration focuses on how the degree of commonality between existing and new social groups determines how easily people integrate a new social group into their self-concept.

Research has provided evidence for the proposition that compatibility between social groups facilitates identity integration (London et al., 2011). In addition, both Iyer and colleagues (2009) and Matschke and Fehr (2017) have shown that compatibility of previous and new ingroups increased the likelihood of identification with them, providing initial evidence for the notion that perceived compatibility of a present

(subordinate) ingroup and a former (superordinate) group predicts continued identification with the former superordinate category.

A current model that deals with psychological processes involved in identity integration and addresses changes in identity is the model by Roth and colleagues (2018). These authors present a uniform mechanism for integrating social groups into the self-concept and derive predictions for the development of group attitudes. Specifically, they suggest that the integration of social groups into the self-concept follows cognitive consistency principles (also see Greenwald et al., 2002). As such, they suggest that people's identification with multiple social groups depends on the (in)compatibility of these groups. If an ingroup is perceived to be compatible with another social group, and people identify strongly with their ingroup, this facilitates identification with the other social group. If, however, an ingroup is perceived to be incompatible with the other social group and people identify strongly with the ingroup this hinders identification with the other social group. This is similar to and expands on the research that shows that one driver of group identification is the overlap between the group and the (usually) positive self-concept (van Veelen et al., 2016).

Roth and colleagues (2018) also suggest that the same consistency mechanism drives intergroup attitudes. Thus, people hold similar attitudes towards the ingroup and another group if the groups are perceived to be compatible, but diverging attitudes and thus increased intergroup bias if the groups are incompatible (for empirical evidence see Loughnane et al., 2021). We acknowledge that in the current context of identity loss many motivational and social factors may influence whether UK citizens continue to identify with the former superordinate category of EU citizens or display differences in attitudes towards UK citizens and EU citizens. The present research aims to test predictions from the cognitive consistency model of identity integration and apply its predictions to the case of identity loss of UK citizens due to Brexit. Thus, we focused

on how the perception of group compatibility is related to group identification and group preferences from a cognitive consistency perspective.

The Present Study

The present study builds upon previous evidence that compatibility between an ingroup and another social group allows identification with the other social group if identification with the ingroup is present. Identification in turn is associated with intergroup attitudes in the way that people show stronger preferences for the group that they identify more strongly with. We apply these predictions to the loss of the superordinate EU category membership of UK citizens due to Brexit. We expected that the loss of the superordinate category will be related to decreased perceptions of compatibility of UK citizens and remaining EU citizens. Thus, we aimed to investigate the relationship between the perceived compatibility of UK and EU citizens and differences in attitudes towards both groups thus, group preference. We predicted that perceived compatibility is associated with different degrees of identification with UK citizens and EU citizens, which then relates to group preference. While UK citizens are likely to identify with their ingroup anyway, EU identification will be higher when participants perceive the two groups to be compatible, and this will in turn be associated with less preference for UK citizens relative to EU citizens (i.e., the difference in attitudes towards both groups).

From a cognitive consistency perspective, we expected that people will show cognitively consistent judgments particularly when judgements are assessed at the same point in time because in order for the person to note deviations from consistency it has been proposed that all related cognitions need to be salient (Gawronski, 2012). Thus, we expected to find the predicted pattern between variables cross-sectionally. However, since the consequences of Brexit unfold over time, we additionally investigated the effect of perceived group compatibility on UK and EU identification and group

preferences over time to explore whether it may be a driving factor for intergroup relations longitudinally.

We collected data of UK citizens at three distinct time points and tested our hypotheses using cross-sectional models first. Then, we explored the relationship between the variables longitudinally using cross-lagged panel analysis.

Method

We preregistered the hypotheses for the cross-sectional analysis and aimed to explore relationships between variables over time. We also preregistered sample sizes and exclusion criteria, as well as the material and data for the current research prior to the Time 3 data collection on the Open Science Framework

(https://osf.io/kx62u/?view_only=1ea65e765afc483cb07895c89e84996a;

https://osf.io/zxd6e/?view_only=85460e88e612441491357a219f68f6f6).¹¹

Study Design and Participants

We collected data of UK citizens at three time points, conducting cross-sectional analysis each time. We then explored relationships longitudinally. We collected Time 1 data early during the Brexit transition period in January 2020. We collected Time 2 in October 2020, shortly before the official withdraw of the UK from the EU, and Time 3 in January 2021, shortly following the official withdrawal. The first author's university research ethics committee granted ethical approval (ref: 2019_11_18_EHS).

We recruited UK citizens through the online participant recruitment platform Prolific.co. The invitation to take part stated that participants must be a UK citizen who

¹¹ We additionally preregistered for Time 1 hypotheses for cross-sectional analysis that focused on the absolute difference values of responses towards the two groups. These predictions were supported. The link to these preregistrations along with the results can be found in the supplemental material.

holds no other EU citizenships¹². In line with previous research that suggests a minimum of 200 participants to avoid a high rate of Type 1 error in structural equation modelling (SEM) analysis (Sideridis et al., 2014) we initially aimed to ensure 200 participants at Time 3. To allow an attrition rate of up to 50%, we aimed to recruit at least 400 participants at Time 1. However, upon analysing the data we utilised the more sophisticated maximum likelihood estimation approach (explained in greater detail below). The total sample at Time 1 comprised of 421 participants. Only those participants who took part at Time 1 were invited to take part at subsequent time points. Of the 421 participants, 389 completed the entire questionnaire and met the preregistered inclusion criteria of passing the attention check (73% female; mean age 35.72). At Time 2, 270 respondents completed the entire questionnaire without failing the attention check (75.2% female; mean age 37.48). At Time 3, 264 respondents completed the entire questionnaire without failing the attention check (74.2% female; mean age 38.54). See Table 1 for additional sample information.

¹² We preregistered at Time 1 that participants who indicated that they would not lose their EU membership following the referendum would be excluded. We included the caveat that if these participants were many that this criteria would be ignored as participants had already been made aware when invited to take part that they should not hold any other EU citizenship. Therefore, indicating that they would not lose EU citizenship was likely a misunderstanding of the item. As 174 participants indicated at Time 1 that they would not lose EU citizenship, this exclusion criteria was ignored and participants were not asked at subsequent time points. Similar results are found when those participants were removed (see supplemental material).

Table 1. *Breakdown of participants by country in the UK, their vote in the Brexit referendum, and what they would vote if another referendum was held.*

	Time 1	Time 2	Time 3
<u>Country in the UK</u>			
England	320 (82.3%)	223 (82.6%)	213 (80.7%)
Wales	19 (4.9%)	13 (4.8%)	11 (4.2%)
Scotland	44 (11.3%)	31 (11.5%)	34 (12.9%)
Northern Ireland	6 (1.5%)	3 (1.1%)	5 (1.9%)
Other	0 (0.0%)	0 (0.0%)	1 (0.4%)
<u>Brexit Vote</u>			
Leave	94 (24.2%)	64 (23.7%)	67 (25.4%)
Remain	218 (56.0%)	154 (57.0%)	146 (55.3%)
Did not vote	72 (18.5%)	51 (18.9%)	50 (18.9%)
Could not remember	5 (1.2%)	1 (0.4%)	1 (0.4%)
<u>Brexit Vote Intention</u>			
Leave	80 (20.6%)	52 (19.3%)	63 (23.9%)
Remain	267 (68.6%)	188 (69.6%)	173 (65.5%)
Undecided	27 (6.9%)	24 (8.9%)	20 (7.6%)
Would not vote	15 (3.9%)	6 (2.2%)	8 (3.0%)

Notes. The voting intentions of participants in the present samples show the same patterns as polling results conducted at similar time points (whatukthinks.org, 2020), i.e., majority would vote remain. Our sample however shows a greater percentage of participants indicating that they would vote remain and a lower percentage of participants who would vote to leave.

For the longitudinal analysis, all respondents' data were included, and maximum likelihood estimates were employed to deal with missing data (unless participants failed the attention check in which case participant's data from that time point was removed). In SEM analyses, full information maximum likelihood allows the generation of more accurate parameter estimates for which partly recorded (or missing) data may be considered to be missing at random (Enders, 2001; Newman, 2003; Swart et al., 2011). In total, the data of 401 participants were included in the longitudinal analyses¹³.

¹³ The overall sample in the longitudinal analysis is greater than the number of participants at Time 1 as the longitudinal analysis utilised full information maximum likelihood estimates to deal with missing data while we omitted those who did not complete the questionnaire in full for the cross-sectional analysis.

Measures

We assessed answers to all items on 7-point rating scales (1 = *strongly disagree*, 7 = *strongly agree*) unless otherwise stated.

Perceived group compatibility. We assessed perceived compatibility with three items that we presented in random order. Two items asked directly about perceived group compatibility [“EU citizens and UK citizens are compatible (there is harmony between the groups in terms of norms, values and rules)”] and incompatibility [“EU citizens and UK citizens are incompatible (there is conflict between the groups in terms of norms, values and rules)”]. The third item was a graphical representation asking about the overlap between both groups (Schubert & Otten, 2002). It consists of seven pictures, on each of which two circles of the same size that referred to “UK Citizens” and “EU Citizens” respectively can be seen at different distances. While the circles on the first picture are far apart, they overlap almost completely in the seventh image.¹⁴ Negatively polarized items were reverse scored and all items were averaged (Time 1 $\alpha = .84$; Time 2 $\alpha = .84$; Time 3 $\alpha = .86$). Higher scores indicate higher perceived compatibility of EU and UK citizens.

Social identification. We assessed identification with EU citizens and UK citizens using nine-items each that capture the breadth of social identification (Leach et al., 2008; e.g., “I feel solidarity with UK/EU citizens”). All social identification items were presented in random order. Mean scores for both identification with UK citizens (Time 1 $\alpha = .91$; Time 2 $\alpha = .96$; Time 3 $\alpha = .97$) and EU citizens (Time 1 $\alpha = .95$; Time

¹⁴ At Time 1, three additional items were included to measure perceived compatibility of the two groups. They were adapted from Huynh and colleagues (2018) Bicultural Identity Integration Scale-Version 2 (BIIS-2). In an attempt to reduce the time spent by participants completing the questionnaire this was reduced to three items. Similar results were found at Time 1 using the three item and six item measure of perceived compatibility.

2 $\alpha = .94$; Time 3 $\alpha = .94$) were calculated. Higher scores represent stronger identification with the respective social group.

Intergroup Attitudes. We assessed two aspects of group attitudes; evaluations (Turner et al., 2012) and behavioural intentions (Rosenberg & Hovland, 1960). We assessed group evaluations with three positive (pleasant, good, positive) and three negative (unpleasant, bad, negative) traits that were rated for both UK and EU citizens. Traits referring to UK citizens and EU citizens were presented in a random order. We reverse scored negative traits and calculated group difference scores by subtracting the EU citizens' scores from the UK citizens' scores. We then calculated the average of the difference scores (Time 1 $\alpha = .85$; Time 2 $\alpha = .86$; Time 3 $\alpha = .85$) to form our measure of differences in group evaluations with higher positive scores indicating more positive evaluations of UK compared to EU citizens.

We assessed behavioural intentions with six items (see Turner et al., 2012; Wildschut et al., 2014). Participants indicated how much statements describing behavioural intentions towards members of the respective social group applied to them (e.g., "I want to talk to UK/EU citizens"). Items referring to intentions towards UK citizens and EU citizens were presented in random order. Negative behavioural intentions (e.g., "I want to avoid UK/EU citizens") were reverse scored. We calculated difference scores by subtracting the EU citizens' scores from the UK scores. We then calculated the average of the difference scores (Time 1 $\alpha = .88$; Time 2 $\alpha = .87$; Time 3 $\alpha = .89$) to form our measure of differences in behavioural intention. Higher positive scores indicate more positive behavioural intentions toward UK citizens compared to EU citizens and vice versa.

Procedure

Participants read that the research was about understanding the consequences of changing social groups. We highlighted that this study was specifically about people

from the UK who did not hold citizenship of any other EU country (so therefore will no longer be EU citizens following Brexit). Participants gave consent before progressing to the questionnaire. We specified that all the questions would refer to either citizens of the UK or citizens of the EU. Participants started by rating perceived compatibility. Then, they filled in the social identification ratings. We also included the attention check in this section. Next, participants completed trait ratings and behavioural intentions for both groups. Finally, some additional items not of interest for the present paper (for the full questionnaire see https://osf.io/pzuvr/?view_only=87899f0bd66d4c9a92f11bd6cb8ec95a), demographics (age and gender) and additional sample information items (described in Table 1) followed. After completion, participants were fully debriefed and thanked. Average completion time at each time point was 8 minutes. Participants received £1 for participating at Time 1, £1 for participating at Time 2 and £1.10 for participating at Time 3.

Results

Hypotheses Testing: Cross-sectional Analysis

The means, standard deviations, and correlations between the variables at Times 1, 2, and 3 are displayed in Tables 2, 3, and 4 respectively.

Table 2. *Correlations, means and standard deviations at Time 1*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	4.87	1.34		-.082	.541***	-.267***	-.373***
2. UK Identification	4.99	1.26			.073	.493***	.596***
3. EU Identification	4.67	1.25				-.359***	-.494***
4. Group Evaluations Difference	-0.39	0.91					.661***
5. Behavioural Intentions Difference	-0.10	1.22					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3. *Correlations, means and standard deviations at Time 2*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	4.86	1.22		-.117	.658***	-.333***	-.467***
2. UK Identification	4.91	1.25			.057	.532***	.580***
3. EU Identification	4.57	1.18				-.353***	-.538***
4. Group Evaluations Difference	-0.35	0.87					.574***
5. Behavioural Intentions Difference	-0.14	1.13					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4. *Correlations, means and standard deviations at Time 3*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	4.72	1.27		-.076	.617***	-.129***	-.357***
2. UK Identification	4.86	1.27			.130***	.454***	.509***
3. EU Identification	4.58	1.15				-.214***	-.467***
4. Group Evaluations Difference	-0.33	0.79					.601***
5. Behavioural Intentions Difference	-0.14	1.17					

* $p < .05$, ** $p < .01$, *** $p < .001$.

We tested whether increased perceived group compatibility was associated with intergroup attitudes and whether this relationship was mediated via identification with EU citizens or UK citizens. We tested these relationships for two aspects of intergroup attitudes (1) differences in group evaluations and (2) group differences in behavioural intentions in two separate parallel mediation models using the PROCESS macro for SPSS (Hayes, 2017).¹⁵ The indirect effects were tested using a 10,000 bootstrapped estimates. Unstandardized regression coefficients are presented.

Differences in Group Evaluation

At each time point, the higher participants perceived compatibility the less they showed preferences towards UK citizens relative to EU citizens. Perceived compatibility positively correlated with EU identification, but not significantly with UK identification (see Tables 1–3). The first parallel mediation model included differences in group evaluations as criterion, perceived compatibility as predictor and UK identification and EU identification as parallel mediators. Results indicated that perceived group compatibility was associated with differences in group evaluations through its relationship with identification with EU citizens but not identification with

¹⁵ It is worth noting that for both measures of intergroup attitudes and at each time point the mean difference scores are negative, suggesting that overall participants did not show ingroup (i.e., UK) preference as we had expected. Consequently, we conducted additional exploratory analysis to test if the relations between variables were consistent for participants with different voting intentions. We found no substantial differences in the results for the model including differences in group evaluations when comparing leavers and remainers. Even though the model fit was significantly reduced when constraining the models to be equal in the data from Time 1 and Time 3 for the cross-sectional models with behavioural intention differences as the DV [$\chi^2(5) = 13.18, p = .022$ and $\chi^2(5) = 12.49, p = .029$; the comparison for Time 2 was not statistically significant], these were only differences in magnitude. The models predicting differences in behavioural intentions showed no reduction in fit when constraining the paths to be equal for Leavers and Remainders. Therefore, and because we did not a priori plan separate analysis, we decided to report the results using the full sample. The results of this analysis are available in the supplemental material.

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UK citizens. The 95% bias-corrected confidence interval indicated that the indirect effects through identification with EU citizens, controlling for identification with UK citizens, were significant at all three time points (Time 1: $b = -0.17$, $SE = 0.03$, 95% CI [-0.23 to -0.11]; Time 2: $b = -0.17$, $SE = 0.03$, 95% CI [-0.24 to -0.11]; Time 3: $b = -0.14$, $SE = 0.03$, 95% CI [-0.21 to -0.08]). Despite the consistent positive relationship of identification with UK citizens and differences in group evaluations, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant at any of the time points (Time 1: $b = -0.03$, $SE = 0.02$, 95% CI [-0.07 to 0.01]; Time 2: $b = -0.05$, $SE = 0.03$, 95% CI [-0.10 to 0.01]; Time 3: $b = -0.02$, $SE = 0.02$, 95% CI [-0.07 to 0.02]; see Figure 1 for all effects associated with this model).

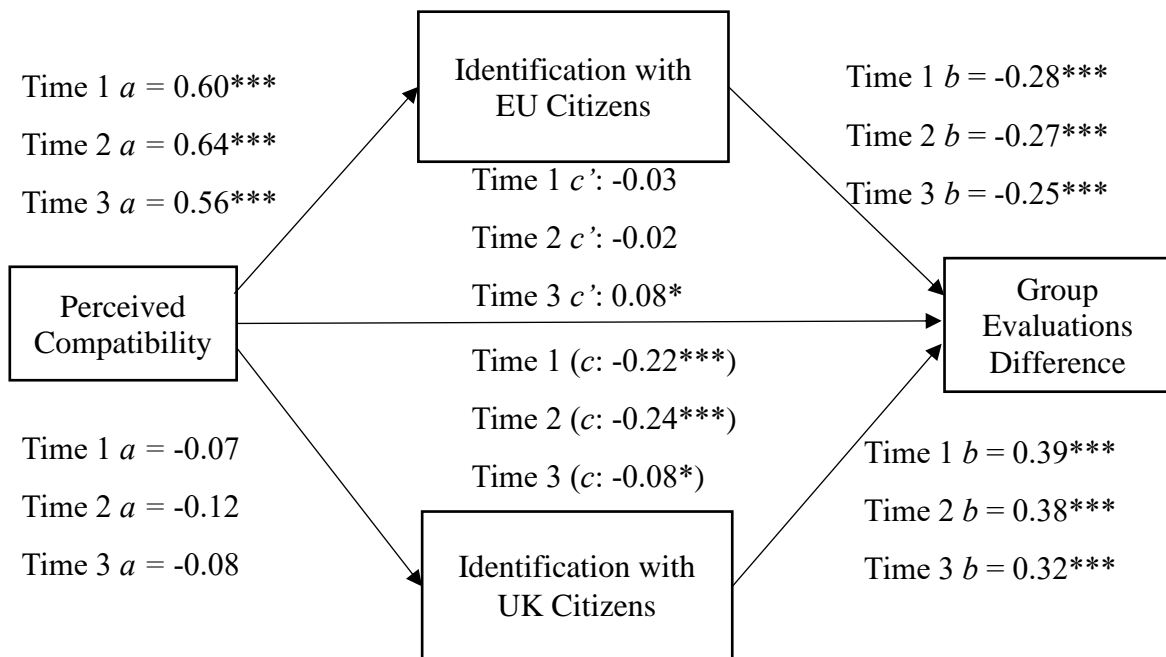


Figure 1: The parallel mediation models of the relationship between perceived group compatibility and difference in group evaluations via identification with EU citizens and identification with UK citizens; * $p < .05$, ** $p < .01$, *** $p < .001$.

Differences in Behavioural Intention

At each time point, the higher participants perceived group compatibility the less they showed preferences in their behavioural intentions towards UK citizens relative to EU citizens (see Tables 1–3). Results replicated the model on group evaluations: perceived compatibility was indirectly related to differences in behavioural intentions through its relationship with identification with EU citizens but not through its relationship with identification with UK citizens. Again, results were consistent across all three time points. The 95% bias-corrected confidence interval indicated that the indirect effects through identification with EU citizens, controlling for identification with UK citizens, were significant at all three time points (Time 1: $b = -0.31$, $SE = 0.04$, 95% CI [-0.38 to -0.24]; Time 2: $b = -0.34$, $SE = 0.04$, 95% CI [-0.42 to -0.26]; Time 3: $b = -0.32$, $SE = 0.04$, 95% CI [-0.41 to -0.24]). Despite the consistent positive relationship of identification with UK citizens and differences in behavioural intentions, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant at any of the time points (Time 1: $b = -0.04$, $SE = 0.03$, 95% CI [-0.10 to 0.02]; Time 2: $b = -0.07$, $SE = 0.04$, 95% CI [-0.14 to 0.01]; Time 3: $b = -0.04$, $SE = 0.04$, 95% CI [-0.11 to 0.03]; see Figure 2 for all effects associated with this model).

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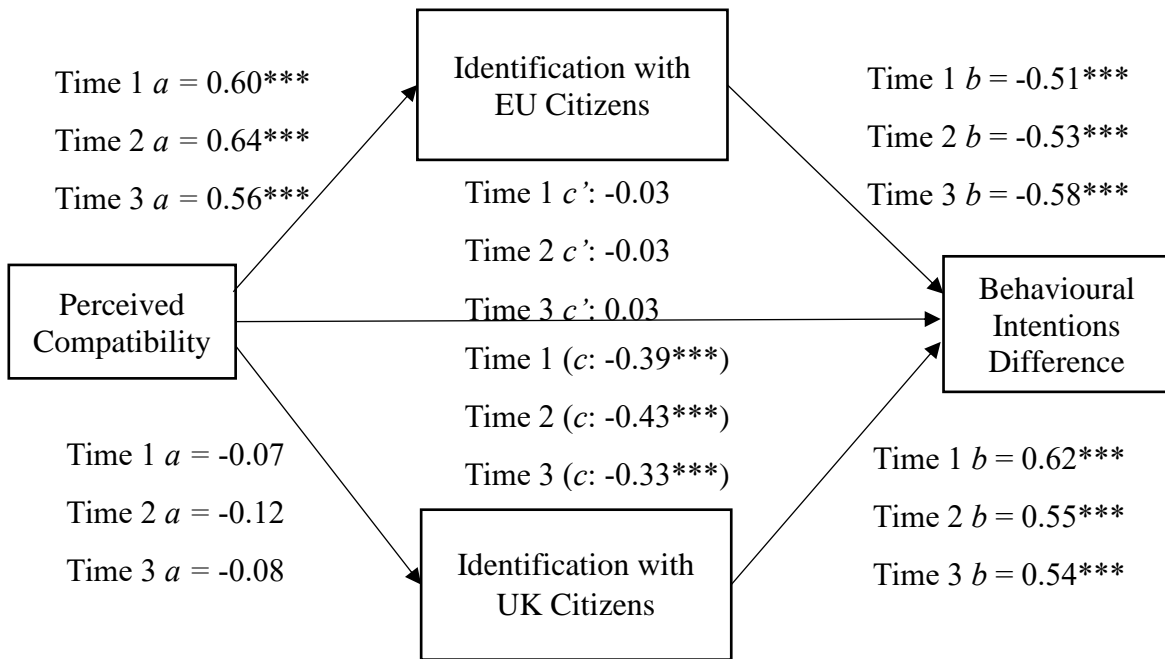


Figure 2: The parallel mediation models of the relationship between perceived group compatibility and differences in behavioural intentions via identification with EU citizens and identification with UK citizens; * $p < .05$, ** $p < .01$, *** $p < .001$.

Exploration over Time: Longitudinal Analysis

Next, we performed cross-lagged panel analyses (Kessler, 2014) to investigate relationships between perceived compatibility, UK and EU identification, and intergroup bias over time employing robust maximum-likelihood estimation in *R*, using the Lavaan package (Rosseel, 2012). Separate cross-lagged panel analyses were conducted for each of the measures of group differences¹⁶. To facilitate interpretation in each of the models, the paths from Time 1 to Time 2 were constrained to be equal with the corresponding paths from Time 2 to Time 3.

¹⁶ Similar to the cross-sectional analysis we compared Leavers and Remainers for the longitudinal analysis. There was no significant difference in model fit for Leavers or Remainers for the cross-lagged panel model with differences in group evaluations as the outcome variable [$\chi^2(4) = 0.80, p = .939$] or in the cross-lagged panel model with differences in behavioural intentions as the outcome variable [$\chi^2(4) = 0.82, p = .935$]. These results are available in the supplemental material.

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The cross-lagged panel model testing the relationship between perceived compatibility and difference in behavioural intentions, as well as the mediation of these relationships by both UK and EU identification, also showed good fit to the data, $\chi^2(28) = 72.55, p < .001$, CFI = .984, RMSEA = .063, SRMR = .048 (see Figure 4). Again, perceived compatibility did not predict difference in behavioural intentions at subsequent time points ($b = 0.00, p = .959$) or identification with EU citizens ($b = 0.03, p = .434$). In line with the previous results, perceived compatibility did not predict identification with UK citizens ($b = 0.02, p = .558$), but identification with UK citizens did predict difference in behavioural intentions at subsequent time points ($b = 0.19, p < .001$). The recursive relationship was also statistically significant, with difference in behavioural intentions predicting identification with UK citizens at subsequent time points ($b = 0.11, p = .046$). Finally, identification with EU citizens predicted a decrease in the difference in behavioural intentions at subsequent time points ($b = -0.14, p = .008$).

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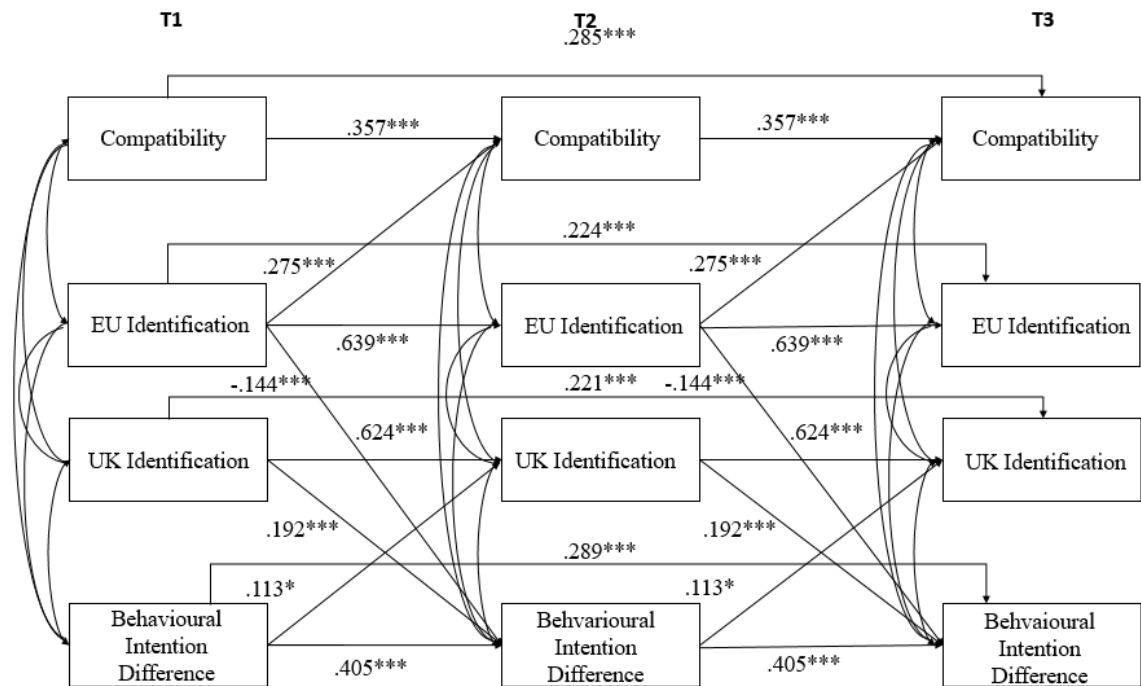


Figure 4. Full longitudinal bidirectional model with difference in behavioural intentions as the outcome variable. * $p < .05$, ** $p < .01$, *** $p < .001$. Straight lines in the figure indicate significant relationships; lines are omitted when relationships did not reach the $p < .05$ level.

Discussion

The present study tested a cognitive consistency approach to understanding group preferences after the loss of the superordinate EU category membership of UK citizens due to Brexit. The hypotheses testing cross-sectional analysis confirmed that more perceived group compatibility related to less preference for the subordinate UK ingroup over the superordinate EU outgroup thus, reduced ingroup favouritism. This held true for both group evaluations and behavioural intentions towards the groups, the latter reflecting how much people wanted to approach or avoid others. These findings were consistent across each time point. Interestingly, when behavioural intentions were assessed for two out of the three time points this relationship appeared to be even stronger for those who voted to leave the EU compared to those who voted to remain (see supplemental material). For both intergroup attitude measures, identification with the former superordinate category EU citizens explained this relationship.

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Despite these findings providing consistent support for the cognitive consistency mechanism driving judgments that are assessed at one point in time, they do not explain what variable is driving which effect. To explore relationships between variables over time, we also conducted longitudinal analyses. Perceived group compatibility did not predict either EU identification or intergroup attitudes over time. Instead, EU identification consistently predicted increased perceptions of group compatibility. Additionally, greater UK identification predicted greater UK favouritism in both, evaluative and behavioural intentions while EU identification predicted reduced UK favouritism in behavioural intentions only.

Thus, the longitudinal analysis highlighted the crucial role of continued identification with the superordinate category in perceiving the groups as compatible. Similarly, these results also point to the importance of superordinate category identification in reducing subordinate ingroup favouritism, at least in terms of willingness to engage with members of the superordinate category (Gaertner et al., 1993; Houlette et al., 2004; Levine et al., 2005). Notably, this was observed despite the formal withdrawal of the subordinate group from the superordinate category.

The present findings contribute to the limited literature on superordinate identity loss while providing some insight on perceptions of UK-EU compatibility, UK and EU identification and intergroup attitudes of UK citizens in the wake of Brexit. We tested hypotheses derived from a cognitive consistency based model on identity integration (Roth et al., 2018) combined with previous evidence that a superordinate category identity has positive outcomes for intergroup relations between subordinate groups (Gaertner et al., 1993; Houlette et al., 2004; Levine et al., 2005). We applied the reasoning to a case of superordinate identity loss in UK citizens due to Brexit. The present cross-sectional findings are in line with the hypothesis that perceived group

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compatibility goes along with reduced intergroup bias and that this is mediated by group identification and previous research indicating that emphasizing commonalities between groups can reduce intergroup bias (Crisp & Beck, 2005; Hewstone et al., 2002; Loughnane et al., 2021). The significant relationship between identification with EU citizens and reduced differences in group attitudes is in line with the common ingroup identity model (Gaertner et al., 1993), though an alternate explanation can be derived from the ingroup projection model (Mummendey & Wenzel, 1999). If participants think of compatibility as the extent to which their ingroup is prototypical of the superordinate group, the respective projection of traits of UK citizens to EU citizens may allow identification with EU citizens and positive attitudes towards them.

The longitudinal findings, however, are not in line with the hypothesised causal direction that perceived compatibility reduces intergroup bias. Instead, the findings suggest that greater perceived compatibility of the two groups may be a consequence of continued EU identification following the withdrawal of the UK from the EU.

The cognitive consistency based identity integration model (Roth et al., 2018) is informed by the balanced identity design of Greenwald and colleagues (2002) and merely suggests that social knowledge is represented in a cognitively consistent manner. The findings of the current study are in line with the prediction that individuals are motivated to maintain cognitive consistency in intergroup judgements. To achieve cognitively consistent judgements, perceived compatibility can drive identification with both groups and subsequent group attitudes but similarly, identification or group attitudes may drive perceived compatibility. Considering the multidirectional nature of cognitively consistent judgments, perceived compatibility may not necessarily predict a reduction in ingroup preference, rather there is a balanced relationship between perceived compatibility, group identification and attitudes towards both groups.

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An additional explanation for the lack of longitudinal effects of perceived compatibility on EU identification or group preferences could also be that a prerequisite of cognitive consistency as a motivator of judgements is that the knowledge structure that contains the relevant thoughts becomes momentarily accessible (Gawronski et al., 2016). At each of the time points it is easy for participants to identify whether the responses they give to the various items are cognitively consistent. However, between time points these knowledge structures do not remain activated and cognitive consistencies may not be easily recognised. As a result, the motivation to respond in a cognitively consistent manner over time is reduced.

Thus, while producing consistent results at a specific point in time, a cognitive consistency approach to understanding the development of perceived compatibility, group identification and intergroup attitudes over time may be too reductionist. The present social psychological mechanisms must be contextualized in the wake of the UK's referendum and the political and societal discourse. Therefore, societal and motivational factors may play a more substantial role in group identification and intergroup attitudes in this context.

Notably, longitudinal findings are in line with previous research indicating a positive relationship between ingroup identification and ingroup favouritism (Brewer, 1979; Hinkle & Brown, 1990) and the positive role of superordinate category identification in reducing subordinate ingroup favouritism in how much ingroup members want to interact with outgroup members (Gaertner et al., 1993; Houlette et al., 2004; Levine et al., 2005). Similarly, EU identification predicted perceived compatibility of the groups EU citizens and UK citizens at subsequent time points. These results support the idea that continued identification with a superordinate category following category loss, in this case continued identification with the group

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EU citizens following Brexit, can lead to a decrease in subsequent ingroup preference as well as an increase in the perceived compatibility of UK citizens and EU citizens.

While there has been plenty of previous research supporting the idea that gaining a superordinate category membership can reduce intergroup bias between the subcategories, the present study highlights the role of superordinate identification in a context where superordinate category membership is formally lost while people still maintain identification with it.

Limitations and Future Directions

We analysed our hypotheses cross-sectionally, but also replicated findings at three separate time points and explored the influences on intergroup attitudes longitudinally.

We collected data over a year during the transition period of Brexit, where the UK had officially left the EU but remained within both the EU customs union and single market, and again after the complete withdrawal. Although this allowed us to replicate the cross-sectional findings and to investigate the relationship between the variables longitudinally, there are at least two caveats when considering the timings of our data collection. The first is that we did not collect data prior to the revelation that the UK decided to leave the EU by popular vote. Of course, it would be of interest to examine whether this event influenced perceptions of compatibility of the two groups, identification with the groups and favouritism of UK over EU citizens. The revelation of the referendum result may have felt more like the loss of group membership to some than the official withdrawal. The second caveat refers to the factors that influenced the quantity, frequency, and timing of the waves of data collection. We decided upon three waves of data collection to allow investigation of any potential mediating relationships between the variables longitudinally. We also collected data at multiple time points with

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the aim of capturing the process of realizing the formal separation of the UK from the EU, so that the formal category loss became psychologically represented. Additionally, the timings of data collection were largely down to availability of funding to pay participants while also considering the political context at each time point (e.g., data collection was at times delayed due to the Covid-19 pandemic situation or prevalence of Brexit discussions in the media). Therefore, time scale decisions were largely based on methodological and practical influences rather than theoretical arguments which recent researchers have underscored as a problematic practise when testing the predictions of theoretical models in psychological research (Hopwood et al., 2021).

Our sample contained more individuals who voted to remain within the EU and would vote to remain in the EU should another referendum be held, than would be expected based on the results of the election and more recent polls. This may affect the generalisability of our results as well as explaining the fact that on average the participants held more positive attitudes towards EU citizens relative to UK citizens overall. As can be seen in the supplemental material, participants who indicated that they would vote to remain in the EU in a future referendum showed preference for EU citizens relative to UK citizens while participants who indicated that they would vote to leave showed preference for UK citizens relative to EU citizens. The results of the current study may have been more generalizable had our sample better reflected the public in terms of voting intentions. The main purpose of the current study was to investigate the relationship between variables rather than differences between subsamples of participants, however, it is interesting to note that the relationships between the variables remained largely consistent among Remainers and Leavers. The present research does not allow us to make conclusions as to why participants showed

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preference for EU citizens over UK citizens in general. This may be an interesting avenue for future research.

Another limitation of the current research is that the current study design does not consider motivational and social factors but rather takes a reductionist approach testing the applicability of a parsimonious model. This theoretical model focusses on joining social groups instead of losing a social identity (Roth et al., 2018). Losing an identity may not be just a mirror image of gaining a new social identity. When joining a new group, people may not have any prior motivational attachment to the group in the first place, but people may rely on perceptions of compatibility between their valued existing identities and thus perceived group compatibility (Amiot et al., 2007). However, losing an identity usually involves leaving behind certain privileges and previous experiences with the group, the loss of which can be devastating (Iyer et al., 2010). Identity loss may also go along with symbolic and realistic intergroup threat. Particularly for such a polarizing and politically charged membership loss as that resulting from Brexit, motivational factors seem indispensable.

Notably, the present results do not show a decline in perceived group compatibility nor in EU identification of UK citizens over time despite the formal withdrawal of the UK from the EU and thus, the formal superordinate category loss. This is surprising but may speak to the relevance of motivationally maintained group attachment despite the formal loss of the membership. Many potential motivations for group identification have been suggested previously (Vignoles et al., 2006). A substantial part of the participants may have been motivated by a sense of continuity and were unwilling to give up their EU identification. Alternatively, participants may have attributed great importance to remaining within the EU during the Brexit debates

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and satisfy a sense of meaning by continuing to identify strongly with the EU. Future research could investigate the motives for continued identification following the official withdrawal from the EU.

Similarly, the present data suggest that on average UK citizens showed EU favouritism, a preference for EU citizens relative to UK citizens despite higher UK identification than EU identification. Recent research on the association between strength of identification and ingroup favouritism suggests that group norms dictate this relationship. A positive association between identification and ingroup favouritism exists when favouring is the group norm but not when fairness or egalitarianism is the group norm (Çoksan & Cingöz-Ulu, 2022; Jetten et al., 1997). Future research could investigate injunctive norms, the behaviours that one is expected to follow in each social situation, in UK citizens post-Brexit.

Despite these limitations, the findings remain important and have the potential to inform theory on identity loss and policies that will play a role in maintaining intergroup harmony post-Brexit. They suggest that, regardless of the changes to trade and freedom of movement that have resulted from Brexit, continued identification with Europeans remains possible, and policies or interventions that aim to promote intergroup harmony post-Brexit may be best to focus on this European identity within UK citizens.

Conclusion

While the present study consistently demonstrated that people make cognitively consistent judgments about social groups, this structure of judgments was only prevalent at each point in time. It does not allow conclusions about the development of perceived group compatibility, super- or subordinate group identification or intergroup

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attitudes over time. Other societal and motivation factors may be better suited to explain the development of intergroup attitudes when political decisions imply a superordinate category loss.

The present results are specific to a real life and largescale example of a formal superordinate category loss and provide some indication for avenues to promote intergroup harmony. Increases in various forms of outgroup prejudice since the UK's vote to withdraw from the EU highlight the importance of understanding predictors of intergroup bias in the fallout of Brexit (Meleady et al., 2017; Swami et al., 2018; Zmigrod et al., 2018). Present results illustrate that EU identification predicts perceptions of group compatibility post-Brexit and that UK and EU identification predict intergroup attitudes. EU identification predicted reduced group differences in behavioural intentions at subsequent time points, but perceived group compatibility did not. Therefore, to improve intergroup harmony within Europe post-Brexit promoting a superordinate identity to which UK citizens and other EU citizens belong, rather than trying to increase perceived compatibility of these nations, maybe a fruitful avenue. Perceived group compatibility may follow once strong superordinate identification is reached. Even if superordinate identification may only have an effect on behavioural intentions in the present research, increased intentions to interact with each other and collaborate may in turn also affect group evaluations (Olson & Stone, 2005).

As the results of the political decisions surrounding Brexit become clearer, there may be further impact on intergroup relations between UK citizens and remaining EU citizens. Future research will benefit from the collection of data as the situation evolves and as the results of these decisions become apparent.

CHAPTER FOUR

A Cognitive Balance Approach to Understanding Intergroup Attitudes in Post-Brexit

Northern Ireland

Abstract

Cognitive balance theory posits that a drive for cognitively consistent thoughts modulates interpersonal relations. We extended cognitive balance theory to intergroup relations and tested it in a real-life setting where intergroup relations are under strain: Northern Ireland in the wake of the UK's withdrawal from the EU. We predicted that when the groups of Irish people and British people in Northern Ireland are perceived as more compatible, intergroup bias would be lower than when groups are perceived as less compatible. We collected data of residents of Northern Ireland before the UK's official withdrawal from the EU ($N = 604$) and after ($N = 350$). As hypothesised, attitudes towards British people positively related to attitudes towards Irish people when participants perceived the groups as more compatible. We found the opposite relationship at low levels of perceived compatibility. Exploratory cross-lagged panel analyses did not show that these effects occurred longitudinally, suggesting that cognitive balance does not drive judgments over time possibly because people are less likely to notice inconsistent responses across different time points. The present research demonstrates that intergroup attitudes assessed at a certain point in time follow cognitive balance principles.

A Cognitive Balance Approach to Understanding Intergroup Attitudes in Post-Brexit Northern Ireland

The signing of the 1998 Belfast (Good Friday) agreement was a milestone that initiated a period of relative intergroup harmony in Northern Ireland (NI). Though tension remains post-agreement, political instability, conflict, and violence in the region are far less than in the previous 30 years (for an overview see Muldoon, 2004). This intergroup conflict took place primarily between Irish nationals and British nationals, both residing in NI. The Irish national identity often goes along with belonging to the Catholic community and having a Nationalist political orientation. The British national identity instead is tied to the Protestant community and having a Unionist political orientation. The political goals between these clusters of social categories are conflicting: Whereas Nationalists usually want a united Ireland—thus a reunification with the Republic of Ireland (RoI)—Unionists want close association with the United Kingdom (UK). It is worth noting that this dichotomous approach is a simplistic view of the conflict but covers some relevant group relations.

Following this period of sustained peace, Brexit now poses a societal challenge that has the potential to reignite intergroup conflict. Common membership of the UK and the RoI in the European Union (EU) was thought to play a role in reducing intergroup conflict among subgroups living in NI (Lowe & Muldoon, 2014). However, the Brexit referendum outcome highlights the ongoing divide between British and Irish nationality identifying people as it mirrored the referendum vote. While the majority of Irish people voted remain, the majority of British people voted leave (Gormley-Heenan & Aughey, 2017). These voting outcomes highlighted again that Irish and British

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people in NI have conflicting goals and may thus, be perceived as incompatible with each other.

We investigate a general mechanism that may contribute to intergroup bias. Intergroup bias—the preference for one social group over another (Hewstone et al., 2002)—along with social identification—how strongly people feel attached to social groups (Leach et al., 2008)—are considered drivers for intergroup conflict (Hewstone & Greenland, 2000). Several theories have addressed intergroup attitudes and identification with multiple groups (Gaertner et al., 1993; Mummendey & Wenzel, 1999; Turner et al., 1987). While these theories focus on superordinate and subordinate levels of categorization, we test a theoretical framework which focuses on groups at similar levels of inclusiveness. The present research adds to this literature by investigating people’s tendency for cognitively balanced judgements of social groups. Specifically, we investigate whether perceptions of compatibility of British and Irish people in NI are associated with a difference in strength of identification with and difference in attitudes towards the two groups. While we aim to test predictions from a cognitive balance approach on social identification and intergroup attitudes, we do so in the applied context of NI. We believe this is a particularly relevant context because of the political decision of the UK to leave the EU, which highlights incompatibility in the goals of Irish and British people in the region. This is exacerbated by the discussion about a custom border to be located on the island, between NI and the RoI (which goes against the goal of many Irish nationals who strive for reunification with the RoI) or in the sea, between NI and the UK (which goes against the goals of many British nationals who strive for closer ties to the UK).

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Because the history of violent intergroup conflict and the conflicting goals between Irish and British nationals, we believe that both social groups are self-relevant for residents of NI. Gawronski and colleagues (2016) suggest that self-relevance may determine the subjective significance of deviating from cognitive balance. Therefore, tolerating cognitive inconsistency in multiple group attitudes and their perceived (in)compatibility should be particularly difficult if people care about these groups. This is mostly the case if at least one of these social groups is an ingroup that people strongly identify with. Therefore, residents of NI will be highly motivated to avoid cognitive dissonance in their judgements of the groups.

A Cognitive Balance Approach to Intergroup Attitudes

Research in different areas of psychology indicates that people strive for cognitions that are consistent with each other and avoid conflicting cognitions (for overviews see, Gawronski, 2012; Gawronski et al., 2016). Festinger (1957) suggested that cognitions that contradict each other, for example, the judgments *John is nice* and *John is mean* would create dissonance in the beholder. Dissonance is defined as an aversive feeling and Festinger suggested that people are motivated to avoid it.

In cognitive balance theory, Heider (1958) suggested that interpersonal relations are also driven by cognitive consistency. Heider hypothesised that the triad of interpersonal relations is balanced if it consists of only liking relations or an even number of disliking relations. For example, the triad *John likes James, James likes Jane, and John likes Jane* is balanced whereas the triad *John likes James, James dislikes Jane, and John likes Jane* is imbalanced. Heider suggested that people would feel dissonance when facing an imbalanced triad and strive to solve it by changing any of the (dis)likes (for empirical evidence on the preference of balanced triads see Gawronski et al., 2005).

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According to Festinger (1957), the degree of dissonance felt depends on the subjective importance of the relationships involved. As mentioned above, Gawronski and colleagues (2016) suggested that self-relevance would affect how much the inconsistency would matter for the individual. To illustrate this using the example above, John may not feel much dissonance caused by James disliking Jane while he likes her if James is a loose acquaintance of John. However, if James is John's brother that he cares about substantially while similarly caring substantially about Jane, the resulting dissonance would be stronger urging the need in John to change any of these cognitions.

Greenwald and colleagues (2002) applied this logic to cognitive representations of the self and ingroups and ingroup favouritism. Ingroup favouritism is a positive attitude towards the ingroup relative to outgroups. Their balanced identity theory states that people evaluate ingroups more positively than outgroups because ingroups are associated with the self and the self is usually evaluated positively. To avoid imbalance, if people identify with a group and show positive self-evaluations, they also evaluate the ingroups positively (Cvencek et al., 2021).

Roth and colleagues (2018) have extended this logic to identification with multiple groups and intergroup attitudes. Based on a cognitive balance approach, in their theorizing they introduce the concept of (in)compatibility between social groups. They define group compatibility as a perceived overlap between two social groups that can be based on shared characteristics, norms, values, and goals between the groups and incompatibility between the social groups as perceived opposition in the characteristics, norms, values, and goals between the groups. To achieve cognitive balance in cognitions about these groups, people can only identify strongly with both groups when

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these groups are compatible (i.e., balanced triad: *I identify with British, British are compatible with Irish, I identify with Irish*). If both groups are incompatible and people identify with one group, strongly identifying with the other group also would imply imbalance. Building on the balanced identity approach (Greenwald et al., 2002b) and considering that most people have positive self-esteem (Bosson et al., 2000; Yamaguchi et al., 2007) implying that they also show favouritism for the group that they identify strongly with, Roth et al. (2018) suggest the same mechanism for intergroup attitudes. Take the following judgements:

1. "I like British people."
2. "I dislike Irish people."
3. "British people and Irish people are similar in terms of their values, norms and goals".

The third judgement, that British and Irish people are compatible, is relevant to attitudes towards the two groups. However, the cognitions that one group is positively evaluated, the other group is negatively evaluated, and the two groups are compatible with one another are inconsistent. One way to resolve this cognitive inconsistency would be to evaluate the groups similarly i.e., if British people are evaluated positively, Irish people should also be evaluated positively and vice versa while maintaining the cognition that the groups are compatible. Alternatively, one could change their perception of the compatibility of the two groups i.e., considering the values, norms, and goals of British and Irish people to be opposing while maintaining a positive evaluation of British people and negative evaluation of Irish people would also resolve the cognitive inconsistency.

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Based on the application of the cognitive balance logic on multiple group identification and intergroup attitudes, we predict that perceived compatibility between British and Irish people in NI will moderate the relationship between identification with Irish people and British people and attitudes towards both groups.

Preliminary Evidence

Previous research has investigated the role of perceived compatibility for adapting a new social identity. Iyer and colleagues (2009) found that new students who perceived their previous identity as compatible with their new student identity more strongly identified with students. Matschke and Fehr (2017) found that perceived incompatibility of individual's existing cultural identity and host identity can predict disidentification with the receiving society. Loughnane and colleagues (2021) manipulated the perceived compatibility of students and employees and demonstrated that high group compatibility increased mutual identification with both groups. Finally, Benet-Martinez and colleagues define identity integration of multiple cultural identities as the compatibility of the identities versus the oppositionality of the identities (Benet-Martínez, 2012b; Benet-Martínez & Haritatos, 2005b).

Previous empirical evidence additionally shows that emphasizing commonalities—and thus increasing the perceived compatibility—between groups can lead to reduced intergroup bias. For example, Sherif and Sherif (1953) found that superordinate goals that are compelling to distinct groups can reduce intergroup conflict. Crisp and Beck (2005) have demonstrated that more (compared to less) overlap in characteristics of ingroup and outgroup members can reduce bias. In addition to finding that increased compatibility facilitates mutual identification, Loughnane and

colleagues (2021) also have shown that it increased similar attitudes towards both groups.

The Current Study

The main goal of this study is to test predictions derived from a cognitive balance approach (Roth et al., 2018) that we expanded to ingroup and outgroup attitudes in a context of historical intergroup conflict. We considered this approach particularly relevant for understanding intergroup attitudes between British and Irish people in NI because of the recently increased salience of conflicting goals of these social groups. Given the historical and political background, Northern Irish residents may be inclined to perceive British and Irish nationals as incompatible because of diverging goals relating to Irish unification and these conflicting goals being highlighted by the referendum outcome, by Brexit, and by the decisions on a custom border.

Building on Gawronski and colleagues' (2016) suggestion that self-relevance may determine the subjective significance of cognitive consistency, and thus affecting whether dissonance is tolerated or resolved, we expected that the triad of judgments about British, Irish and their compatibility are self-relevant for most people in NI. In this context, we believe that both social groups are self-relevant given that most people in NI have an Irish or British national identity or both. Making judgments about ingroups should, by definition, be self-relevant since ingroups form part of the self-concept. Similarly, the respective outgroup provides a relevant comparison in this context and should similarly be self-relevant. Therefore, inconsistency in judgments should arouse substantial aversive feeling of dissonance. Accordingly, we expect that residents of NI hold cognitions about British nationals and Irish nationals that are balanced.

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An essential precondition for people striving for cognitive consistency in their judgments may be that they identify inconsistencies. Gawronski and colleagues (2016) have suggested that for inconsistency to arise all thoughts of the cognitive triad need to be simultaneously accessible. Similarly, researchers have suggested that in order to find evidence for the cognitive triad of self-esteem, identity, and ingroup favouritism, all three associations, the association between the self and attributes (i.e., self-esteem), the self and the group (i.e., identity), and the group and attributes (i.e., group attitude), need to be simultaneously assessed (Cvencek et al., 2012). One crucial difference between both approaches is that Cvencek and colleagues suggest that cognitive balance is mirrored in how the associative system organizes (and thus best captured with indirect measures) whereas Gawronski and colleagues make a strong point that cognitive dissonance is a process that needs the assessment of whether people consider the relationships between the concepts involved as true or false and thus, is best captured in judgments that people endorse. In this paper, we do not enter this debate (also for pragmatic reasons because no indirect measure for group compatibility has been developed or validated so far). However, we explore the precondition that inconsistency needs to be salient and thus, recognised by the beholder. If this is the case then, we should find stronger indication for balanced triads in British and Irish attitudes and group compatibility when measured at the same time point. We would expect to find less evidence for balanced triads when any two of the combinations between two judgments is used to predict the third one over time as people more easily recognise imbalance in their judgments when all judgments are made at a single time point.

For this research, we collected data of NI residents at two time points. We primarily aimed to replicate the findings of Time 1 at Time 2, but also explored the

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relationships of the variables longitudinally. We suspected that intergroup bias may increase over time because of the UK's official withdrawal from the EU, but that based on our general theoretical approach, judgements would still follow cognitive consistency principles. Whether the relationships between variables followed cognitive consistency principles overtime was a secondary, though we believe worthwhile, investigation.

Our main preregistered hypothesis was to test whether judgments of group compatibility and identification with British and Irish as well as attitudes towards British and Irish mirror a balanced triad. A balanced triad would show up in a moderation where divergence in identification or intergroup attitudes should increase with decreased group compatibility.

Methods

We preregistered the hypotheses and methods ahead of the Time 2 data collection on the Open Science Framework (https://osf.io/tj59c/?view_only=8ed5d2b7a7524f63b78b07168b4abce1). Materials, data, and code are also available (https://osf.io/uvr6k/?view_only=6cf8e77a65fe4ba58d36a0d2e62044ec).

Study Design and Participants

We assessed perceived compatibility of Irish and British people, social identification and general evaluations of both, and behavioural intentions towards each of the groups along with demographic variables. We collected these data of residents of NI at two time points—in October and November 2020, prior to the UK's official withdrawal from the EU, and one year later, in October and November 2021 after the

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withdrawal. We received ethical approval from the first author's university research ethics committee (ref: 2020_10_06_EHS).

We recruited participants on Prolific.co, a crowd-sourcing platform with a reputation for providing high quality data (Peer et al., 2017). Participants were pre-screened by Prolific.co so that only residents of NI could complete the questionnaire. We aimed to have over 200 participants at each time point (Sideridis et al., 2014b). The total sample at Time 1 included 665 participants. Of those participants who took part at Time 1, 611 participants who provided their participant ID were invited to take part at Time 2. Of the participants at Time 1, 604 were included in the data analysis for Time 1 because they completed the entire questionnaire and met the preregistered inclusion criteria of passing the attention check (64.2% female; mean age 33.99). At Time 2, 350 participants were included into data analysis because they completed the entire questionnaire and passed the attention check (67.6% female; mean age 37.21). Additional information on the national, religious, and political identities of the participants at each time point can be found in Table 1.

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Table 1. *Breakdown of participants by religion, nationality, and political identity.*

	Time 1	Time 2
Religion		
Protestant	229 (37.9%)	141 (40.1%)
Catholic	196 (32.5%)	113 (32.1%)
Not religious	149 (24.7%)	100 (28.4%)
Other	51 (8.4%)	17 (4.8%)
Nationality		
EU citizen	99 (16.4%)	56 (15.9%)
Northern Irish	306 (50.7%)	179 (50.9%)
British	201 (33.3%)	123 (34.9%)
Irish	199 (32.9%)	127 (36.1%)
Other	24 (4.0%)	14 (4.0%)
British and Irish	26 (4.3%)	16 (4.6%)
Political Identity		
Unionist	199 (32.9%)	119 (33.8%)
Nationalist	166 (27.5%)	103 (29.3%)
Loyalist	54 (8.9%)	26 (7.4%)
Republican	73 (12.1%)	37 (10.5%)
Other	173 (28.6%)	101 (28.7%)

Notes. For the above self-categorisations, participants could indicate as many identities that applied to them.

Measures

We assessed answers to all items on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*).

Group Compatibility. We assessed group compatibility using three items. Two items asked directly about group compatibility [“The groups Irish and British are compatible (there is harmony between the groups in terms of norms, values and rules)”] and group incompatibility [“The groups Irish and British are incompatible (there is conflict between the groups in terms of norms, values and rules)”]. The third item was a graphical representation asking about the overlap between the groups (Schubert & Otten, 2002). It consists of seven pictures, on each of which two circles of the same size that refer to “British people” and “Irish people” respectively can be seen at various

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distances. While the circles are far apart in the first image, they overlap almost completely in the seventh image. Items were presented in random order. Negatively polarized items were reverse scored and mean scores were calculated (Time 1 $\alpha = .84$; Time 2 $\alpha = .87$). Higher scores indicate higher perceived compatibility.

Group Identification. All participants filled in five items to assess identification with both British people and Irish people. Items were adapted from Leach and colleagues (2008) to capture the breadth of the construct (e.g., “I feel committed to British/Irish people”). These items were presented in random order and the target groups were also presented in random order. Higher mean scores indicate higher identification with British people (Time 1 $\alpha = .86$; Time 2 $\alpha = .87$) and Irish people (Time 1 $\alpha = .84$; Time 2 $\alpha = .87$) respectively.

Group Evaluations. As one component of group attitudes, we assessed group evaluations using trait ratings (Turner et al., 2012). Trait ratings included three positive (good, pleasant, warm) and three negative (bad, unpleasant, cold) adjectives that were rated for both British people and Irish people separately. Items were presented in random order for each target group and target groups were also presented in random order. Negative trait ratings were reverse scored. Higher mean scores indicate more positive evaluations of British people (Time 1 $\alpha = .85$; Time 2 $\alpha = .88$) and Irish people (Time 1 $\alpha = .85$; Time 2 $\alpha = .89$) respectively.

Behavioural Intentions towards the Groups. We additionally assessed group attitudes based on behavioural intentions with six items (see Turner et al., 2012; Wildschut et al., 2014). Participants were asked to rate their reactions towards British people and towards Irish people separately (e.g., “I want to talk to them”). Items were

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presented in random order and the order of target groups was randomised. Higher mean scores indicate more positive behavioural intentions towards British people (Time 1 $\alpha = .91$; Time 2 $\alpha = .92$) and Irish people (Time 1 $\alpha = .90$; Time 2 $\alpha = .90$) respectively. .

Procedure

Participants were informed that the aim of the current research was to understand the effects of Brexit in NI. Participants read a research privacy notice and gave consent before progressing to the questionnaire. Participants first completed demographic information on their identities (see Table 1). Next, participants answered identification items for each of the national groups, British and Irish. The attention check was also included in this section (“It is important to read questions carefully, please select strongly agree”). Participants then completed trait ratings and afterwards behavioural intentions towards British and Irish before being asked to rate the perceived compatibility for both groups. These scales were included in a larger set of scales that are not of specific interest for the present study (see OSF link for all scales). Finally, participants were debriefed and thanked for their participation. Completion of the questionnaire at each time point took on average 13 minutes. Participants were paid £1.25 at Time 1 and £2 at Time 2.

Results

The means, standard deviations, and correlations between the variables at Time 1 and Time 2 are available in Tables 2 and 3 respectively.

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Table 2. *Correlations, means, and standard deviations at Time 1*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Group Compatibility	3.23	1.33		.324***	.051	.329***	.058	.319***	.085*
2. British Identification	4.32	1.30			.030	.569***	-.025	.601***	-.046
3. Irish Identification	5.11	1.08				-.051	.539***	-.044	.591***
4. British TR	4.44	0.95					.154***	.672***	.052
5. Irish TR	5.34	0.82						.086*	.660***
6. British BI	4.77	1.27							.235***
7. Irish BI	5.51	1.06							

TR = Trait Ratings, BI = Behavioural Intentions * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3. *Correlations, means and standard deviations at Time 2*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Group Compatibility	3.28	1.37		.212***	.147**	.268***	.108*	.281***	.169**
2. British Identification	4.29	1.30			.086	.615***	-.026	.656***	.006
3. Irish Identification	5.02	1.14				.050	.508***	.066	.638***
4. British TR	4.42	0.97					.155**	.712***	.126*
5. Irish TR	5.33	0.87						.061	.600***
6. British BI	4.69	1.29							.244***
7. Irish BI	5.44	1.06							

TR = Trait Ratings, BI = Behavioural Intentions * $p < .05$, ** $p < .01$, *** $p < .001$.

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We specifically predicted that perceived compatibility of British and Irish people will moderate the relationship between identification with British people and identification with Irish people. Similarly, we hypothesised that perceived compatibility will also moderate the relationship between attitudes towards British people and attitudes towards Irish people. When compatibility is higher, participants will identify similarly strongly with British people and Irish people and will hold similar attitudes towards the two groups. When participants perceive the groups as less compatible this relationship will be reduced or even reversed.

Cognitive Balance in Group Identification

We examined the moderation of the relationship between British identification and Irish identification by group compatibility using PROCESS linear regression model 1 for SPSS (Hayes, 2017). The hypothesised interaction of British identification \times perceived compatibility was statistically significant at both time points [Time 1: $b = 0.19$, $SE = .02$, $t(600) = 8.23$, $p < .001$; Time 2: $b = 0.11$, $SE = .03$, $t(346) = 3.43$, $p < .001$].

We further used the Johnson-Neyman technique to probe the interaction effects and identify the ranges of values of the moderator for which the interaction effect is significant as well as the direction of the significant effects. At Time 1, results showed a significant negative relationship between British identification and Irish identification for perceived compatibility scores of 2.26 and below; there was no significant relationship for scores ranging from 2.51 to 3.25, and there was a significant positive relationship for scores of 3.53 and greater (see Figure 1A). At Time 2, a significant negative relationship between British identification and Irish identification only occurred at the lowest possible level of perceived compatibility of the two groups

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(1.00); there was no significant relationship for scores ranging from 1.20 to 3.45, and there was a significant positive relationship for scores of 3.53 and greater (see Figure 1B).

In line with the hypothesis, Irish identification, British identification, and perceived compatibility of the groups mirror balanced triads. When participants perceived the groups as more compatible, they identified similarly strongly with both groups and at the lowest levels of perceived compatibility high identification with one group was associated with low identification with the other group.

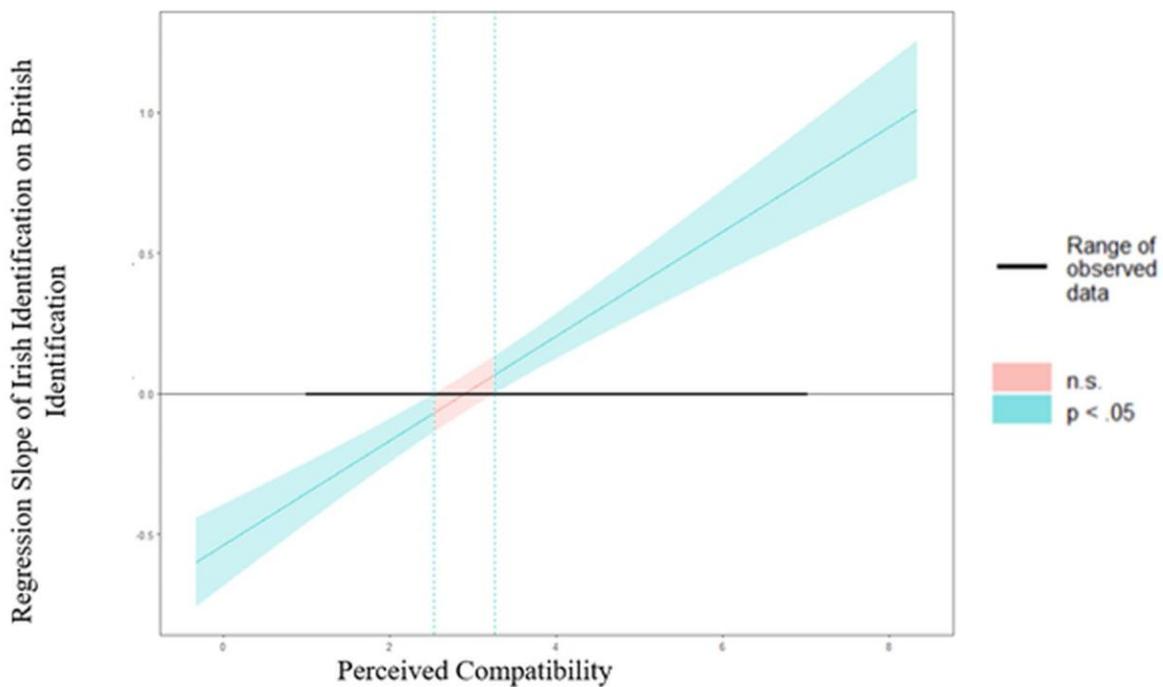


Figure 1A. The moderating effect of perceived group compatibility on the relationship between British identification and Irish identification Time 1: at higher levels of perceived compatibility there is a significant positive relationship between British identification and Irish identification and at lower levels of perceived compatibility there is a significant negative relationship.

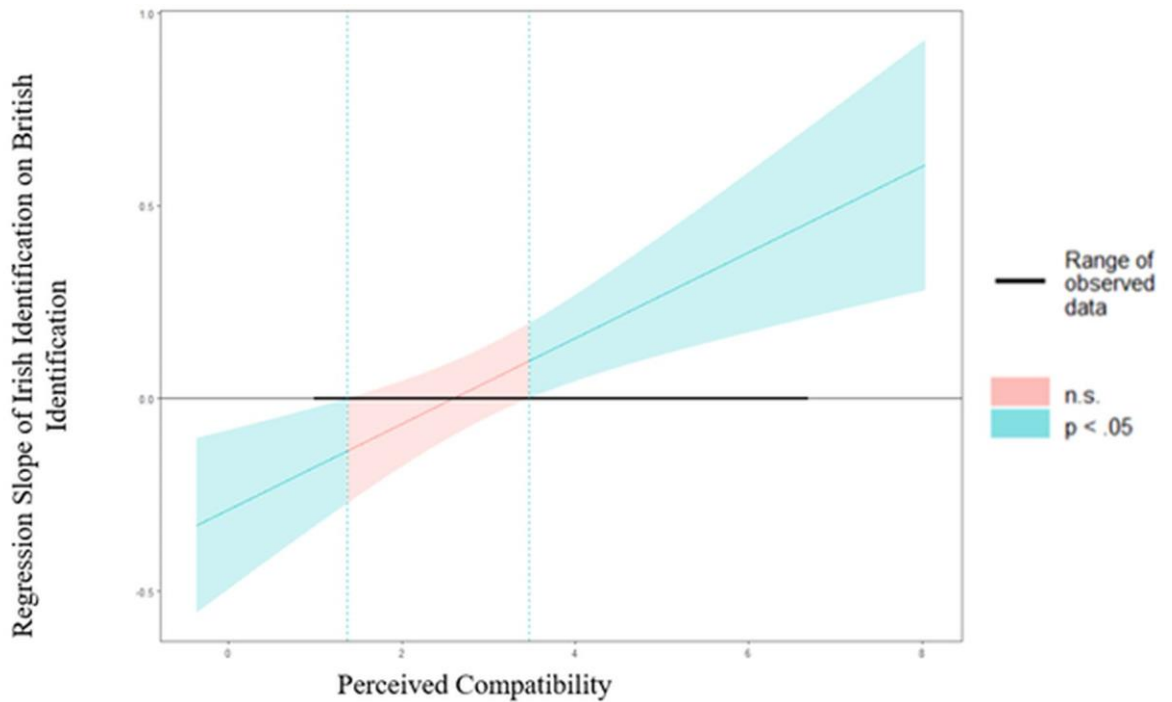


Figure 1B. The moderating effect of perceived group compatibility on the relationship between British identification and Irish identification Time 2: at higher levels of perceived compatibility there is a significant positive relationship between British identification and Irish identification and at lower levels of perceived compatibility there is a significant negative relationship.

Cognitive Balance in Group Evaluations

The same linear regression analysis for group evaluations replicated the hypothesised interaction of British trait ratings \times perceived compatibility at both time points [Time 1: $b = 0.19$, $SE = .02$, $t(600) = 8.48$, $p < .001$; Time 2: $b = 0.17$, $SE = .03$, $t(346) = 5.77$, $p < .001$]. Again, we used the Johnson-Neyman technique to further probe the interaction effects.

At Time 1, results show that there is a significant negative relationship between British trait ratings and Irish trait ratings for perceived compatibility scores of 1.63 and below, there is no significant relationship for scores ranging from 1.86 to 2.67, and there is a significant positive relationship for scores of 2.89 and greater (see Figure 2A).

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At Time 2, a significant negative relationship between British trait ratings and Irish trait ratings only occurs at the lowest possible level of perceived compatibility of the two groups 1.32 and below, there is no significant relationship for scores ranging from 1.53 to 2.80, and there is a significant positive relationship for scores of 2.89 and greater (see Figure 2B).

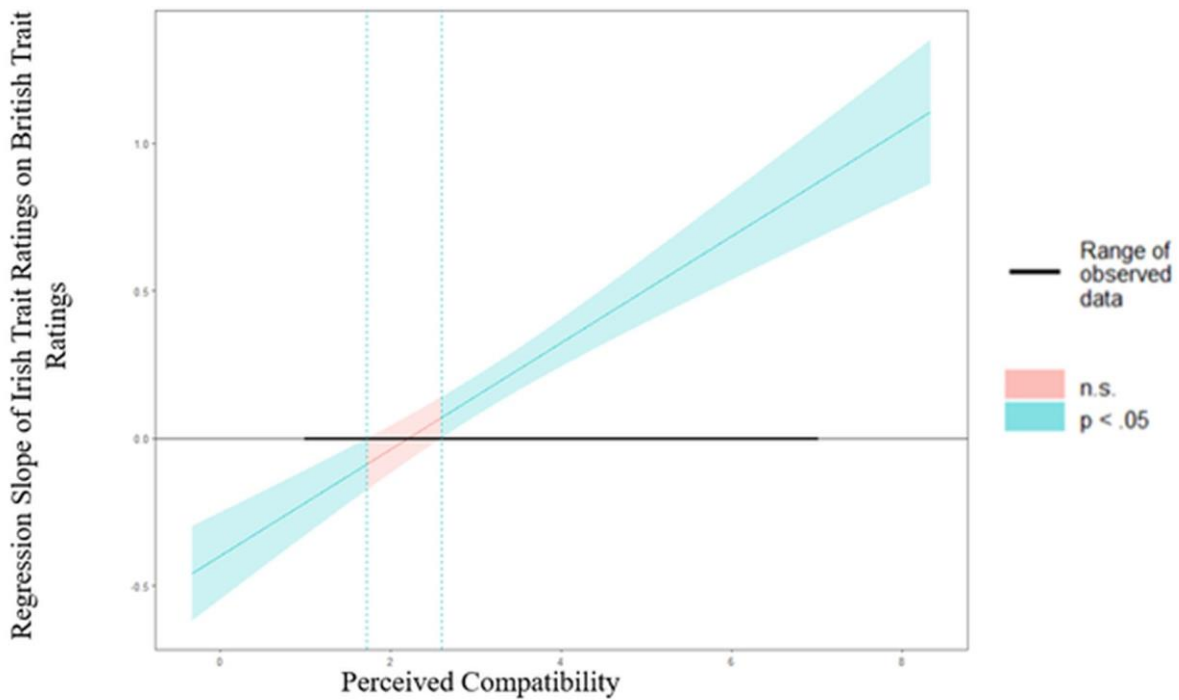


Figure 2A. The moderating effect of perceived group compatibility on the relationship between British trait ratings and Irish trait ratings Time 1: at higher levels of perceived compatibility there is a significant positive relationship between British trait ratings and Irish trait ratings and at lower levels of perceived compatibility there is a significant negative relationship.

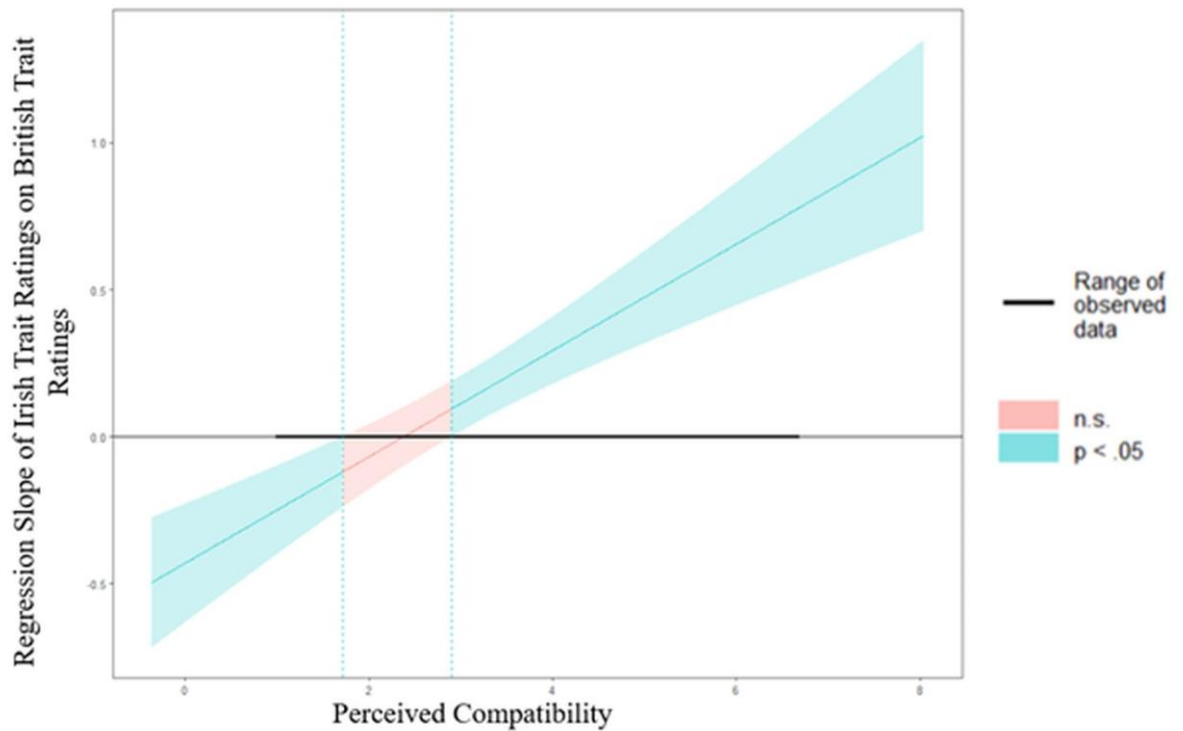


Figure 2B. The moderating effect of perceived group compatibility on the relationship between British trait ratings and Irish trait ratings Time 2: at higher levels of perceived compatibility there is a significant positive relationship between British trait ratings and Irish trait ratings and at lower levels of perceived compatibility there is a significant negative relationship.

Cognitive Balance in Behavioural Intentions

We additionally investigated whether perceived compatibility of the two groups moderated the relationship between behavioural intentions towards both groups. The interaction effect British behavioural intentions \times compatibility was significant at both time points [Time 1: $b = 0.20$, $SE = .02$, $t(600) = 9.00$, $p < .001$; Time 2: $b = 0.20$, $SE = .03$, $t(346) = 7.10$, $p < .001$], indicating that the perceived compatibility moderates the relationship between behavioural intentions towards both groups.

The Johnson-Neyman technique showed that at Time 1, there was a significant negative relationship between British behavioural intentions and Irish behavioural

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intentions for perceived compatibility scores of 1.32 and below, no significant relationship for scores ranging from 1.46 to 2.25, and there was a significant positive relationship for scores of 2.26 and greater (see Figure 3A). At Time 2, there was a significant negative relationship between British behavioural intentions and Irish behavioural intentions for perceived compatibility scores of 1.32 and below, no significant relationship for scores ranging from 1.48 to 2.49, and there was a significant positive relationship for scores of 2.58 and greater (see Figure 3B).

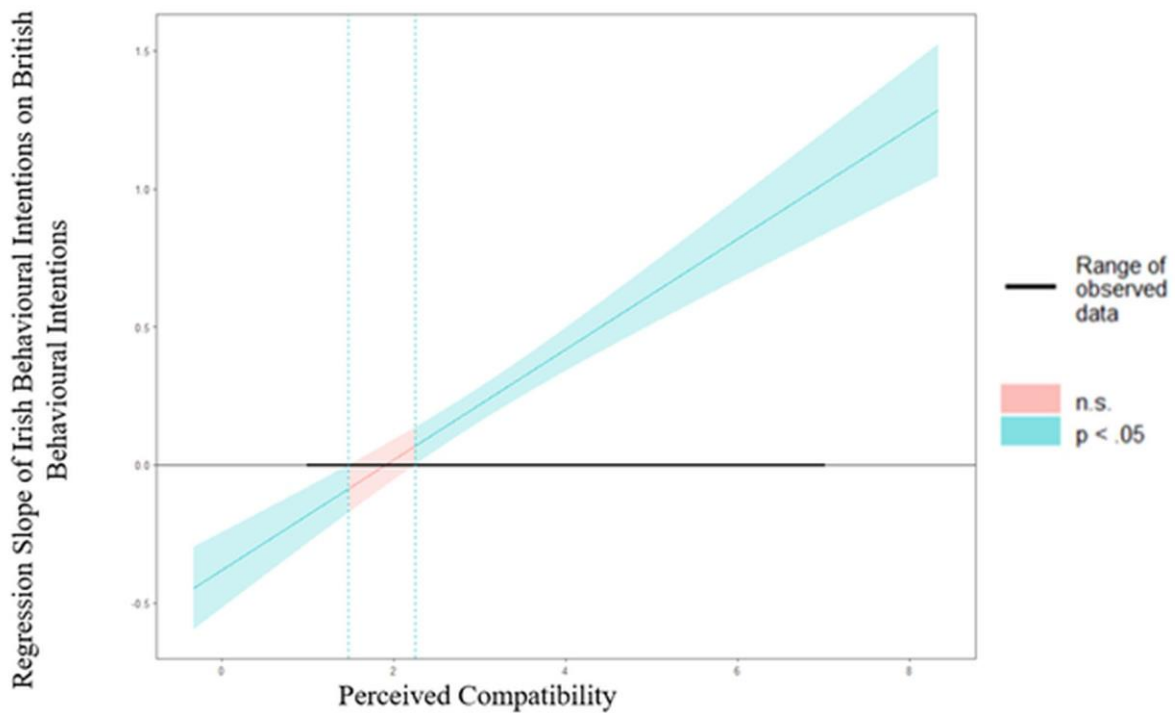


Figure 3A. The moderating effect of perceived group compatibility on the relationship between British behavioural intentions and Irish behavioural intentions Time 1: at higher levels of perceived compatibility there is a significant positive relationship between British behavioural intentions and Irish behavioural intentions and at lower levels of perceived compatibility there is a significant negative relationship.

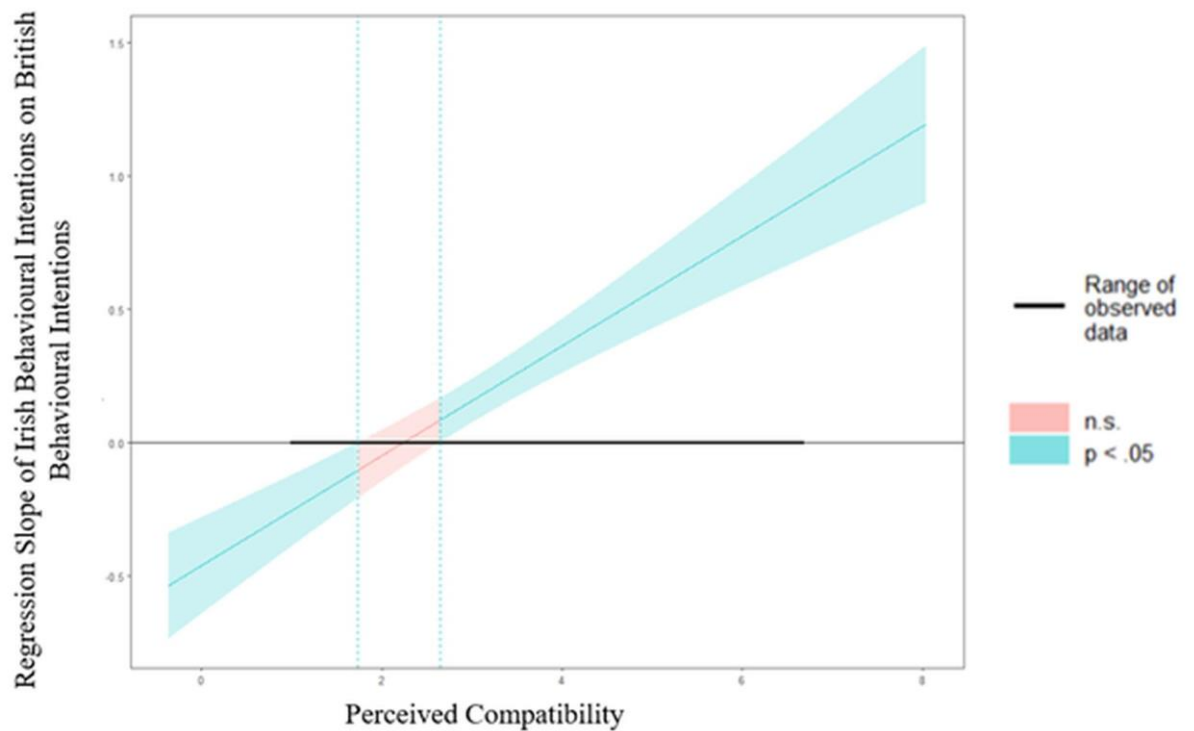


Figure 3B. The moderating effect of perceived group compatibility on the relationship between British behavioural intentions and Irish behavioural intentions Time 2: at higher levels of perceived compatibility there is a significant positive relationship between British behavioural intentions and Irish behavioural intentions and at lower levels of perceived compatibility there is a significant negative relationship.

Longitudinal Analysis

Following the cross-sectional analyses, we conducted longitudinal analyses utilising cross-lagged panel models to investigate the relationships between variables over time. The primary focus of this analysis was to explore whether people show cognitively balanced judgements over time. Thus, we investigated whether the interaction between perceived compatibility and British identification at Time 1 predicted Irish identification at Time 2 and whether the interaction between perceived compatibility and attitudes towards British at Time 1 predicted attitudes towards Irish at Time 2. For these analyses we employed robust maximum-likelihood estimation in *R*,

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using the Lavaan package (Rosseel, 2012). We conducted three separate cross-lagged panel models, one each investigating group identification, group evaluations and behavioural intentions towards the groups. In each of the cross-lagged panel models, predictor variables were mean centred¹⁸ and all models were saturated.

Neither the interaction between Irish identification and perceived compatibility at Time 1 predicted British identification at Time 2 ($b = -0.02, p = .480$) nor did the interaction between British identification and perceived compatibility at Time 1 predicted Irish identification at Time 2 ($b = 0.02, p = .460$). See Table 4 for all regression coefficients associated with this model.

¹⁸ At both time points, a small number of participants failed to provide participant IDs. To account for this, those participants who did not provide an ID at Time 1 were assigned random IDs and were included in the analysis. Since participants who did not provide an ID at Time 2 could not then be linked to responses at Time 1 and could not be treated as independent entries they were removed from the longitudinal analysis.

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Table 4. *Regression for identification and group compatibility at Time 1 and Time 2.*

	<i>B</i>	β	<i>SE</i>	<i>z</i>	<i>p</i>
Irish Identification (T2)					
Irish Identification (T1)	0.68	0.65	0.05	15.01	< .001
British Identification (T1)	-0.03	-0.03	0.04	-0.63	.530
Compatibility (T1)	0.00	0.00	0.04	0.11	.916
British ID × Compatibility (T1)	0.02	0.03	0.03	0.74	.460
Irish ID × Compatibility (T1)	-0.05	-0.08	0.03	-1.82	.069
Compatibility (T2)					
Irish Identification (T1)	0.15	0.12	0.06	2.54	.011
British Identification (T1)	0.02	0.02	0.05	0.35	.727
Compatibility (T1)	0.61	0.59	0.05	13.03	< .001
British ID × Compatibility (T1)	-0.02	-0.03	0.03	-0.68	.496
Irish ID × Compatibility (T1)	0.01	0.02	0.04	0.34	.732
British Identification (T2)					
Irish Identification (T1)	-0.16	-0.13	0.05	-3.17	.002
British Identification (T1)	0.72	0.71	0.04	16.76	< .001
Compatibility (T1)	0.04	0.04	0.04	1.07	.285
British ID × Compatibility (T1)	-0.00	-0.01	0.03	-0.13	.900
Irish ID × Compatibility (T1)	-0.02	-0.03	0.03	-0.71	.473

Notes: T1 = Time 1, T2 = Time 2; ID = identification; bold indicates that regressions were significant at $p < .05$ level.

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The interaction between Irish trait ratings and perceived compatibility at Time 1 did not predict British trait ratings at Time 2 ($b = 0.04, p = .282$) but the interaction between British trait ratings and perceived compatibility at Time 1 did predict Irish trait ratings at Time 2 ($b = 0.06, p = .047$). See Table 5 for all regression coefficients associated with this model.

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Table 5. Regression for trait ratings and group compatibility at Time 1 and Time 2.

	<i>B</i>	β	<i>SE</i>	<i>z</i>	<i>p</i>
Irish Trait Ratings (T2)					
Irish Trait Ratings (T1)	0.61	0.58	0.05	12.19	< .001
British Trait Ratings (T1)	-0.04	-0.04	0.04	-0.83	.408
Compatibility (T1)	0.05	0.08	0.03	1.81	.070
British TR × Compatibility(T1)	0.06	0.09	0.03	1.99	.047
Irish TR × Compatibility (T1)	-0.04	-0.05	0.03	-1.19	.233
Compatibility (T2)					
Irish Trait Ratings (T1)	-0.02	-0.01	0.08	-0.29	.769
British Trait Ratings (T1)	0.11	0.07	0.07	1.46	.144
Compatibility (T1)	0.61	0.59	0.05	13.18	< .001
British TR × Compatibility (T1)	-0.01	-0.01	0.05	-0.27	.789
Irish TR × Compatibility (T1)	-0.08	-0.07	0.05	-1.52	.128
British Trait Ratings (T2)					
Irish Trait Ratings (T1)	-0.07	-0.06	0.05	-1.32	.188
British Trait Ratings (T1)	0.64	0.62	0.05	13.57	< .001
Compatibility (T1)	0.10	0.13	0.03	3.24	.001
British TR × Compatibility (T1)	-0.02	-0.03	0.03	-0.73	.466
Irish TR × Compatibility(T1)	0.04	0.05	0.03	1.08	.282

Notes: T1 = Time 1, T2 = Time 2; TR = trait ratings; bold indicates that regressions were significant at $p < .05$ level.

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The interaction between Irish behavioural intentions and perceived compatibility at Time 1 did not predict British behavioural intentions at Time 2 ($b = 0.05, p = .140$) nor did the interaction between British behavioural intentions and perceived compatibility at Time 1 predict Irish behavioural intentions at Time 2 ($b = 0.03, p = .362$). See Table 6 for all regression coefficients associated with this model.

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Table 6. *Regression for behavioural intentions and group compatibility at Time 1 and Time 2.*

	<i>B</i>	β	SE	<i>z</i>	<i>p</i>
Irish Behavioural Intentions (T2)					
Irish Behavioural Intentions (T1)	0.63	0.62	0.05	12.06	< .001
British Behavioural Intentions (T1)	-0.05	-0.05	0.04	-1.04	.297
Compatibility (T1)	0.07	0.09	0.04	2.11	.035
British BI × Compatibility(T1)	0.03	0.04	0.03	0.91	.362
Irish BI × Compatibility(T1)	-0.03	-0.05	0.03	-1.04	.299
Compatibility (T2)					
Irish Behavioural Intentions (T1)	-0.02	-0.02	0.07	-0.32	.748
British Behavioural Intentions (T1)	0.13	0.12	0.06	2.33	.020
Compatibility (T1)	0.60	0.57	0.05	12.94	< .001
British BI × Compatibility (T1)	-0.00	-0.00	0.04	0.07	.945
Irish BI × Compatibility (T1)	-0.08	-0.09	0.04	-1.84	.066
British Behavioural Intentions (T2)					
Irish Behavioural Intentions (T1)	-0.05	-0.04	0.06	-0.79	.432
British Behavioural Intentions (T1)	0.66	0.65	0.05	13.59	< .001
Compatibility (T1)	0.08	0.09	0.04	1.97	.049
British BI × Compatibility (T1)	0.01	0.01	0.03	0.26	.797
Irish BI × Compatibility (T1)	0.05	0.07	0.04	1.48	.140

Notes: T1 = Time 1, T2 = Time 2; BI = behavioural intentions; bold indicates that regressions were significant at $p < .05$ level.

Discussion

The present research investigated whether identification with British and Irish people in NI and attitudes towards British and Irish people are cognitively balanced. We tested the relationship between British and Irish identification and attitudes towards these groups for different levels of perceived group compatibility cross-sectionally and longitudinally. The cross-sectional findings were in line with hypotheses. Results showed that when participants perceived British people and Irish people as more compatible, higher British identification was associated with higher Irish identification. At lower levels of perceived compatibility, we found the opposite association; higher British identification was associated with lower Irish identification. Similarly, when perceived compatibility was higher, more positive attitudes towards British people were positively associated with more positive attitudes towards Irish people. Again, at lower levels of perceived compatibility, more positive attitudes towards British people were associated with less positive attitudes towards Irish people. These findings replicated for both group evaluations and behavioural intentions. These findings were consistent across both time points. Altogether, the cross-sectional analyses provide support for the assumption that identification and attitudes towards British and Irish people in NI are balanced.

The longitudinal analyses provided only little support for balanced judgments over time. The interaction between Irish identification and perceived compatibility of Irish people and British people at Time 1 did not predict British identification at Time 2. The reverse interaction effect was also not significant indicating that perceived compatibility did not moderate how British identification at Time 1 predicted Irish identification at Time 2. The second longitudinal model investigated the moderating

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effect of perceived compatibility on trait ratings of British people and Irish people. For this model, some evidence was found for cognitive balanced judgments over time. For higher levels of perceived compatibility at Time 1, more positive British trait ratings at Time 1 predicted more positive Irish trait ratings at Time 2 however, perceived compatibility between British and Irish people at Time 1 did not moderate the association of Irish trait ratings at Time 1 and British trait ratings at Time 2. The final longitudinal model on the relationship between behavioural intentions towards Irish people and behavioural intentions towards British people did not provide support for balanced judgments over time, specifically. Perceived compatibility at Time 1 did not moderate the relationship of behavioural intentions towards Irish people at Time 1 and behavioural intentions towards British people at Time 2 nor did perceived compatibility at Time 1 moderate the relationship of behavioural intentions towards British people at Time 1 and behavioural intentions towards Irish people at Time 2. Taken together, the longitudinal analyses show little support for the assumption that identification and attitudes towards British people and Irish people in NI are cognitively balanced across time points.

The cross-sectional data very consistently confirmed our hypotheses and thus, support the model of Roth and colleagues (2018) that suggests that identification with multiple groups and intergroup attitudes follow a cognitively balanced structure. The theory behind this model is based on the balanced identity design of Greenwald and colleagues (2002). In line with Heider's (1958) predictions that interpersonal relations are influenced by motivation to attain cognitive consistency, at each of the time points participants identified to a similar extent with British people and Irish people and held more similar attitudes towards both groups when they perceived them as more

compatible. It would be cognitively inconsistent for participants to identify with both groups simultaneously and to evaluate both groups similarly if they perceived the groups as incompatible. The findings are therefore similarly in line with previous research and theory outlining a cognitive balance approach to understanding intergroup bias (see Gawronski, 2012). If people experience cognitive dissonance due to their perception of compatibility of two groups as well as their attitudes towards both groups being imbalanced, they may change their judgements (Gawronski et al., 2005). This change in judgements results from a motivation for cognitive consistency. The findings are also consistent with previous research that has shown that people more easily integrate multiple identities into their self-concept and show less intergroup bias when they perceive the groups as more compatible (e.g., Crisp & Beck, 2005; Iyer et al., 2009; Loughnane et al., 2021; Matschke & Fehr, 2017).

Longitudinally, the moderating effect of perceived compatibility on the relationship between identification with both groups as well as attitudes towards both groups over time was only weakly evidenced. Thus, despite the strong evidence for cognitively balanced judgments assessed cross-sectionally, we did not find convincing evidence that people strive for balanced judgements over time. For cognitive consistency to be a motivator of judgments it has been suggested that it is essential that people can identify the inconsistency in their judgements (Gawronski et al., 2016). We expect the judgements of participants to adhere to a balanced knowledge structure i.e., that participants respond in a cognitively balanced way. A critical factor in predicting whether this knowledge structure is applied is that the structure is momentarily accessible (Gawronski & Bodenhausen, 2006). Applying this interpretation to the current study goes some way to explaining why the moderating effect of compatibility

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is consistently found cross-sectionally but not longitudinally. At each of the distinct time points participants are asked about their identification with and attitudes towards British and Irish people as well how compatible they perceive the groups to be and as such, the knowledge structures associated with the evaluations (which are relevant to one another) become momentarily accessible. It is therefore easy for participants to identify whether their responses are balanced. However, these knowledge structures do not remain activated between timepoints and the inconsistencies in responses across time may not be recognised. As a result, the extent to which responses follow cognitively balanced patterns is reduced.

Apart from the theoretical relevance, the present research may have practical implications. As Brexit potentially threatens intergroup harmony in the region of NI it is vitally important to understand the potential applications of this research. The conflict in NI was among the most violent and intense in Europe in modern history (Hayes & McAllister, 2001) and it is essential that policies are put in place to ensure that this particular political event does not increase the likelihood of intergroup conflict in the region. The findings of the current study suggest that if people identify strongly with British or Irish nationals and have positive attitudes towards one of these groups, emphasising the commonalities between the groups could help fostering intergroup harmony by decreasing bias. Of course, the present research does not provide any causal evidence on whether group compatibility drives positive attitudes towards the second group. However, if people strive for balanced cognitions, identification with one group and positive attitudes towards this group should go along with identification and positive attitudes toward the second group when the groups are perceived to be compatible with each other. Thus, repeatedly making salient the compatibility instead of

the opposition between British and Irish people in the region may go some way to preventing an increase in intergroup conflict in NI in the fallout of the Brexit referendum. Similarly, reducing the focus on the competing goals of the distinct social groups in the region may go some way to maintaining intergroup harmony. Additionally, at both time points and for all measures, the threshold that perceived compatibility needed to reach for reduced bias to be seen was below the midpoint of the scale. This suggests that relatively minor increases in perceived compatibility of the two groups may be associated with reduced intergroup bias, implying that this may be a relatively easy and practicable means to reducing bias.

Limitations and Future Research

A strength of this research is that the expected relationships between variables replicated at two separate time points, both prior to and following the official withdrawal of the UK from the EU and across different measures of intergroup relations. However, a possible limitation is the timing of data collection. We propose that the lack of evidence of a moderating effect of perceived compatibility on identification and attitudes towards British and Irish over time is due to the fact that the cognitive imbalance of responses from one time to another is not clear to the respondent (Gawronski & Bodenhausen, 2006). As the two waves of data collection occurred 12 months apart, it is possible that had data been collected closer together that this moderating effect may have been observed. Future research could investigate the duration it takes for such a moderating effect to be lost by collecting data at more frequent time points.

Prior to data collection at Time 2 we preregistered the hypotheses that perceived compatibility of British and Irish people would moderate the relationship between both

identification with and attitudes towards the groups. It may be a shortcoming of the current study that during data collection the moderator was measured after the predictor and outcome variables in the proposed models. Note, that the overall predictions are based on a cognitive balance approach to understanding the relationships between the variables and the key finding is that these variables exist in balanced triads rather than any of the variables being predictors or outcomes. Thus, our theoretical approach similarly suggests that the more positive the attitudes towards one group and the less positive the attitudes towards the other group the less compatible both groups are perceived to be. Conducting moderation analysis with perceived compatibility as the outcome variable also results in significant interaction effects (see supplemental material) supporting our theory. The present research is based on data of a larger project that investigates intergroup relations in NI and included additional variables that go beyond the scope of the present research question and were not tied to preregistered hypotheses. All variables assessed can be found on OSF. We cannot preclude that any variables assessed prior to the present variables of interest have affected people's responses however, based on the strength and consistency of the findings and our complementary analysis we believe that this is unlikely.

We investigated a cognitive balance approach to understanding intergroup attitudes in the context of NI post-Brexit. Gawronski and colleagues (2016) suggest that people are more highly motivated to avoid cognitive inconsistency in relation to self-relevant groups. We therefore expected to find that perceived compatibility of the groups would moderate identification with and attitudes towards both groups as British people and Irish people were both likely self-relevant for participants (residents of NI). However, we did not test this boundary condition. This calls into question the

generalisability of the current results. Future research could investigate groups that are not self-relevant to participants.

The aim of the current research was to investigate perceived compatibility as a predictor of reduced intergroup bias. The current findings show correlational support that higher perceived compatibility is associated with similar levels of identification with both groups and similar attitudes towards both groups. Future research in a similar context could investigate a causal effect of compatibility on reduced intergroup bias by experimentally manipulating the compatibility of the groups. Such a study design may similarly allow researchers to distinguish between whether higher compatibility is associated with positive attitudes towards both groups as opposed to negative attitudes towards both groups. In a context where the groups are self-relevant i.e., one group is an ingroup, we might expect that increasing compatibility would be associated with more positive attitudes towards both groups since just as most people show positive self-esteem (Bosson et al., 2000; Yamaguchi et al., 2007) they similarly strive for positive evaluations of their ingroup (Greenwald et al., 2002b). In a context where the groups are not self-relevant perceived compatibility may also be associated with more negative attitudes towards both groups. Future research could additionally test these boundary conditions.

Our demographic data (see Table 1) reveal that approximately half of participants at both time points self-categorized as Northern Irish. Previous researchers have suggested that the Northern Irish identity could act as a superordinate category inclusive of both Irish and British people (Lowe & Muldoon, 2014). In line with the common ingroup identity model (Gaertner et al., 1993a) one may suggest that self-categorizing as Northern Irish has facilitated the perceived compatibility of Irish and

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British people in the region. However, supplemental exploratory analysis did not support this prediction; we did not find a significant difference in perceived compatibility between those who did and did not self-categorise as Northern Irish in our sample (see supplemental material) which may rather support predictions from the ingroup projection model (Mummendey & Wenzel, 1999). Future research could investigate whether perceived compatibility between subgroups in a superordinate category context is a necessary precondition for superordinate categorization to improve intergroup relations.

It is also worth noting that in this context our measures of national identification could act as proxies for general political orientation, family background, geographical location in NI etc. and as such we do not see much change in these mean scores over time. For future research targeting longitudinal changes in identification, a more nuanced variable may be required.

While the present findings provide evidence that people respond syllogistically to statements at a present point in time, another consideration of future research would be to address whether the balanced responses that we find at each time point are the result of propositional processes (Gawronski et al., 2007) or that associative processes follow balance principles (Cvencek et al., 2021). Notably, there are many ways for people to respond to cognitive inconsistencies beyond what was measured in the current study. People may alternatively reframe salient aspects of the group resulting in changes in perceived compatibility. Future research could explore different strategies of achieving cognitive consistency in intergroup judgments. Finally, at both waves of data collection, approximately 20% of our sample indicated that they had voted to leave the European Union in the Brexit referendum. Thus our sample does not represent either the

UK population (of which over 50% voted to leave) nor the NI population (of which 44% voted to leave, “EU Referendum,” 2016). However, we have no reason to believe that the presumed psychological mechanisms investigated in the current study would differ in another sample.

Conclusion

Most importantly, the present findings support a cognitive balance approach to understanding multiple group identification and intergroup attitudes. This approach provides a new and parsimonious account to understanding relationships between social groups. It also provides a general explanatory framework for previous research that has demonstrated that emphasising commonalities between social groups reduces intergroup bias.

The results of the current study are bedded in the specific context of NI in the wake of the Brexit referendum outcome. While it is important to understand predictors of intergroup attitudes considering this particular political event and given the historical context of the region, the potential benefits of this research are wide ranging. This is because we can potentially apply the theoretical framework used to inform the study to any situation where understanding identity integration and subsequent intergroup attitudes are important. Similarly, the cognitive consistency approach to understanding intergroup bias is not specific to this context and can potentially be applied to any intergroup attitudes. It is also important to note that as the outcomes of Brexit become clearer in the future, there may be further implications for the relationships between subgroups in NI. Future research may benefit from further data collection as the situation evolves.

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CHAPTER FIVE

General Discussion and Final Conclusions

Chapter 5: General Discussion and Final Conclusions

The goal of the current thesis was to investigate multiple group identification and intergroup attitudes from a cognitive consistency perspective. While much of the previous multiple group identity research has focused on the salience of a particular identity at any given time (Haslam et al., 1999; Laverie & Arnett, 2000; Tajfel & Turner, 1986; Turner et al., 1987; Spencer et al., 1999; Steele & Aronson, 1995), the focus of the current study was to investigate the conditions under which people can identify with multiple distinct groups simultaneously. The findings of the studies in this thesis make a significant contribution to multiple identification research by showing that people identify with multiple social groups in a manner that is cognitively consistent.

Each of the studies in this thesis additionally demonstrate that people similarly hold cognitively consistent intergroup attitudes. Understanding intergroup bias in the contexts of identity change, the loss of a superordinate group categorization and between ingroup and outgroup members with a history of intergroup conflict are all important to foster harmonious contemporary societies. Intergroup bias in each of these contexts are examined in the studies that comprise this thesis.

Three studies investigating different contexts and various intergroup relations demonstrated that when people perceive two groups as higher in compatibility, they identified to more similar extents with and held more similar attitudes towards both groups. Building on previous cognitive consistency and identity integration research, I made predictions of the Recategorization Model of Roth and colleagues (2018) and extended it from identity change contexts to a situation of superordinate category loss and to an ingroup-outgroup context where the distinct groups have a history of intergroup conflict. Study 1 (chapter 2) investigated the identity transition from being a

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student to becoming an employee. Study 2 (chapter 3) investigated Brexit as the loss of a superordinate category for citizens of the UK. Finally, Study 3 (chapter 4) investigated social groups with a history of conflict, namely Irish and British people in Northern Ireland.

The findings of the current studies consistently show that greater perceived compatibility of distinct social groups goes along with similar levels of group identification and reduced intergroup bias. As such they support the general hypothesis that people hold judgements about groups that are cognitively balanced. Study 1 involved an experimental manipulation of compatibility thus suggesting that higher levels of perceived compatibility drive identity integration and similar intergroup attitudes at a specific point in time. The current research also identifies an important boundary condition of this phenomenon. Group compatibility was associated with multiple group identification and more similar attitudes towards the distinct groups for judgements made at a specific time in each of the studies outlined above. However, the relationship was largely not significant overtime. It therefore appears that people are less likely to identify the inconsistencies in their judgements over time and are therefore less likely to respond in a cognitively balanced manner. Additionally, in highly contentious political contexts (such as the fallout of the Brexit referendum), it may be that social and motivational factors are greater predictors of intergroup attitudes than the perceived compatibility of distinct social groups driving group identification and intergroup attitudes.

The findings of the studies described in the preceding chapters contribute to understanding identification with multiple social groups and intergroup attitudes by highlighting that people are motivated to make judgements that are cognitively

balanced. The primary goal of this body of research is to test a novel theoretical approach to understanding multiple group identification and intergroup attitudes and extend it to various contexts and intergroup dynamics. The primary hypotheses in each of the studies were informed by previous cognitive balance research (Gawronski, 2012; Greenwald et al., 2002; Heider, 1958; Roth et al., 2018). The general principle of the cognitive balance approach to understanding identity integration and intergroup attitudes is that people are motivated to avoid cognitive dissonance. If people experience cognitive dissonance in relation to their interpersonal judgements, they may be motivated to change these beliefs (Gawronski et al., 2005). Based on the Recategorization Model (Roth et al., 2018), each of the studies investigated perceived compatibility of distinct social groups as a belief relevant to group identification and group attitudes.

Summary of Study 1

The transition from being a student to becoming an employee, has previously been shown to be a particularly stressful identity change (Ashforth & Saks, 1996; Louis, 1980). Not only is this transition associated with having to take on new responsibilities, cooperate with new colleagues, and adapt to a new environment, but people also gain a new social identity. Since previous researchers have shown that social identity is associated with people's feelings, thoughts, and behaviours, both towards ingroup and outgroup members (Easterbrook & Vignoles, 2012; Tajfel, 1978; Tajfel & Turner, 1986; Turner et al., 1987), we aimed to understand when people who had experienced this identity change could integrate both identities into their self-concept simultaneously and what the downstream consequences were for intergroup attitudes.

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Hence, Study 1 investigated whether experimentally manipulating the perceived compatibility of students and employees increased simultaneous identification with both groups (operationalised as discrepancy in identification with both groups) and whether this in turn predicted more reduced intergroup bias (similarly operationalised as discrepancy in attitudes towards both groups). Additionally, the hypothesis that identity discrepancy would mediate the relationship between perceived compatibility and discrepancy in attitudes towards both groups assumed that people's general tendency for positive self-evaluation is extended to the groups with which they identify (Roth & Steffens, 2014). In line with predictions of the Recategorization Model (Roth et al., 2018), the first study showed that those participants primed to think of the social groups students and employees as higher in compatibility identified to a more similar extent with both groups and in turn showed more similar attitudes towards both groups. This study additionally supported the hypothesis that multiple group identification is also dependent upon motivational processes. Those participants in this study who perceived the identity change from student to employee as voluntary, identified more strongly with employees compared to students and this effect was even stronger when the groups were perceived as incompatible.

Summary of Study 2

The second study similarly investigated the role of perceived compatibility of distinct social groups in relation to identification and intergroup attitudes but in a very different context and a different type of intergroup relation. Increases in various forms of outgroup prejudice since a slight majority of UK citizens had voted to leave the EU (Meleady et al., 2017; Swami et al., 2018; Zmigrod et al., 2018), highlight the importance of understanding predictors of intergroup bias as Brexit unfolds. Hence, we analysed how the perceived compatibility of UK citizens and EU citizens related to

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identification with both groups and how identification in turn related to differences in attitudes towards both groups. This study investigated the relationship between these variables at three distinct time points, two before the UK's official withdrawal from the EU and once after, as well as examining the relationship between these variables overtime. The cross-sectional findings showed that higher perceived compatibility of UK citizens and EU citizens was associated with continued identification with the group EU citizens which in turn predicted less preference for UK citizens over EU citizens. The significant cross-sectional relationship between perceived compatibility and reduced ingroup bias is in line with the predictions of the Recategorization Model (Roth et al., 2018). Additionally, and in line with this approach, higher perceived compatibility of distinct social groups was associated with more similar levels of identification with both UK and EU citizens (though it was not reported in the main findings, see supplemental material). Longitudinally, however, perceived compatibility did not predict superordinate category identification nor reduced ingroup bias at subsequent time points. The fact the hypothesised relationships between variables were consistent at each time point but did not hold true in longitudinal analysis is in line with previous cognitive consistency research. Gawronski and colleagues (2016) previously stated that for cognitive consistency principles to be applied it is important that all aspects of the knowledge structure are simultaneously accessible. The fact that EU identification predicted perceived compatibility at subsequent time points provides some evidence that in certain contexts motivational and social factors may be stronger predictors of intergroup attitudes than the strive for cognitive consistency.

Summary of Study 3

The final study once again investigated perceived group compatibility in the wake of Brexit. This time we tested whether perceived compatibility of British and Irish

people in Northern Ireland moderated the relationship between identification with both of those groups as well as attitudes towards both groups. This study similarly examined intergroup attitudes from a cognitive consistency perspective but in yet another intergroup relations context. The relationship between British and Irish people in Northern Ireland is one historically marred by conflict and violence. As the Brexit vote outcome and the debates that surrounded were likely to make salient the conflicting goals of the subgroups in Northern Ireland, I believed it appropriate and important to understand the relationship between perceived compatibility and measures of group identity and intergroup attitudes. As hypothesised based on the predictions of the Recategorization Model (2018), perceived compatibility of British and Irish people moderated the relationship between identification with both British and Irish people as well as attitudes towards British and Irish people. These moderation analyses in effect tested the same mechanisms as the correlations and regressions between perceived compatibility and discrepancy in identification with and attitudes towards the distinct groups in Studies 1 and 2. Building upon the longitudinal findings of the second study, as well as investigating the hypothesised relationships at each time point, we explored these relationships over time. While the moderating effect of perceived compatibility was consistently found for each of the outcome variables at both time points, there was only limited evidence of a moderating effect over time. In line with the suggestions of previous researchers (Gawronski et al., 2016), and similar to the results of Study 2, these findings support for the argument that for cognitive consistency to motivate judgements it is essential that cognitive inconsistencies can be identified.

Theoretical Implications

The findings of the studies described in the preceding chapters contribute to understanding identification with multiple social groups and intergroup attitudes by

highlighting that people are motivated to make judgements that are cognitively consistent. The cognitive consistency approach to understanding identity integration and intergroup attitudes suggests that people are motivated to avoid cognitive dissonance. If people experience cognitive dissonance (that is the aversive feeling experienced when holding inconsistent judgements simultaneously) in relation to their interpersonal judgements, they may be motivated to change these beliefs (Gawronski et al., 2005). In each of the three studies, when data were analysed cross-sectionally, the main hypotheses were supported. In line with the predictions of the Recategorization Model specifically, and the cognitive consistency approach to understanding intergroup relations more generally, higher perceived compatibility of distinct social groups was associated with more similar levels of identification with both distinct social groups as well as more similar attitudes towards both groups (thus reduced intergroup bias).

Studies conducted by acculturation researchers previously (Amiot et al., 2007; Benet-Martínez, 2012; Benet-Martínez & Haritatos, 2005) provide additional evidence for the Recategorization Model (Roth, 2018). While the hypotheses of acculturation researchers mentioned above were not necessarily informed by a cognitive consistency approach, Benet-Martínez and Haritatos (2005) for example found that people can identify with multiple cultural identities simultaneously only when the groups are perceived as compatible. The Recategorization Model potentially provides a parsimonious account which explains identity integration in acculturation research. A goal of future research could be to test the predictions of the Recategorization Model in contexts of multicultural identity integration.

The current thesis is additionally in line with the findings of previous identity change researchers who have investigated the role of identity compatibility. These

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researchers have shown that higher compatibility of old and new identities is associated with successful integration of a new identity into the self-concept (Iyer et al., 2009; Matschke & Fehr, 2017). These studies and others (e.g., London et al., 2011) show that successful integration of new identities into the self-concept can in turn buffer the negative well-being consequences of change and can foster feelings of belonging. The focus of the current thesis has primarily been to understand multiple group identification and intergroup attitudes, as both constructs are known predictors of intergroup conflict. However, the studies mentioned above show that understanding when multiple group identification is possible is important for a multitude of reasons. Future research could extend build upon the findings of the current study that perceived compatibility goes along with multiple group identification by investigating whether this is in turn associated with downstream consequences related to, for example, adjustment, life satisfaction and well-being related outcomes.

The findings are additionally in line with the findings of previous researchers who have also shown that emphasizing the commonalities between distinct social groups can have a positive effect on intergroup relations (Crisp & Beck, 2005; Hewstone et al., 2002, Sherif & Sherif, 2005). Throughout the current studies, I defined compatibility in terms of the extent to which distinct social groups shared values, norms, and goals and incompatibility as the extent to which groups were in conflict in terms of their values, norms, and goals. In Study 1, I manipulated compatibility by having participants either list similarities (high compatibility condition) or differences (low compatibility condition) between students and employees. Like previous researchers, I found the association between increased commonalities and reduced intergroup bias consistently across each of the studies. This was a consistent finding across the various contexts that were explored in the current thesis. Focusing on the

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similarities between distinct groups allows for similar identification with and attitudes towards both by reducing the cognitive differentiation between both groups. While previous researchers did not focus of cognitive consistency as the mechanism which leads to reduced intergroup bias, the current thesis offers a potential alternative explanation for their findings.

The social identity approach (Tajfel, 1978; Turner et al., 1987) displays the importance of group identification for many outcomes including intergroup attitudes. For this reason, each of the studies in this thesis investigated the relationship between perceived compatibility and group identification. Similar to previous research (Brewer, 1979; Hinkle & Brown, 1990), we consistently found that stronger ingroup identification was associated with higher levels of ingroup favouritism. Study 2 additionally contributes to research on superordinate category identification. Cross-sectionally the analysis showed that the relationship between perceived compatibility of EU citizens and UK citizens and lower levels of ingroup bias of UK citizens was partially explained by identification with the superordinate category of EU citizens. However, results of the longitudinal analysis in this study suggests that superordinate category identification can lead to increased group compatibility rather than vice versa as was hypothesised. These findings generally support the Common Ingroup Identity Model also, as superordinate category identification predicted a reduction in subordinate ingroup favouritism at subsequent time points (Gaertner et al., 1993; Houlette et al., 2004; Levine et al., 2005). This was the case in this study at least in terms of willingness to engage with members of the superordinate category.

Like Study 2, in Study 3 higher perceived compatibility at earlier time points did not predict multiple group identification or similar group attitudes at subsequent time

points. Based on these two studies, a notable implication for theory is the importance of knowledge structure accessibility. That is that each of the relevant judgements are salient for participants at a given time. Gawronski and colleagues (2016) posit that for cognitive consistency to be a motivator of judgements it is essential that any inconsistencies in judgements can be identified. Applying this understanding to the second and third study of this thesis may explain why the preregistered hypotheses were consistently supported in the cross-sectional analysis but that there was evidence of cognitively inconsistent beliefs between time points. At a given point in time, inconsistencies in judgements are easy to identify but inconsistencies between judgements at separate time points are not easily identified. Since the knowledge structure that relates these judgements to one another is not momentarily accessible the motivation for cognitive consistency of these responses is not strong (Gawronski & Bodenhausen, 2006). Gawronski and colleagues argue that consistency results from a propositional process of consistency assessment that is based on an assumption of syllogistic thinking. Based on this understanding, if not all relevant information is accessible, responses that do not logically follow one another do not evoke cognitive dissonance. Without experiencing the aversive feeling of dissonance, people are not inherently motivated to respond in a cognitively consistent manner. As such the findings of Study 2 and 3 in this thesis provide evidence of an important boundary condition for cognitive consistency to motivate responses i.e., that the relevant knowledge structures are accessible.

Practical Implications

As the number of people living outside their country of birth continues to rise (World Migration Report, 2022), opportunities for encounters with outgroup members in contemporary societies will continue to grow. Ensuring harmony between members

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of different groups is an indicator of a healthy society and as such diversity management is an increasingly important task. The findings of the studies that comprise this thesis show some support for making salient the compatibility of distinct groups in terms of their values, norms, and goals as a means of bias reduction. This knowledge could potentially be harnessed for interventions or policies that aim to promote intergroup harmony in modern societies.

Understanding when people can identify with multiple groups simultaneously following an identity change or the loss of a superordinate category membership is important and has consequences for the functionality of a society. Study 1 in this thesis investigates such a context and shows that increased perceived compatibility is associated with the integration of multiple groups simultaneously. The extent to which people identify with an ingroup has consequences for various outcomes including intergroup attitudes (Leach et al., 2008; Turner, 1999). Additionally, successful integration of multiple identities into the self-concept is associated with reduced intergroup bias. The experimental design of Study 1 indicated that increasing the accessibility of similarities rather than differences between two distinct social groups may be a practicable approach to promoting multiple group identification and reduced intergroup bias. Though the findings of this study referred to the specific identity transition from being a student to becoming an employee, the findings could theoretically be applied to any identity change. This line of research has the potential to be particularly beneficial as social group change is omnipresent in contemporary society.

In Study 2, which investigated the specific context of the UK post-Brexit, there was no longitudinal effect of perceived compatibility on continued identification with

the former superordinate category or reduced ingroup favouritism. There was some evidence however of directionality with superordinate identification predicting perceived compatibility and reduced ingroup favouritism (when based on behavioural intentions) at future time points. While there is evidence of an association between increased perceived compatibility and reduced intergroup bias in each of the studies of this thesis, Study 2 uniquely provides some evidence that in certain contexts motivational and social factors may in fact play a more significant role. In the case of UK citizens post-Brexit, given the polarizing and politically charged nature of the event, it is perhaps not surprising that continued identification with a highly valued group would be a more important predictor of intergroup attitudes than the perception of the compatibility between the groups. The findings in this study would suggest that a focus on a European identity that UK citizens can still belong to (based on geography, history, and culture in Europe rather than EU membership) may instead be most effective for maintaining positive relationships between UK citizens and citizens from EU nations.

In Study 3, despite cross-sectional analysis supporting that perceived group compatibility moderates the relationship between identification with and attitudes towards both groups, like Study 2 this effect was not consistent over time. The Recategorization Model of Roth and colleagues (2018) and the balanced identity design of Greenwald et al., (2002) suggest that social knowledge is represented in a cognitively consistent manner. However, a precondition of cognitive consistency being a motivator of beliefs is that the relevant knowledge structures are momentarily accessible (Gawronski & Bodenhausen, 2006). Based on this understanding of the necessary preconditions of cognitive consistency as a motivator, in Studies 2 and 3 participants were likely able to identify whether their responses were (in)consistent at any given wave of data collection, however, they could not necessarily identify when their

responses were inconsistent with responses that they had given months previously. This time constraint may suggest that any intervention which aims to increase the perceived compatibility of distinct social groups may need to *repeatedly* make salient the similarities of the groups in terms of their goals, norms, and values.

Taking these considerations into account, an intervention which aims to reduce ingroup bias or improve intergroup attitudes could repeatedly make salient the common goals, values, norms, beliefs of the distinct social groups. In line with the findings of the studies above, I would expect that this would lead to increased perceptions of compatibility of the distinct groups. Based on individuals' inherent motivation to make judgements that are cognitively consistent, we would expect more similar levels of identification with both groups and reduced intergroup bias as a result. We would focus on perceived compatibility in an intervention as it is intuitively more malleable than group identification or group attitudes. An important consideration to any such intervention would be to emphasise goals that are distinctly compatible and not just similar. For example, two distinct groups may wish to occupy or control an area of land. As such this is a similar but zero-sum goal, by one group achieving it is automatically not possible for the other group to achieve their goal. Making this similar goal salient could in fact highlight the incompatibility of the groups and have the opposite of the desired outcome.

Limitations and Recommendations for Future Research

Although this thesis makes a significant contribution to multiple group identification and intergroup attitudes research, like any body of work it is not without limitations. In the original publication of the Recategorization Model, Roth and colleagues (2018) define incompatibility as meaning that one of the social groups shares

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associations with a trait that is diametrically opposed with the other group or as groups that are mutually exclusive. This understanding is in line with Gawronski's (2012) definition in which he distinguishes incompatibility from ambivalence. While ambivalence is experienced when someone or some groups are associated with both positive and negative traits simultaneously, it is only incompatible if these traits exist on the same dimension. In each of the three studies described above we measured compatibility using a three-item scale. The three items consisted of one graphical representation of the extent to which the two groups overlap, with participants being asked to indicate which image best represents the closeness of the two groups, one item which explicitly asks about the incompatibility of the groups and another which asks explicitly about the compatibility of both groups. Incompatibility is defined within the measure as conflict between the groups in terms of norms, values, and rules, while compatibility is defined within the measure as harmony between the groups in terms of norms, values, and rules. However, the definition does not specifically refer to the groups having traits that are diametrically opposed. A possible limitation of the studies is that these items, and particularly the graphical item, do not clearly distinguish incompatibility from ambivalence. For example, it is possible that participants in the current research could have thought of one group as being kind and the other group being lazy and therefore indicated that they were less overlapping. While this would fit an understanding of ambivalence between the groups as Gawronski defines it, it does not necessarily refer to incompatibility. In future research, a more nuanced measure could be used to clarify this distinction.

In each of the studies in this thesis we investigated the compatibility of, identification with and attitudes towards groups that were self-relevant to the participants, i.e., ingroups, former ingroups, or relevant outgroups. Given that

Gawronski and colleagues (2016) have previously suggested that cognitive inconsistency is less tolerable in relation to self-relevant groups, we particularly expected the judgements of participants in our studies to be cognitively balanced. This may somewhat limit the generalisability of our results in that it is possible that an inherent drive for cognitive balance may not be an important factor in attitudes towards groups that are not self-relevant. As such, a potential avenue for future research would be to investigate self-relevance as a boundary condition to examine whether people can tolerate cognitive imbalance more readily in relation to groups that are not self-relevant. Relatedly, since each of the studies described above investigated groups that were self-relevant to participants, we may expect that increased perceived compatibility of the groups would lead to positive evaluations of both since most people show positive self-esteem (Bosson et al., 2000; Yamaguchi et al., 2007) and this is extended to the ingroup (Greenwald et al., 2002). In hypothetical future research investigating the perceived compatibility of two groups, neither of which are self-relevant, no group would necessarily be expected to be positively evaluated. It is possible then that an increase in perceived compatibility would lead negative evaluations of both groups to make the judgements cognitively consistent.

The approach we take in the studies presented in this thesis to test cognitive consistency assumes that people think syllogistically, i.e., if I believe X and Y is diametrically opposed to X , then I cannot believe Y . In our studies we show some evidence that this is the case when we force people to respond to related measures. There is a debate in this field of research on whether balanced responses are the result of conscious deliberation (Gawronski et al., 2007) or implicit connections (Cvencek et al., 2021). While addressing this discussion is beyond the scope of this thesis, a next step in the research could be to explore and better understand the ways that people respond to

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cognitive inconsistencies. Understanding whether the patterns that we have found in the current research are a result of conscious deliberation or implicit connections may be possible by utilising tests of implicit association (Greenwald et al., 1998).

Another consideration that is particularly relevant to Study 2 and Study 3 of this thesis are the motivational and social factors that may have contributed to participants responses. The timing of data collection for both Studies 2 and 3 meant that I was applying this cognitive balance approach during the fallout of the Brexit referendum. In Study 2 I investigated Brexit as the loss of a superordinate category for UK citizens and in Study 3 I collected data from participants in Northern Ireland, a region in which the debates surrounding Brexit were particularly contentious. As such, it may have been the case that a solely cognitive balance focused approach is an oversimplification. Deeper analysis of motivational and social factors would need to be considered in future research in such an applied context. While our supplemental analysis in Studies 2 and 3 suggest that the cognitive balance approach holds up, a potential issue may be that our measures of identity inappropriately psychologise what is in fact a proxy measure for general political orientation, family history, geographical location etc. This is particularly likely in the context of Study 3 given the history of intergroup conflict in the region. For future research, a more nuanced variable may be required to ensure that our measures accurately capture the concept of identification as is intended.

As with any piece of social psychological research, it is also important to take ethical considerations into account. In understanding the psychological mechanisms behind intergroup attitudes which may act as preconditions to increased or decreased levels of intergroup conflict, it is important to emphasise that the aim is to do just that and not see the findings as a reflection of what should or should not be done. While

reducing conflict between groups will in many cases be a legitimate goal, it could also be seen as detrimental in a context where inequality or disadvantage may be a factor and it is a justification to further subjugate an oppressed group.

Conclusion

Understanding predictors of multiple group identification and reduced intergroup bias is a key objective of the psychology of intergroup relations. In a variety of contexts and investigating multiple different intergroup dynamics, this thesis provides much evidence that identification with social groups, intergroup attitudes, and perceptions of compatibility of distinct social groups follow cognitively balanced patterns. It was illustrated that higher levels of perceived compatibility were associated with continued identification with a former ingroup, continued identification with a former superordinate category, and simultaneous identification with two groups with a history of conflict. There was also much evidence that higher levels of perceived compatibility were associated with lower levels of intergroup bias in each of these contexts. As such this thesis shows strong support for predictions of the Recategorization Model (Roth et al., 2018).

In addition to supporting basic principles of the cognitive consistency approach, the current thesis also outlined important boundary conditions. First, for identity transitions, integration of a new identity into the self-concept depends on how much people are willing to change their group membership. In Study 1, participants who perceived the transition from being a student to becoming an employee as more voluntary showed a stronger inclination to identify with employees rather than students. However, this effect was even stronger for those who perceived the groups as lower in compatibility, showing that in the context of an identity transition, the voluntariness in

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change effects the extent to which cognitive balance principles apply. Second, the longitudinal nature of Studies 2 and 3 allowed us to test boundary condition of accessibility of the balanced triads. In both cases, the cognitive balanced triads were more strongly evidenced in the cross-sectional analysis than in the longitudinal analysis. In other words, when people can easily identify inconsistencies in their judgements, they will resolve the inconsistencies by altering certain judgements. However, over time inconsistencies are less easily identified and attitude change (or other attempts to resolve the inconsistency) are less likely to occur. This suggests that an important boundary condition for cognitive consistency to apply in these contexts is that the relevant knowledge structures must be momentarily accessible.

In conclusion, intergroup attitudes follow cognitively consistent patterns. Though the effects are stronger at a given time point than over time, the findings of each of the studies in this thesis support the hypothesis that perceived compatibility of distinct social groups is associated with simultaneous identification with and more similar attitudes towards both. This finding was consistent in contexts of group change, the loss of a superordinate category membership, and in a context of historical intergroup conflict. The current thesis supports basic principles of cognitive balance as well as identifying some of the important boundary conditions. This collection of studies lays a strong foundation for future research that will investigate group identification and intergroup attitudes from a cognitive balance perspective. These findings can inform government bodies and policy makers in the development of approaches to maintaining intergroup harmony that are based on the understanding that people are motivated to avoid inconsistent cognitions. This will become increasingly important in contemporary societies as the opportunities for intergroup interactions continue to grow.

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Appendices

Study 1: From Student to Employee: Group Compatibility Predicts Group

Identification and Intergroup Attitudes

Materials

Compatibility manipulation

Please think about commonalities [differences, contradictions, and conflicts] between the two groups (students and employees) that show that the two groups are [in]compatible. What are the aspects [in] that students and employees share with [differ or contradict] each other? What are attributes, norms, values, and rules that are shared [conflicting] between students and employees? What are similarities [conflicts] in the groups' goals?

You have 2 minutes to think about what the two groups have in common [about differences, contradictions, and conflicts] and to write down 3 similarities or aspects that the two groups have in common [3 differences, contradictions, or conflicts] in the text box below.

Supplemental Material

Additional Hypothesis

A factor that, according to Roth et al. (2018), effects the strength of identification with social groups can be the length of group membership. The longer a person is a member of a group, the stronger the association between the group and the self. Findings from organizational psychology (Hall & Schneider, 1972) positively relate the length of membership in a company to identification with the company and see this partly because in a longer period more positive and rewarding experiences

resulting from group membership occur. Following this rationale, the following hypothesis results for the present study:

Hypothesis: The longer the duration of group membership, the stronger the identification with this social group.

Results

The duration of membership in the working group was converted into whole years based on the year given by the participants, with the current year at the time of data collection, 2018, being coded as a flat rate of 0.5 years. The mean duration of group membership was 15.42 years ($SD = 10.63$). A Pearson correlation was calculated to test the hypothesis whether the duration of group membership in the professional group was positively related to the strength of identification with this group. No significant correlation was evident, $r = .01$, $p = .453$ (One-way test).

Sequential mediation analysis

We also explored a sequential mediation model in line with theory claiming that attitudes drive behavioural intentions. Including discrepancy in identification and discrepancy in trait ratings as sequential mediators on the effect of compatibility on behavioural intentions reduced the direct effect of compatibility on discrepancy in behavioural intentions to non-significant, $b = 0.03$, $SE = 0.08$, $t(265) = 0.38$, $p = .703$. The indirect effect of compatibility through both discrepancy in identification and discrepancy in trait ratings was reliable $b = -0.19$, $SE = 0.06$, 95% CI [-0.32, -0.07], indicating that discrepancy in identification and discrepancy in trait ratings mediate the relationship between group compatibility and discrepancy in behavioural intentions in sequence.

Part-time work during university as a Moderator

In order to test whether or not participants worked during university moderates the relationship between compatibility condition and the outcome variables, we conducted moderation analyses using the PROCESS model 1 for SPSS (Hayes, 2013). For discrepancy in identification as the outcome variable, the interaction working during university \times compatibility was not statistically significant, $t(265) = 0.14, p = .891$. For discrepancy in trait ratings as the outcome variable, the interaction working during university \times compatibility was not statistically significant, $t(265) = 0.47, p = .636$. For discrepancy in behavioural intentions as the outcome variable, the interaction working during university \times compatibility was not statistically significant, $t(265) = 1.56, p = .121$.

Study 2 Brexit and the Loss of EU Membership for UK Citizens: EU Identification and UK Preference

Supplemental Material

Leavers vs Remainers Comparison

We performed each piece of analysis conducted in the main paper separately for the subgroups of those who indicated that they would vote to leave in a future Brexit referendum and those who indicated that they would vote to remain.

Time 1

At Time 1, perceived group compatibility was negatively correlated with both differences in group evaluation and differences in behavioural intentions (i.e. the higher the perceived compatibility the less preference shown towards UK citizens relative to EU citizens), for both Leavers and Remainers. Group compatibility also was correlated with EU identification but not UK identification for both groups.

Table S1. Correlations, means and standard deviations at Time 1 in the subsample of those who indicated that they would vote leave in a future Brexit referendum (n = 80).

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	3.93	1.37		-.016	.683***	-.361***	-.575***
2. UK Identification	5.86	0.92			.227*	.370**	.318**
3. EU Identification	3.75	1.28				-.325**	-.594***
4. Group Evaluations Difference	0.11	0.80					.637***
5. Behavioural Intentions Difference	0.81	1.17					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table S2. Correlations, means and standard deviations at Time 1 in the subsample of those who indicated that they would vote remain in a future Brexit referendum (n = 267).

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	5.19	1.21		.111	.535***	-.173**	-.165**
2. UK Identification	4.72	1.26			.263***	.488***	.644***
3. EU Identification	5.02	1.09				-.216***	-.271***
4. Group Evaluations Difference	-0.63	0.91					.631***
5. Behavioural Intentions Difference	-0.45	1.08					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Time 2

At Time 2, perceived group compatibility was negatively correlated with differences in behavioural intentions, for both Leavers and Remainers. Perceived group compatibility was negatively correlated with differences in group evaluation for Remainers and a similar pattern in the relationship emerged for Leavers though it did not reach significance. Group compatibility also was correlated with EU identification but not UK identification for both groups.

Table S3. *Correlations, means and standard deviations at Time 2 in the subsample of those who indicated that they would vote leave in a future Brexit referendum (n = 52).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	3.85	1.15		.086	.681***	-.205	-.499***
2. UK Identification	5.50	1.17			.335*	.255	.244
3. EU Identification	3.59	1.06				-.165	-.489***
4. Group Evaluations Difference	0.24	0.79					.336*
5. Behavioural Intentions Difference	0.79	1.02					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table S4. *Correlations, means and standard deviations at Time 2 in the subsample of those who indicated that they would vote remain in a future Brexit referendum (n = 188).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	5.19	1.08		-.009	.557***	-.196**	-.252***
2. UK Identification	4.65	1.21			.205**	.518***	.586***
3. EU Identification	4.87	1.07				-.213**	-.383***
4. Group Evaluations Difference	-0.57	0.83					.499***
5. Behavioural Intentions Difference	-0.48	0.99					

* $p < .05$, ** $p < .01$, *** $p < .001$.

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Time 3

At Time 3, perceived group compatibility was negatively correlated with differences in behavioural intentions for Remainers. Perceived group compatibility was similarly negatively correlated with differences in group evaluation for Leavers though it did not reach significance. Group compatibility was not significantly related to either measure of group differences for Remainers at this time point. Group compatibility also was correlated with EU identification but not UK identification for both groups.

Table S5. *Correlations, means and standard deviations at Time 3 in the subsample of those who indicated that they would vote leave a future Brexit referendum (n = 63).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	3.74	1.17		.136	.629***	-.230	-.453***
2. UK Identification	5.51	1.08			.404**	.406**	.243
3. EU Identification	3.72	1.14				-.140	-.407***
4. Group Evaluations Difference	0.10	0.79					.426*
5. Behavioural Intentions Difference	0.82	1.17					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table S6. *Correlations, means and standard deviations at Time 3 in the subsample of those who indicated that they would vote remain in a future Brexit referendum (n = 173).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	5.03	1.16		.009	.522***	.085	-.097
2. UK Identification	4.53	1.26			.249**	.381***	.502***
3. EU Identification	4.90	1.00				-.080	-.280***
4. Group Evaluations Difference	-0.53	0.78					.596***
5. Behavioural Intentions Difference	-0.57	0.99					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Mediation Analysis

Differences in Group Evaluations – Leavers (T1: $n = 80$; T2: $n = 52$; T3: $n = 63$)

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that at each time point the indirect effect through identification with EU citizens, controlling for identification with UK citizens, were significant time points one and three but was not significant at time 2 (Time 1: $b = -0.14$, $SE = 0.06$, 95% CI [-0.27 to -0.02]; Time 2: $b = -0.11$, $SE = 0.12$, 95% CI [-0.36 to 0.10]; Time 3: $b = -0.12$, $SE = 0.06$, 95% CI [-0.24 to -0.01]). Despite the consistent positive relationship of identification with UK citizens and differences in group evaluations, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant at any of the time points (Time 1: $b = -0.00$, $SE = 0.03$, 95% CI [-0.07 to 0.05]; Time 2: $b = 0.02$, $SE = 0.04$, 95% CI [-0.06 to 0.11]; Time 3: $b = 0.05$, $SE = 0.06$, 95% CI [-0.07 to 0.17]; see Figure S1 for all effects associated with this model).

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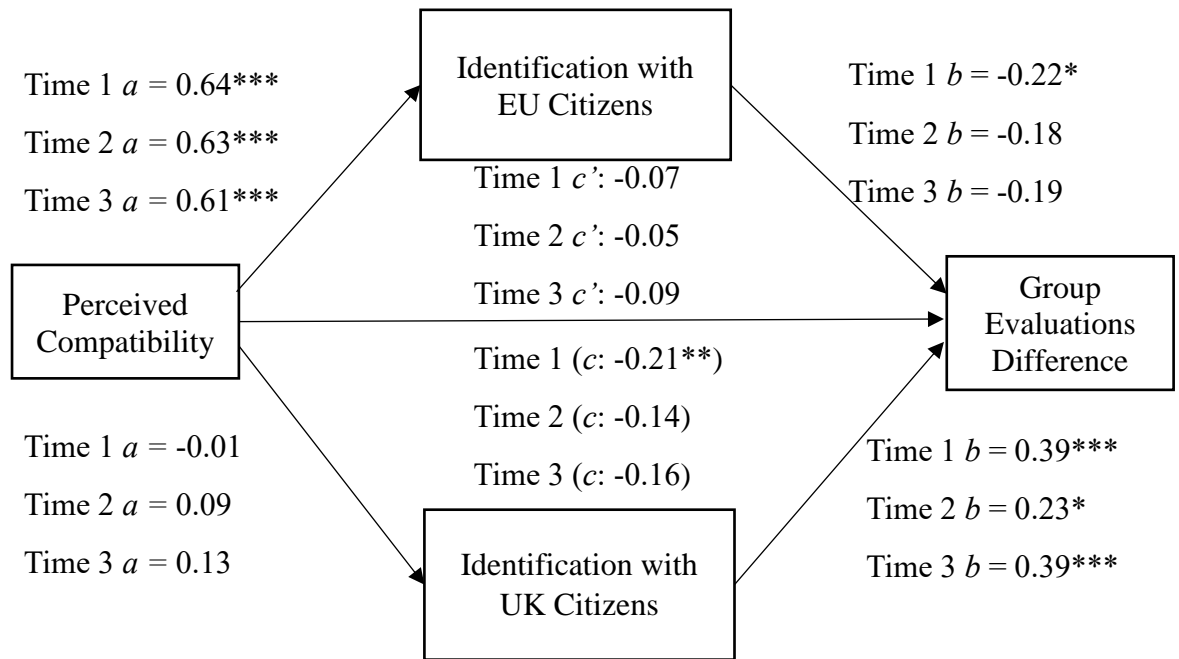


Figure S1: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in group evaluations in the subsample of those who indicated that they would vote leave in future Brexit referendum. * $p < .05$, ** $p < .01$, *** $p < .001$.

Differences in Group Evaluations – Remainer (T1: $n = 267$; T2: $n = 188$; T3: $n = 173$).

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that at each time point the indirect effect through identification with EU citizens, controlling for identification with UK citizens, were significant at all three time points (Time 1: $b = -0.14$, SE = 0.03, 95% CI [-0.21 to -0.07]; Time 2: $b = -0.14$, SE = 0.04, 95% CI [-0.22 to -0.07]; Time 3: $b = -0.11$, SE = 0.04, 95% CI [-0.19 to -0.05]). Despite the consistent positive relationship of identification with UK citizens and differences in group evaluations, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK

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citizens, was not significant at any of the time points (Time 1: $b = 0.05$, $SE = 0.03$, 95% CI [-0.01 to 0.11]; Time 2: $b = -0.00$, $SE = 0.04$, 95% CI [-0.08 to 0.07]; Time 3: $b = 0.00$, $SE = 0.03$, 95% CI [-0.05 to 0.06]; see Figure S2 for all effects associated with this model).

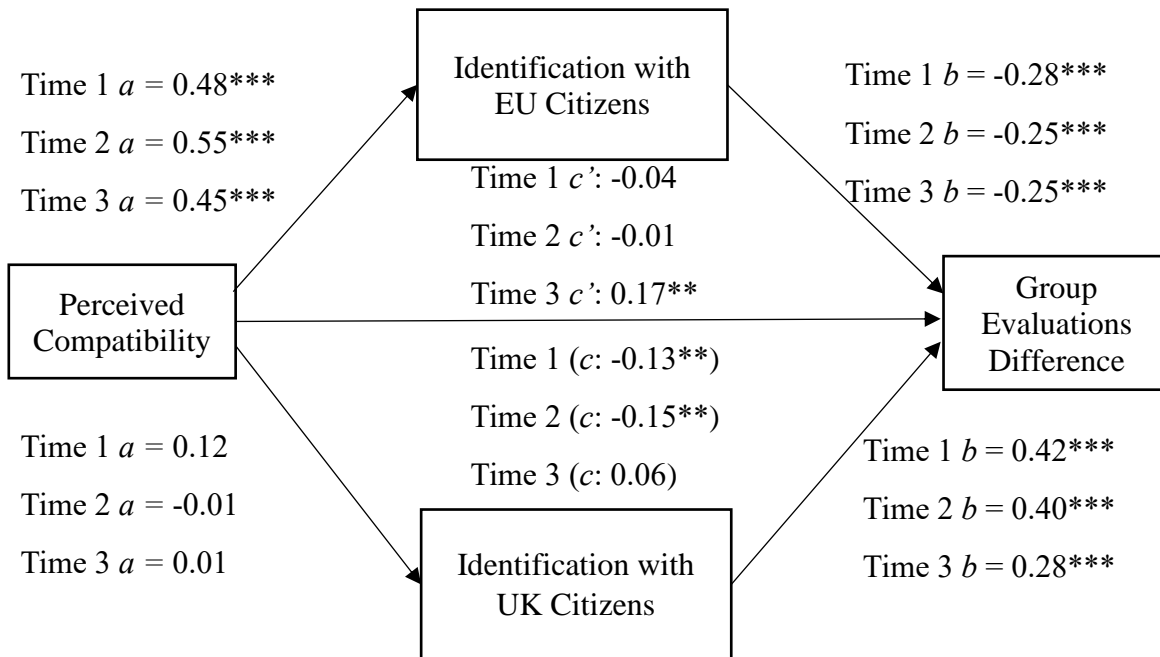


Figure S2: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in group evaluations in the subsample of those who indicated that they would vote remain in a future Brexit referendum. * $p < .05$, ** $p < .01$, *** $p < .001$.

Leavers vs Remainers Mediation Model Comparisons

We tested to see whether model fit was significantly reduced when constraining the models to be equal at all three time points. There was no significant difference between leavers and remainers at any of the three time points: Time 1: $\chi^2(5) = 5.31$, $p = .379$; Time 2: $\chi^2(5) = 3.43$, $p = .634$; Time 3: $\chi^2(5) = 10.86$, $p = .054$, respectively.

Difference in Behavioural Intentions - Leavers (T1: $n = 80$; T2: $n = 52$; T3: $n = 63$).

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that at each time point the indirect effect through identification with EU citizens, controlling for identification with UK citizens, were significant at all three time points (Time 1: $b = -0.34$, $SE = 0.07$, 95% CI [-0.49 to -0.20]; Time 2: $b = -0.31$, $SE = 0.13$, 95% CI [-0.57 to -0.08]; Time 3: $b = -0.28$, $SE = 0.09$, 95% CI [-0.47 to -0.11]). Despite the consistent positive relationship of identification with UK citizens and differences in behavioural intentions, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant at any of the time points (Time 1: $b = -0.01$, $SE = 0.04$, 95% CI [-0.10 to 0.08]; Time 2: $b = 0.03$, $SE = 0.06$, 95% CI [-0.12 to 0.14]; Time 3: $b = 0.06$, $SE = 0.08$, 95% CI [-0.08 to 0.23]; see Figure S3 for all effects associated with this model).

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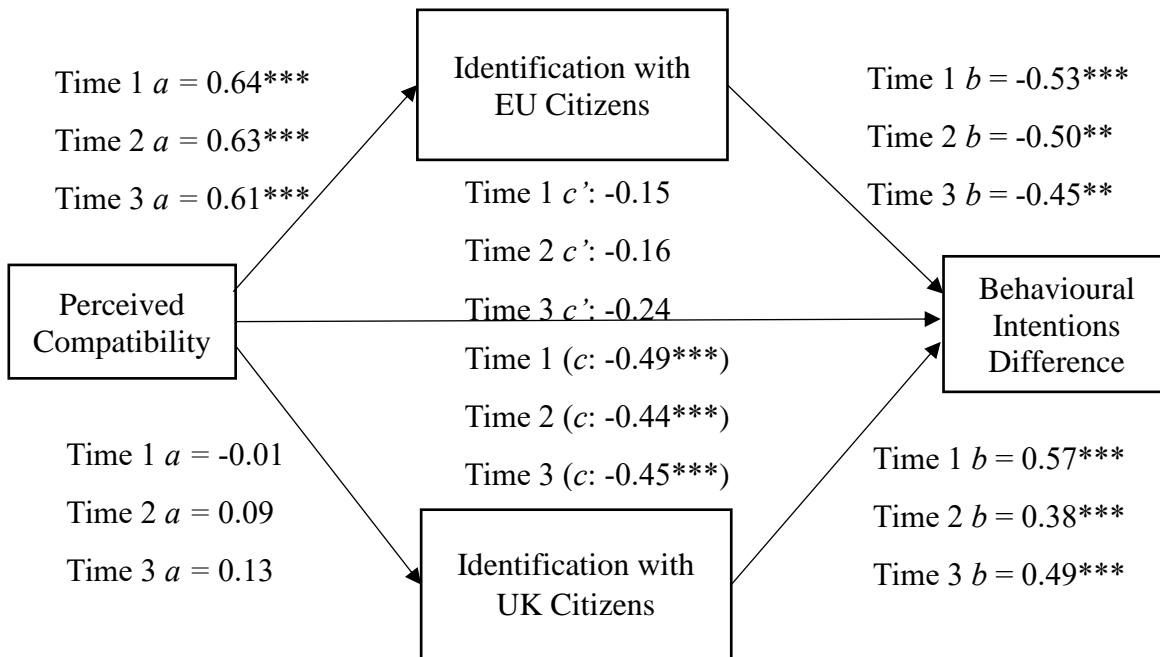


Figure S3: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in behavioural intentions in the subsample of those who indicated that they would vote leave in a future Brexit referendum. * $p < .05$, ** $p < .01$, *** $p < .001$.

Difference in Behavioural Intentions – Remainer (T1: $n = 267$; T2: $n = 188$;

T3: $n = 173$).

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that at each time point the indirect effect through identification with EU citizens, controlling for identification with UK citizens, were significant at all three time points (Time 1: $b = -0.23$, SE = 0.04, 95% CI [-0.30 to -0.16]; Time 2: $b = -0.29$, SE = 0.05, 95% CI [-0.39 to -0.19]; Time 3: $b = -0.24$, SE = 0.05, 95% CI [-0.33 to -0.15]). Despite the consistent positive relationship of identification with UK citizens and differences in behavioural intentions, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant at any of the time points (Time 1: $b = 0.08$, SE = 0.05, 95%

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CI [-0.02 to 0.18]; Time 2: $b = -0.01$, SE = 0.05, 95% CI [-0.11 to 0.10]; Time 3: $b = 0.00$, SE = 0.05, 95% CI [-0.08 to 0.10]; see Figure S4 for all effects associated with this model).

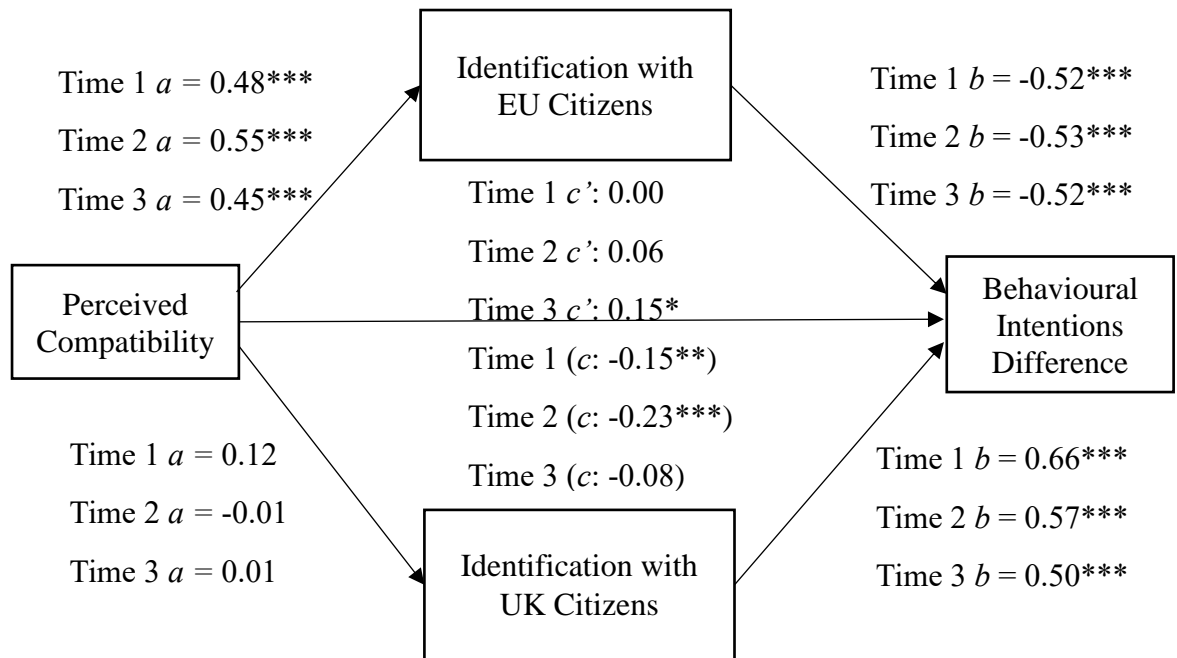


Figure S4: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in behavioural intentions in the subsample of those who indicated that they would vote remain in a future Brexit referendum. * $p < .05$, ** $p < .01$, *** $p < .001$.

Leavers vs Remainers Mediation Model Comparisons

We tested to see whether model fit was significantly reduced when constraining the models to be equal at all three time points. There was no significant difference between Leavers and Remainers at time two, however the groups did differ significantly and times 1 and 3: Time 1: $\chi^2(5) = 13.18$, $p = .022^*$; Time 2: $\chi^2(5) = 9.05$, $p = .107$; Time 3: $\chi^2(5) = 12.49$, $p = .029^*$, respectively.

Longitudinal Analysis

Group evaluations difference

Leavers

We similarly examined longitudinal relationships between group compatibility and difference in group evaluations across the three time points, as well as the mediation of these relationships by both UK identification and EU identification for Leavers. The model showed reasonably good fit to the data, $\chi^2(28) = 36.70$, $p = .126$, CFI = .965, RMSEA = .086, SRMR = .070¹⁹ (see Figure S5). Perceived group compatibility did not predict difference in group evaluations at subsequent time points ($b = 0.03$, $p = .804$). In addition, group compatibility did not predict identification with EU citizens ($b = 0.04$, $p = .696$). In line with the cross-sectional analysis, perceived group compatibility did not predict identification with UK citizens ($b = -0.07$, $p = .509$), but identification with UK citizens did predict higher difference in group evaluations at subsequent time points ($b = 0.19$, $p = .044$). For Leavers, identification with EU citizens did not predict perceived compatibility of EU citizens and UK citizens at subsequent time points ($b = 0.10$, $p = .497$). Differences in group evaluations predicted reduced perceived compatibility of the two groups at subsequent time points ($b = -0.30$, $p = .031$). Additionally, UK identification predicted EU identification at subsequent time points ($b = 0.24$, $p = .015$).

¹⁹ According to the goodness-of-fit indices of Hu & Bentler (1999), CFI value > .90 indicates good fit, RMSEA value < .08 indicates good fit, SRMR value < .08 indicates good fit.

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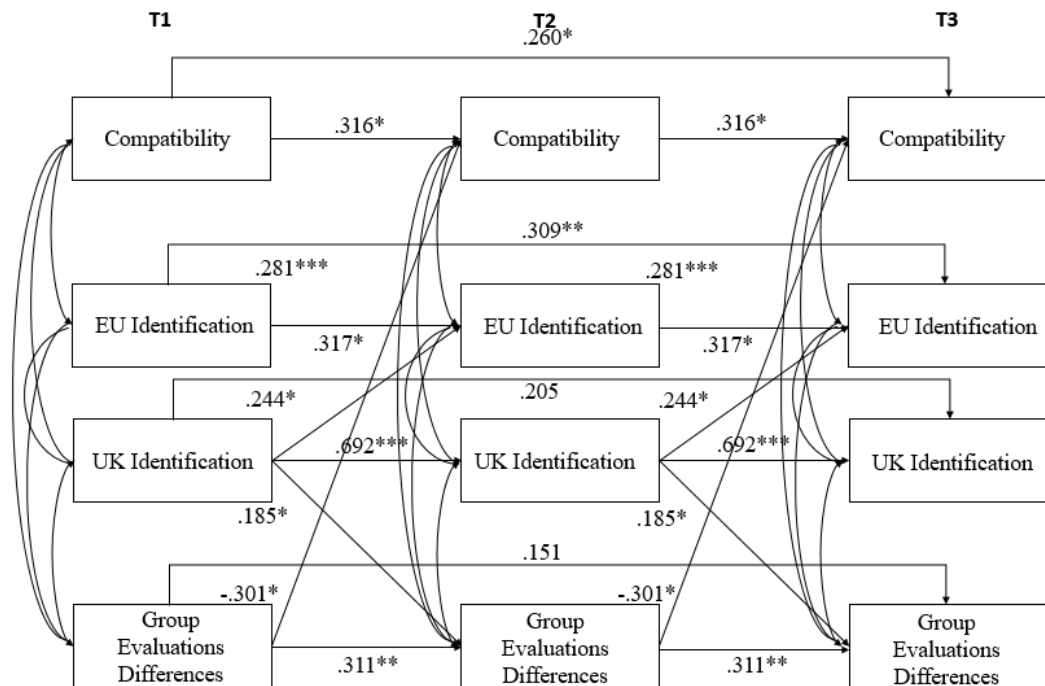


Figure S5. Full longitudinal bidirectional model with difference in group evaluations as the outcome variable. * $p < .05$, ** $p < .01$, *** $p < .001$. Straight lines in the figure indicate significant relationships; lines are omitted when relationships did not reach the $p < .05$ level.

Remainers

We similarly examined longitudinal relationships between group compatibility and difference in group evaluations across the three time points, as well as the mediation of these relationships by both UK identification and EU identification for Remainers. The model showed reasonably good fit to the data, $\chi^2(28) = 64.06$, $p < .001$, CFI = .962, RMSEA = .100, SRMR = .060²⁰ (see Figure S5). Perceived group compatibility did not predict difference in group evaluations at subsequent time points ($b = 0.03$, $p = .561$). In addition, group compatibility did not predict identification with EU citizens ($b = 0.07$, $p = .264$). In line with the cross-sectional analysis, perceived

²⁰ According to the goodness-of-fit indices of Hu & Bentler (1999), CFI value $> .90$ indicates good fit, RMSEA value $< .08$ indicates good fit, SRMR value $< .08$ indicates good fit.

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group compatibility did not predict identification with UK citizens ($b = 0.03, p = .645$), but identification with UK citizens did predict higher difference in group evaluations at subsequent time points ($b = 0.11, p = .016$) as well as reduced perceived group compatibility ($b = -0.17, p = .002$). Finally, identification with EU citizens predicted perceived compatibility of EU citizens and UK citizens at subsequent time points ($b = 0.27, p < .001$).

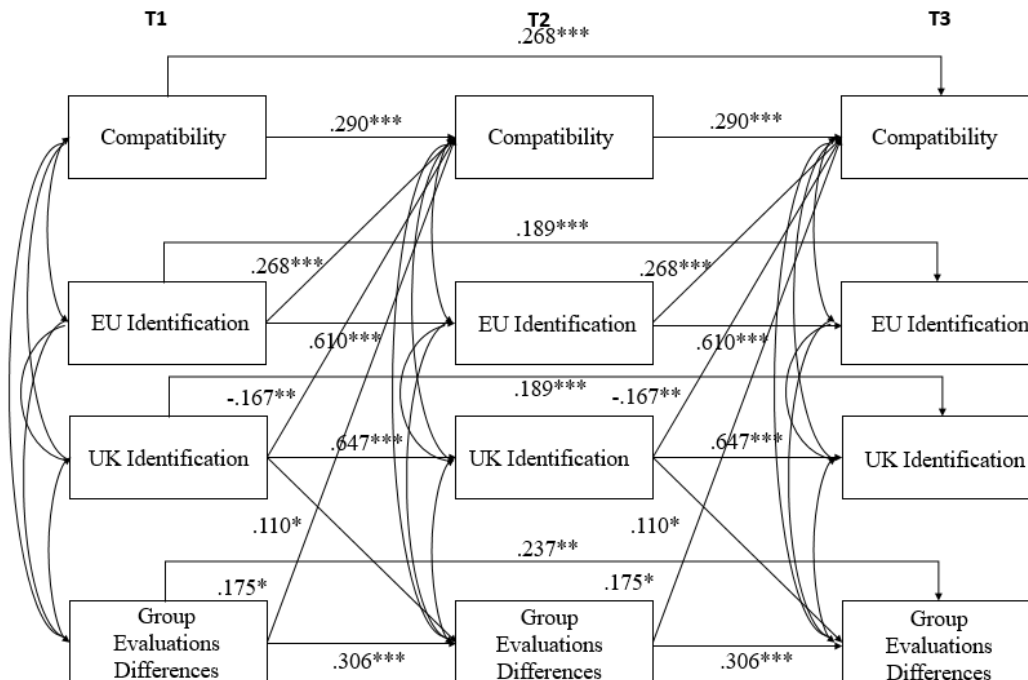


Figure S6. Full longitudinal bidirectional model with difference in group evaluations as the outcome variable. * $p < .05$, ** $p < .01$, *** $p < .001$. Straight lines in the figure indicate significant relationships; lines are omitted when relationships did not reach the $p < .05$ level.

There was no significant difference in model fit between Leavers and Remainers in the cross-lagged panel analysis with Group Evaluations Differences as the outcome variable, $\chi^2(4) = 0.80, p = .939$.

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In the model in Figure S5 (Leavers) we see a negative effect of differences in group evaluations on perceived compatibility at subsequent time points while in the model in Figure S6 (Remainers) we see a positive effect of differences in group evaluations on perceived compatibility as subsequent time points. This can be explained by the fact that Leavers overall evaluate UK citizens more positively than EU citizens and because difference scores were calculated by subtracting evaluation scores of EU citizens from UK citizens a higher positive score indicates greater UK favouritism. When Leavers perceive the groups as being more compatible, they evaluate the two groups more similarly resulting in a reduced difference in evaluation score. The opposite occurs for Remainers. Overall, Remainers report negative difference in evaluation scores indicating greater EU favouritism. When Remainers perceive the two groups as more compatible, they evaluate the two groups more similarly resulting in an increase in difference in evaluation score. Therefore, in both cases perceived compatibility is predicted by more similar evaluations of both groups at the previous time point.

Behavioural intentions difference

Leavers

We similarly examined longitudinal relationships between group compatibility and difference in behavioural intentions across the three time points, as well as the mediation of these relationships by both UK identification and EU identification for Leavers. The model showed reasonably good fit to the data, $\chi^2(28) = 34.78, p = .176$, CFI = .978, RMSEA = .076, SRMR = .077²¹ (see Figure S7). Perceived group compatibility did not predict difference in behavioural intentions at subsequent time points ($b = -0.20, p = .065$). In addition, group compatibility did not predict identification with EU citizens ($b = 0.06, p = .578$). In line with the cross-sectional analysis, perceived group compatibility did not predict identification with UK citizens ($b = -0.08, p = .425$). Neither did identification with UK citizens predict higher difference in behavioural intentions at subsequent time points ($b = 0.02, p = .828$). Identification with EU citizens did not predict perceived compatibility of EU citizens and UK citizens at subsequent time points ($b = 0.04, p = .802$).

²¹ According to the goodness-of-fit indices of Hu & Bentler (1999), CFI value > .90 indicates good fit, RMSEA value < .08 indicates good fit, SRMR value < .08 indicates good fit.

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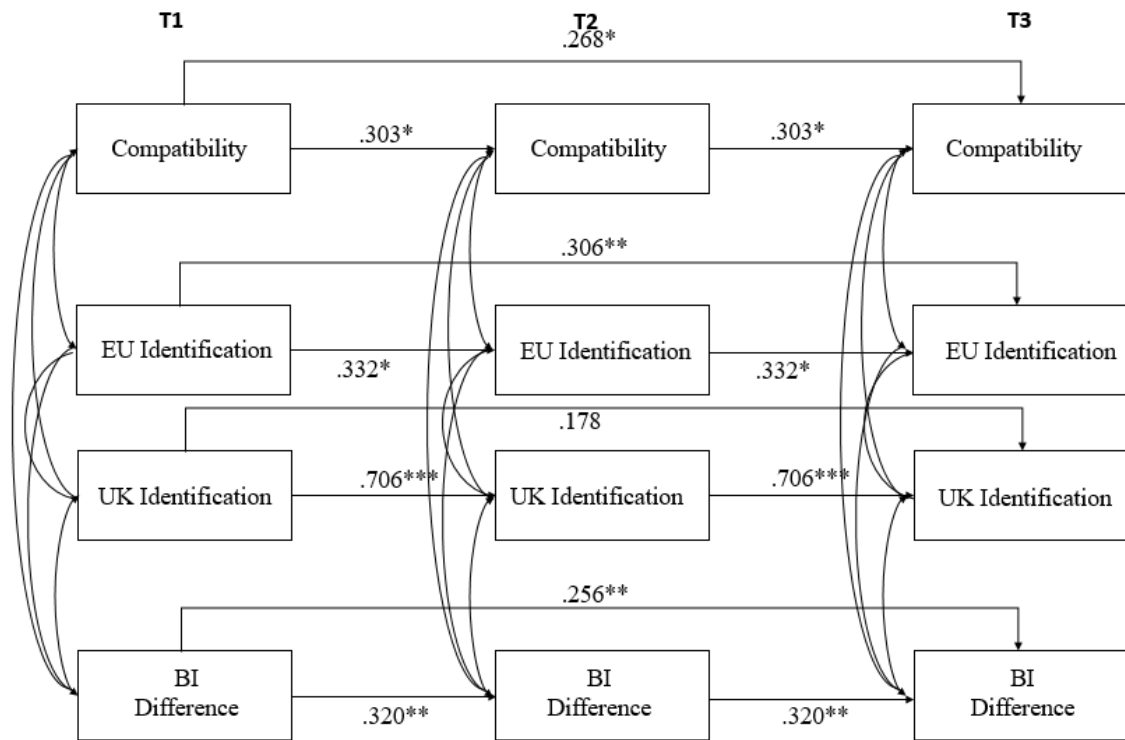


Figure S7. Full longitudinal bidirectional model with difference in behavioural intentions as the outcome variable. * $p < .05$, ** $p < .01$, *** $p < .001$. Straight lines in the figure indicate significant relationships; lines are omitted when relationships did not reach the $p < .05$ level.

Remainers

We similarly examined longitudinal relationships between group compatibility and difference in behavioural intentions across the three time points, as well as the mediation of these relationships by both UK identification and EU identification for Remainers. The model showed reasonably good fit to the data, $\chi^2(28) = 71.62$, $p < .001$, CFI = .963, RMSEA = .109, SRMR = .070²² (see Figure S8). Perceived group compatibility did not predict difference in behavioural intentions at subsequent time points ($b = -0.02$, $p = .625$). In addition, group compatibility did not predict

²² According to the goodness-of-fit indices of Hu & Bentler (1999), CFI value $> .90$ indicates good fit, RMSEA value $< .08$ indicates good fit, SRMR value $< .08$ indicates good fit.

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identification with EU citizens ($b = 0.03, p = .543$). In line with the cross-sectional analysis, perceived group compatibility did not predict identification with UK citizens ($b = 0.02, p = .729$), but identification with UK citizens did predict higher difference in behavioural intentions at subsequent time points ($b = 0.15, p = .010$) as well as reduced group compatibility at subsequent time points ($b = -0.15, p = .036$). Finally, identification with EU citizens predicted perceived compatibility of EU citizens and UK citizens at subsequent time points ($b = 0.27, p = .001$).

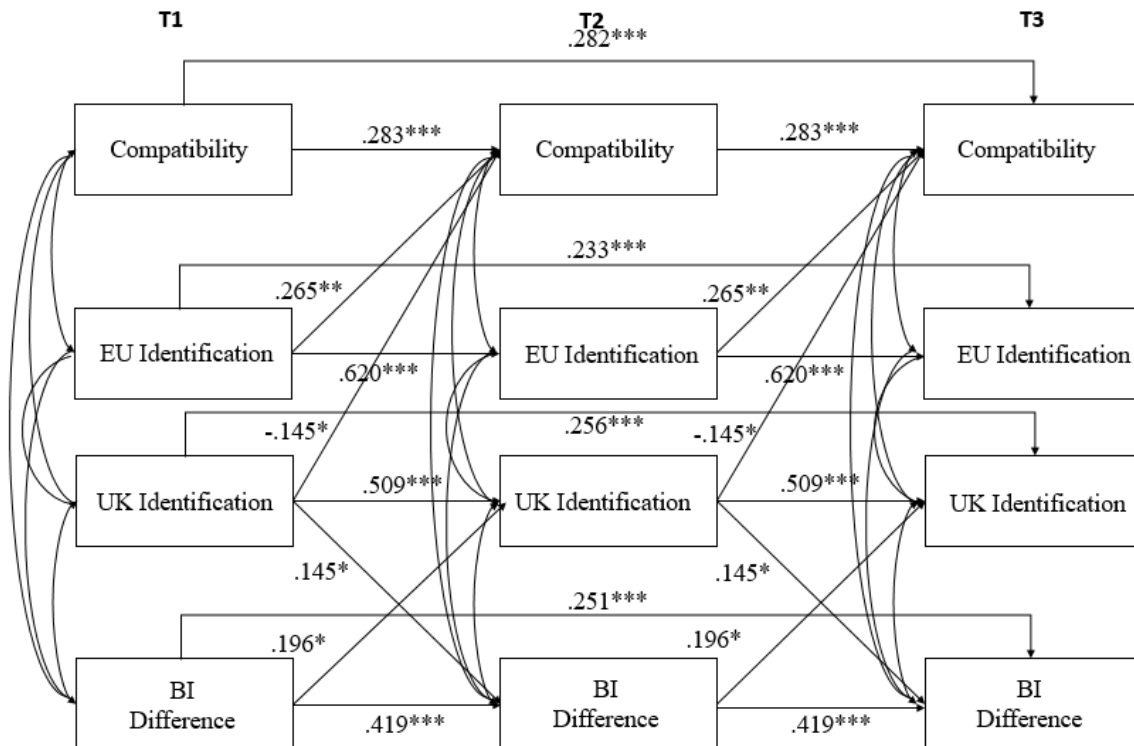


Figure S8. Full longitudinal bidirectional model with difference in behavioural intentions as the outcome variable. * $p < .05$, ** $p < .01$, *** $p < .001$. Straight lines in the figure indicate significant relationships; lines are omitted when relationships did not reach the $p < .05$ level.

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There was no significant difference in model fit between Leavers and Remainers in the cross-lagged panel analysis with Behavioural Intentions Difference as the outcome variable, $\chi^2(4) = 0.82, p = .935$.

Removing those who indicated that they would not lose EU citizenship

We performed each piece of analysis conducted in the main paper removing those participants who indicated that they would not lose their EU citizenship following Brexit.

At Time 1, perceived group compatibility was negatively correlated with both differences in group evaluation and differences in behavioural intentions (i.e. the higher the perceived compatibility the less preference shown towards UK citizens relative to EU citizens). Group compatibility also was correlated with EU identification but not UK identification.

Table S7. *Correlations, means and standard deviations at Time 1 in the subsample of those who indicated that they would lose EU citizenship following Brexit (n = 225).*

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Compatibility	5.16	1.25		.000	.569***	-.242***	-.329***
2. UK Identification	5.86	0.92			.125	.528***	.633***
3. EU Identification	3.75	1.28				-.304***	-.458***
4. Group Evaluations Difference	0.11	0.80					.662***
5. Behavioural Intentions Difference	0.81	1.17					

* $p < .05$, ** $p < .01$, *** $p < .001$.

Mediation Analysis

Differences in Group Evaluations (n = 225)

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that the indirect effect through identification with EU citizens, controlling for identification with UK citizens, was significant ($b = -0.15, SE = .03, 95\% CI [-0.22 to -$

0.08]). Despite the positive relationship of identification with UK citizens and differences in group evaluations, perceived compatibility was not associated with identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant ($b = 0.00$, $SE = .03$, 95% CI [-0.06 to 0.06]; see Figure S9 for all effects associated with this model).

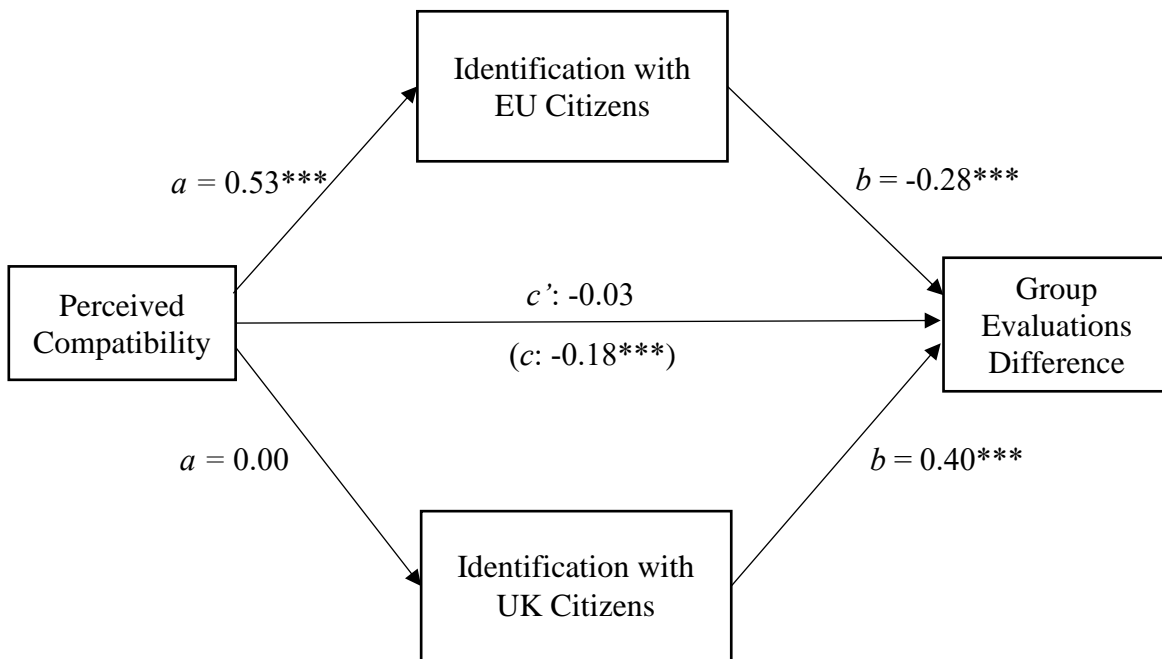


Figure S9: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in group evaluations in the subsample of those who indicated that they would not lose their EU citizenship following Brexit. * $p < .05$, ** $p < .01$, *** $p < .001$.

Difference in Behavioural Intentions – ($n = 225$).

The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that the indirect effect through identification with EU citizens, controlling for identification with UK citizens, was significant ($b = -0.29$, $SE = 0.05$, 95% CI [-.38 to -.20]). Despite the positive relationship of identification with UK citizens and differences in behavioural intentions, perceived compatibility was not associated with

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identification with UK citizens, and the indirect effect through identification with UK citizens, was not significant ($b = 0.00$, $SE = 0.05$, 95% CI [-0.09 to 0.10]; see Figure S10 for all effects associated with this model).

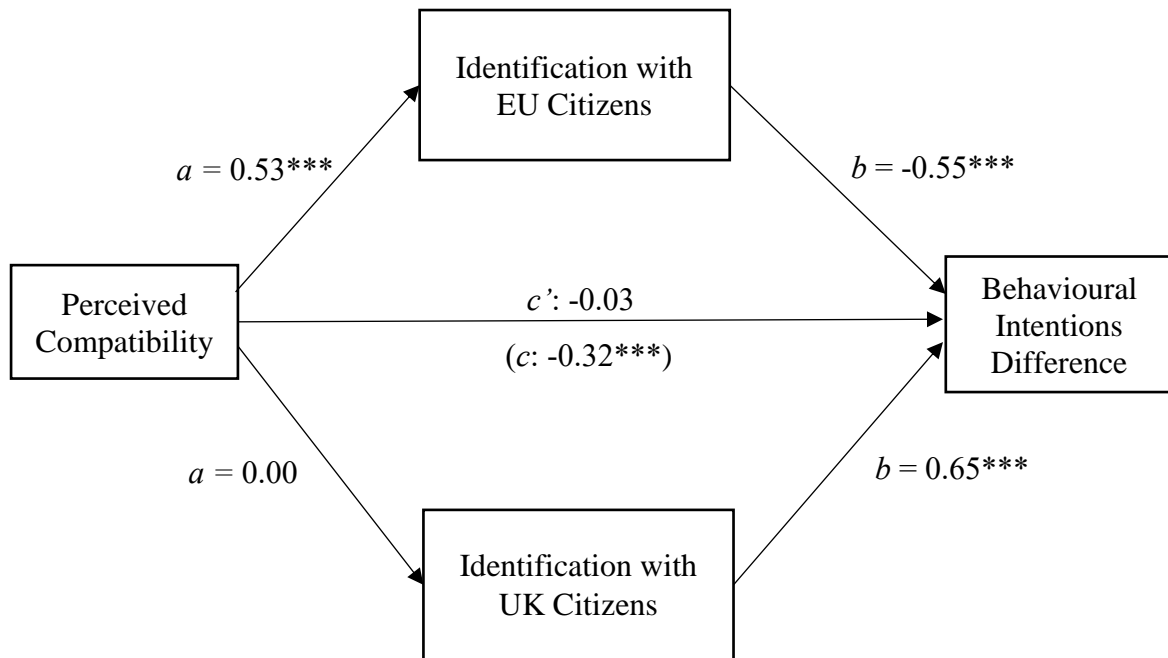


Figure S10: The mediating effect of identification with EU citizens and identification with UK citizens on the relationship between perceived group compatibility and differences in behavioural intentions in the subsample of those who indicated that they would not lose their EU citizenship following Brexit. * $p < .05$, ** $p < .01$, *** $p < .001$.

Testing of additional hypotheses focusing on absolute difference scores in responses towards UK citizens and EU citizens

In line with additional preregistrations for cross-sectional analysis for Time 1 and Time 2 of data collection

(https://osf.io/gfd7k/?view_only=6b38761a0ff54065a355482cb446d0d6 ;

https://osf.io/7n2z8/?view_only=0751325ee788480490afea3c61c23137), we tested

whether discrepancy in group identification mediated the relationship between perceived group compatibility and discrepancies in group attitudes. Discrepancies refer to the absolute difference in a) evaluations and b) behavioural intentions of UK citizens and EU citizens. The larger the discrepancy the stronger the preference for one group over the other.

a) Evaluations

The first mediation model for this additional analysis included the absolute difference in group evaluations as the criterion, perceived group compatibility as the predictor and the absolute difference in identification with both groups as the mediator. Results from this analysis indicated that perceived group compatibility was negatively associated with group evaluation bias through its relationship with discrepancy in identification with both groups. The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that the indirect effects through identification discrepancy were significant at all three time points (Time 1: $b = -0.10$, $SE = 0.02$, $CI [-0.15, -0.06]$; Time 2: $b = -0.09$, $SE = 0.02$, $CI [-0.14, -0.05]$; Time 3: $b = -0.05$, $SE = 0.01$, $CI [-0.08, -0.02]$; see Figure S9 for all effects associated with this model).

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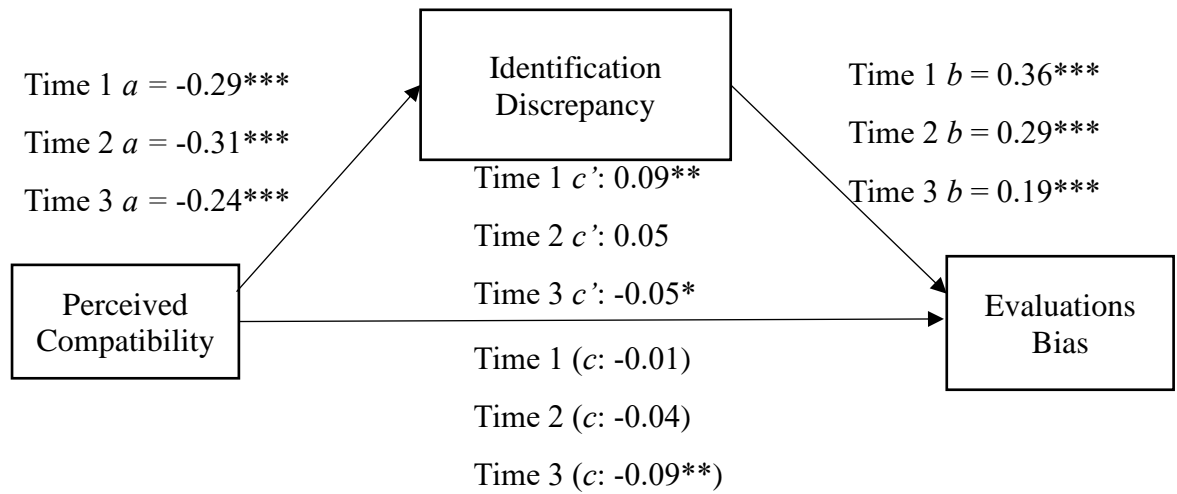


Figure S9: The mediating effect of discrepancy in identification with EU citizens and UK citizens on the relationship between perceived group compatibility and evaluations bias. * $p < .05$, ** $p < .01$, *** $p < .001$.

b) Behavioural Intentions

The first mediation model for this additional analysis included the absolute difference in behavioural intentions towards both groups as the criterion, perceived group compatibility as the predictor and the absolute difference in identification with both groups as the mediator. Results from this analysis indicated that perceived group compatibility was negatively associated with behavioural intentions bias through its relationship with discrepancy in identification with both groups. The 95% bias-corrected confidence interval based on 10,000 bootstrap samples indicated that the indirect effects through identification discrepancy were significant at all three time points (Time 1: $b = -0.16$, $SE = 0.02$, $CI [-0.23, -0.10]$; Time 2: $b = -0.17$, $SE = 0.04$, $CI [-0.24, -0.10]$; Time 3: $b = -0.12$, $SE = 0.03$, $CI [-0.18, -0.07]$; see Figure S10 for all effects associated with this model).

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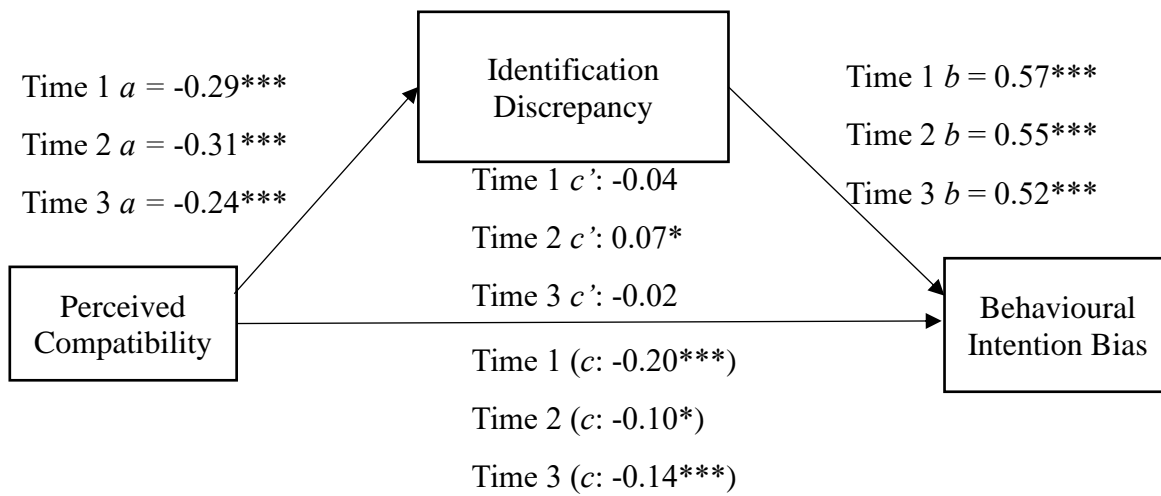


Figure S10: The mediating effect of discrepancy in identification with EU citizens and UK citizens on the relationship between perceived group compatibility and intergroup bias in behavioural intention. * $p < .05$, ** $p < .01$, *** $p < .001$.

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Table S8. Correlation table including all measured variables from each of the three time points.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Comp T1		.548	-.078	.354	.095	.453	.007	.549	.463	-.113	.250	.032	.383	-.031	.580	.421	-.204	.208	.047	.370	-.094
2. EU ID T1			.071	.531	.162	.707	.100	.578	.735	-.071	.430	.108	.592	.055	.557	.714	-.093	.406	.117	.579	.034
3. UK ID T1				.049	.520	.052	.734	-.093	-.092	.685	-.008	.438	-.093	.518	-.156	-.050	.732	.052	.388	-.066	.581
4. EU GE T1					.526	.580	.127	.418	.495	.008	.633	.334	.458	.113	.441	.477	.052	.597	.356	.498	.070
5. UK GE T1						.206	.513	.105	.128	.412	.315	.640	.108	.370	.183	.220	.488	.370	.618	.179	.389
6. EU BI T1							.312	.499	.593	-.010	.405	.152	.658	.178	.473	.548	-.001	.379	.139	.696	.133
7. UK BI T1								.017	.087	.582	.090	.461	.180	.681	-.028	.056	.612	.126	.404	.169	.661
8. Comp T2									.657	-.113	.430	.090	.499	-.024	.587	.531	-.147	.267	.091	.401	-.116
9. EU ID T2										.058	.537	.172	.730	.127	.548	.724	-.084	.382	.148	.578	.030
10. UK ID T2											.051	.565	.009	.671	-.129	.064	.814	.113	.496	.020	.621
11. EU GE T2												.509	.499	.168	.425	.438	.025	.574	.313	.426	.055
12. UK GE T2													.198	.512	.099	.156	.504	.360	.588	.127	.367
13. EU BI T2														.358	.443	.602	-.029	.341	.071	.700	.119
14. UK BI T2															-.001	.138	.650	.170	.424	.207	.691
15. Comp T3																.613	-.062	.402	.265	.495	.087
16. EU ID T3																	.135	.511	.293	.711	.171
17. UK ID T3																		.163	.553	.096	.705
18. EU GE T3																			.572	.533	.223
19. UK GE T3																				.249	.563
20. EU BI T3																					.324
21. UK BI T3																					

Figures in bold indicate relationships that are significant at the $p < .05$ level. Comp = Perceived Compatibility, ID = Identification, GE =

Group Evaluations, BI = Behavioural Intention

Study 3 Supplemental Material

Northern Irish Self-Categorization and Perceived Compatibility of British and Irish in Northern Ireland

Independent sample *t*-tests showed that there was no significant difference between participants who self-categorised as Northern Irish and those who did not in terms of how compatible they perceived Irish people and British people to be at either Time 1 (Northern Irish $M = 3.30$, $SD = 1.34$; non-Northern Irish $M = 3.16$, $SD = 1.33$), $t(602) = 1.25$, $p = .213$, or at Time 2 (Northern Irish $M = 3.33$, $SD = 1.32$; non-Northern Irish $M = 3.24$, $SD = 1.42$), $t(348) = 0.60$, $p = .552$.

EU Self-Categorization and Perceived Compatibility of British and Irish in Northern Ireland

Independent sample *t*-tests showed that there was no significant difference between participants who self-categorised as having EU nationality and those who did not in terms of how compatible they perceived Irish people and British people to be at Time 1 (EU $M = 3.25$, $SD = 1.47$; non-EU $M = 3.23$, $SD = 1.31$), $t(602) = 1.51$, $p = .880$, but at Time 2 those who self-categorised as having EU nationality perceived the groups as higher in compatibility (EU $M = 3.67$, $SD = 1.52$; non-EU $M = 3.21$, $SD = 1.33$), $t(348) = -2.32$, $p = .021$, $d = -0.34$.

Moderations with Perceived Group Compatibility as Outcome Variable

We utilised moderation analysis using PROCESS linear regression model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish identification and group compatibility by British identification. The interaction of Irish identification \times British identification was statistically significant at both time points [Time 1: $b = 0.18$, $SE = .03$, $t(600) = 5.69$, $p < .001$; Time 2: $b = 0.10$, $SE = .04$, $t(346)$

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= 2.72, $p = .007$]. When British identification is higher, Irish identification is associated with higher perceived compatibility of the two groups.

We utilised moderation analysis using PROCESS linear regression model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish trait ratings and group compatibility by British trait ratings. The interaction of Irish trait ratings \times British trait ratings was statistically significant at both time points [Time 1: $b = 0.28$, $SE = .06$, $t(600) = 4.95$, $p < .001$; Time 2: $b = 0.13$, $SE = .06$, $t(346) = 2.09$, $p = .037$]. When British trait ratings are higher, Irish trait ratings are associated with higher perceived compatibility of the two groups.

We utilised moderation analysis using PROCESS linear regression model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish behavioural intentions and group compatibility by British behavioural intentions. The interaction of Irish behavioural intentions \times British behavioural intentions was statistically significant at both time points [Time 1: $b = 0.17$, $SE = .03$, $t(600) = 4.97$, $p < .001$; Time 2: $b = 0.17$, $SE = .04$, $t(346) = 4.52$, $p < .001$]. When British behavioural intentions are higher, Irish behavioural intentions are associated with higher perceived compatibility of the two groups.

These additional moderation analyses support our theoretical framework that multiple group identification and intergroup attitudes follow balance principles.

Moderation Analysis with an Alternative Five Item Compatibility Measure

In Wave 1 (but not in Wave 2) we added two items to the survey, one on perceived group similarities and the other one on how complementary the groups are perceived to be (“I feel there are more similarities than differences between the groups British and Irish”; I feel that the groups Irish and British are complementary”). To test

whether results replicate with an alternative measure of group compatibility that included these two items in addition to our original three compatibility items we utilised moderation analysis using PROCESS model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish identification and British identification by that five item measure of group compatibility. The hypothesised interaction of Irish identification \times group compatibility was statistically significant [$b = 0.19$, $SE = .04$, $t(347) = 4.71$, $p < .001$]. When British identification is higher, Irish identification is associated with higher perceived compatibility of the two groups.

We utilised moderation analysis using PROCESS linear regression model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish trait ratings and British trait ratings by a five item measure of group compatibility. The hypothesised interaction of Irish trait ratings \times group compatibility was statistically significant [$b = 0.26$, $SE = .03$, $t(347) = 7.56$, $p < .001$]. When British trait ratings are higher, Irish trait ratings are associated with higher perceived compatibility of the two groups.

We utilised moderation analysis using PROCESS linear regression model 1 for SPSS (Hayes, 2017) to examine the moderation of the relationship between Irish behavioural intentions and British behavioural intentions by a five item measure of group compatibility. The hypothesised interaction of Irish behavioural intentions \times group compatibility was statistically significant [$b = 0.31$, $SE = .04$, $t(347) = 8.15$, $p < .001$]. When British behavioural intentions are higher, Irish behavioural intentions are associated with higher perceived compatibility of the two groups.

These additional analyses demonstrate that our main findings reported in the main text replicate with this alternative measure of group compatibility.

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Means and Standard Deviations of Change in Each Score from Time 1 to Time 2

The table below shows mean scores calculated by subtracting mean scores at Time 2 from mean scores at Time 1, indicating that there was little change in the scores between time points.

Change over time	<i>M</i>	<i>SD</i>
Compatibility	-0.04	1.21
British ID	-0.01	1
Irish ID	0.09	0.9
British TR	0.02	0.79
Irish TR	0.05	0.74
British BI	0.07	1.02
Irish BI	0.10	0.91

ID = Identification, TR = Trait Ratings, BI = Behavioural Intentions