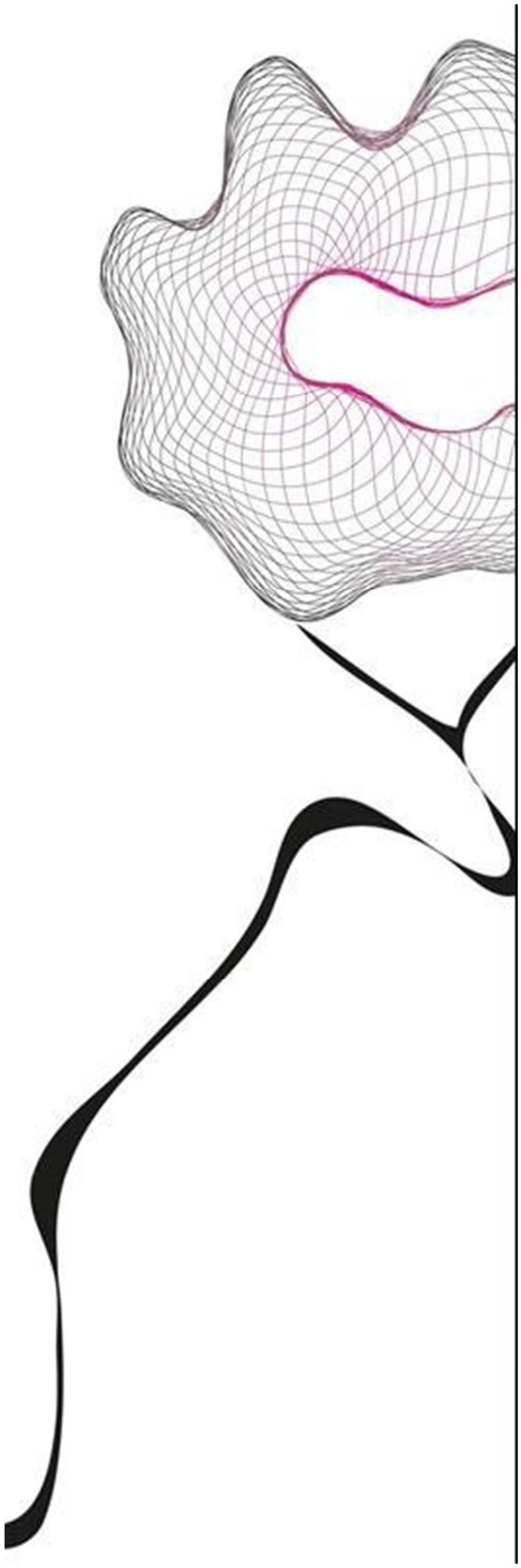

Bachelor Thesis

A Comparison of Nested and Cross-Cutting Common Ingroup Identities and the Role of Ingroup Projection, Distinctiveness and Intergroup Threat on Outgroup Attitudes

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June 2017

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Abstract

Background: Many studies testing the Common Ingroup Identity Model and the Ingroup Projection Model led to opposite conclusions concerning the impact of common ingroup identities (CIIs) on outgroup attitudes. However, these studies did not manipulate the type of CII and did not make a differentiation between nested and cross-cutting CIIs.

Objective: This study aimed to compare the influence of nested and cross-cutting CIIs on outgroup attitudes. Additionally, the mediators - ingroup projection, distinctiveness threat and intergroup threat - explaining the relationship between CIIs and outgroup attitudes were examined. Thereby, it was hypothesised that cross-cutting CIIs would have a more positive influence on outgroup attitudes than nested CIIs.

Method: An online experiment, manipulating the type of CII and measuring both outgroup attitudes and the three above-mentioned underlying processes, was conducted among 307 participants.

Results: Results revealed no significant differences between nested and cross-cutting CIIs and their effect on outgroup attitudes. However, contrary to expectations, participants in the cross-cutting CII condition yielded more ingroup projection than in the nested CII condition.

Conclusion: Nevertheless, the current study provides a first basic step of important research in the area of nested and cross-cutting CIIs. Future research should include a control condition and should ensure both a higher identification with subgroups and conflicts between subgroups, in order to learn more about the underlying processes through which a CII improves outgroup attitudes.

***Keywords*:** Common Ingroup Identity Model, Nested common identity, Cross-cutting common identity, Ingroup Projection Model, Prototypicality, Need for distinctiveness, Distinctiveness threat, Intergroup threat, Outgroup attitudes, Intergroup bias

Samenvatting (Dutch Abstract)

Achtergrond: Onderzoek naar het Common Ingroup Identity Model en het Ingroup Projection Model hebben geleid tot tegengestelde conclusies wat betreft de invloed van common ingroup identiteiten (CIIen) op outgroup attitudes. Deze studies hebben echter niet het type CII gemanipuleerd en hebben geen onderscheid gemaakt tussen nested en cross-cutting CIIen.

Doel: Deze studie heeft als doel de invloed van nested en cross-cutting CIIen op outgroup attitudes te vergelijken. Daarnaast werden de mediatoren – ingroup projection, distinctiveness threat and intergroup threat - die de relatie tussen CIIen en outgroup attitudes verklaren, onderzocht. Daarbij werd verondersteld dat cross-cutting CIIen een positiever invloed zouden hebben op outgroup attitudes dan nested CIIen.

Methode: Een online experiment dat het type CII manipuleert en zowel outgroup attitudes als de drie bovengenoemde onderliggende processen meet, werd uitgevoerd onder 307 deelnemers.

Resultaten: Resultaten gaven geen significante verschillen tussen nested en cross-cutting CIIen en hun effect op outgroup attitudes. In tegenstelling tot verwachtingen leverden de deelnemers in de cross-cutting CII-conditie echter meer ingroup projection op dan in de nested CII-conditie.

Conclusie: Niettemin biedt deze studie een eerste fundamentele stap van belangrijk onderzoek op het gebied van nested en cross-cutting CIIen. Vervolgonderzoek zou een controle conditie moeten bevatten en zowel een hogere identificatie met subgroepen als conflicten tussen beide subgroepen bevorderen, om meer te kunnen leren over de onderliggende processen waardoor een CII, outgroup attitudes kan verbeteren.

A Comparison of Nested and Cross-Cutting Common Ingroup Identities and the Role of Ingroup Projection, Distinctiveness and Intergroup Threat on Outgroup Attitudes

Many western societies are characterised by the coexistence of various nationalities, languages, religions, cultures and, ethnic groups. This multiculturalism enables people with different world views and life concepts to live together within one population -and thereby, in the ideal case- to mutually enrich each other. However, this diversity not always gets tolerated and thus also has negative aspects. Racism, intergroup conflicts and biases are persistent problems with which social psychology regularly deals. At the core of these processes stands the *social categorisation* into 'us' versus 'them' – a basic distinction between the ingroup and the outgroup, whereby the ingroup is tended to be favoured over relevant outgroups (*ingroup favouritism*; Tajfel & Turner, 1979).

One promising approach targeting this process is the *Common Ingroup Identity Model (CIIM)*, which aims to re-categorise groups into one, higher-order common ingroup – a more encompassing super-ordinate '*we*' instead of an '*us*' versus '*them*' differentiation with two separate groups. Through this approach, the categorisation of ingroup members gets redefined and attitudes toward former members of the outgroup are empirically proven to become more positive by means of the above-mentioned pro-ingroup bias (Gaertner & Dovidio, 2000).

In contrast, the *Ingroup Projection Model (IPM)* states, that common ingroup identities provide the background for comparisons between groups, which depend upon the perceived prototypicality (the ideal group member) of the ingroup in contrast to the outgroup. This results in *ingroup projection*: "The perception, or claim, of the ingroup's greater relative prototypicality for the superordinate group" than the outgroup (Wenzel, Mummendey, & Waldzus, 2007, p.337). In turn, this leads to more negative attitudes towards the outgroup.

Thus, there exist opposite conclusions concerning the impact of common ingroup

identities on outgroup attitudes. Whereas the CIIM claims that ingroup members hold more positive outgroup attitudes because of the re-categorisation into common identities; the IPM states that outgroup attitudes become more negative, because of the comparison among subgroup members.

One possible explanation for these contradicting findings may be because of the two different types of common ingroup identities (CIIs) – *nested* and *cross-cutting* common ingroup identities. A nested CII implies two subgroups that are completely interlaced within a superordinate identity. A cross-cutting CII on the contrary, includes two subgroups which are not fully nested with one superordinate identity; rather the CII is more like an alternative, cross-cutting categorisation (Wenzel et al., 2007; see below for concrete examples).

However, many studies in this area have come to different conclusions; probably because they have measured the influence of CIIs in general on outgroup attitudes, without manipulating the type of CII and making a differentiation between nested and cross-cutting CIIs. There is no empirical research conducted into these two models and their impact on outgroup attitudes while differentiating between the two types CII.

Therefore, the aim of the current research is to measure the influence of common ingroup identities on outgroup attitudes by comparing the two different types of CII (nested and cross-cutting). Additionally, some of the underlying processes explaining the relationship between the two types of CII and outgroup attitudes will be examined.

Nested versus Cross-Cutting Common Ingroup Identities

Nested common identities consist of two subgroups which are completely nested within one superordinate category. In this case, the common ingroup identity is truly inclusive and serves for a relevant comparison background for the two subgroups (e.g., German and Dutch people in the European Union; see Figure 1). In contrast, a cross-cutting common ingroup identity includes a CII which is not fully inclusive of the two subgroups, but rather is

more like an alternative, cross-cutting categorisation. This means that only one specific part of the two subgroups (rather than all members of the two subgroups as it is the case in nested CII) provides a basis for a common ingroup identity. In this case, the CII cannot serve as a comparison background, because it is irrelevant and provides an identity that is alternative and only shared in a given context (e.g., German and Dutch students at the University of Twente; see Figure 1; Wenzel et al., 2007).

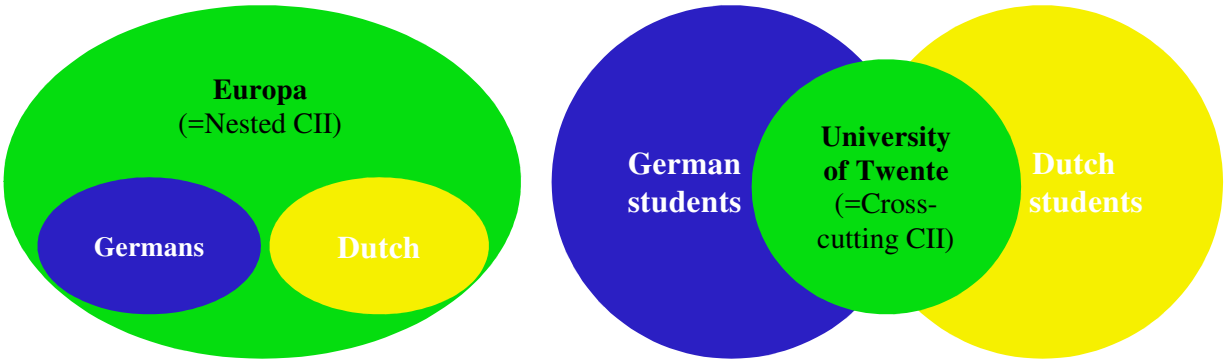

Figure 1. Graphical representation of the two types common ingroup identity (left: Nested common ingroup identity; right: Cross-cutting common ingroup identity).

Common Ingroup Identity Model (CIIM)

The Common Ingroup Identity Model (CIIM; Gaertner & Dovidio, 2000) is based on the *Self-Categorisation Theory* (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), which states, that individuals make use of categories for themselves to get a sense of self; as well as for other groups in order to structure and give meaning to their social world. The process of self-categorisation leads to an accentuation of similarities within the self-category (the ingroup) and an accentuation of differences from other relevant categories (outgroups).

However, social categorisation is a dynamic process; people have a variety of different group identities and are able to focus on different social categories in a certain context. In view of how people think about ingroup and outgroup members the adaptability of social categorisations is an important aspect, because attempts to counteract intergroup biases can be directed toward altering the nature of social categorisation (Dovidio, Gaertner, & Saguy,

2008).

The CIIM refers exactly to this dynamic nature of social categorisation. It emphasises the process of *re-categorisation*, whereby members of distinct groups are motivated to recognise themselves as one, more inclusive CII rather than as two different, separated groups. Through redefining of who is perceived as an ingroup member, attitudes toward former members of the outgroup become more positive and intergroup bias is reduced (Gaertner & Dovidio, 2000). Thus, the CIIM serves as an effective tool to reduce intergroup bias and to improve outgroup attitudes.

With regard to the differentiation between nested and cross-cutting CIIs in this study it is expected, that the above-mentioned ingroup favouritism is more likely to occur in nested than in cross-cutting CIIs. Because of the fact that, people strive to get a sense of self and an all-encompassing, nested group identification (e.g., being European) is an inclusive category, group members may tend to de-categorise themselves back into their former subgroups, whenever they have difficulty to identify themselves as members of the broader nested CII. Referring to the previous example, Dutch and German people in the European Union could fall back to their subgroups for instance, as they think about their food culture, their economic power or any other context where differences can occur. The dynamic nature of social categories can hereby promote the switch into former subgroups, so that ingroup favouritism can take place further and outgroup attitudes thus become less positive.

In a cross-cutting CII in contrast, it is easier to identify with the common identity, because it represents only one, less broad part of the identity which is salient in a certain context. Group members can therefore easily switch to other group identities when they are in another environment, but it is expected that they stay stable in a fixed context. For instance, German and Dutch students at the University of Twente can identify themselves as members of different sports clubs in their free time, independent of their identity as a university student,

but in the context of the university they more likely to stay stable in their CII as a student of the particular university. Thus, a cross-cutting CII, which promotes a stable CII in a given context, is expected to lead to more positive outgroup attitudes. Accordingly, the first hypothesis (main effect) of the current study is that cross-cutting CIIs will result in more positive outgroup attitudes than nested CIIs (*Hypothesis 1*).

Thus, in this study there is one main effect and several reasons why this effect is expected. In the following four mediating variables will be explained, starting with the Ingroup Projection Model (for an overview of all predicted effects see Figure 2).

Ingroup Projection Model (IPM)

The Ingroup Projection Model (Mummendey & Wenzel, 1999) states that a relevant CII provides dimensions and norms for comparisons between ingroup and outgroup members. It serves as a frame of reference for the evaluation of intergroup differences. Therefore, groups are able to gain positive value or status when they are considered to be prototypical for the CII, which is also positively valued; and in contrast, are negatively valued when they deviate from the prototype attributed to the CII. A prototype hereby can be seen as an ideal member of a category, who owns attributes that are stereotypical and distinctive of the ingroup and therefore, are normative and positive (Wenzel et al., 2007).

Thus, the evaluation of ingroup and outgroup is dependent on the extent that they are seen as prototypical for the relevant superordinate category that includes them both. For example, Dutch and German people are likely to compare themselves in terms of their common identity as Europeans. They will compare themselves on dimensions that are used to define Europeans and their evaluation of ingroup and outgroup will be based on the extent to which each group represents the prototypical European (Wenzel et al., 2007).

According to Social Identity Theory (Tajfel & Turner, 1979) the ingroup is generally positively valued over the outgroup, because this contributes to a positive social

identity. As this process is transferred to the IPM, group members will tend to perceive their ingroup as more prototypical than the outgroup in order to get a positively valued ingroup. This ingroup projection serves as a differentiation system between ingroup and outgroup. The outgroup in this case is evaluated negatively, because it differs from the norms and dimensions attributed to the superordinate category. These differences are considered as violating and deviant with respect to the superordinate group and thus, are leading to a devaluation of the outgroup (Wenzel et al., 2007).

However, it is not necessarily discriminating if one group claims to be more prototypical than the other group; rather social discrimination comes from a *disagreement between two groups* about their relative prototypicality. Referring to the previous example Germans may have a different view about what it means to be a prototypical European than do Dutch people. Consequently, Germans may believe that Dutch are less prototypical than Dutch themselves think they are, which can lead to negative evaluations between the groups.

As mentioned above the IPM states in opposite to the CIIM that outgroup attitudes should be more negative by re-categorising subgroups into one CII. In this view, sharing a common superordinate identity is not sufficient for the development of positive outgroup attitudes. This phenomenon is explained through the following two processes: Whenever a CII implies intergroup similarity and interchangeability among group members, it leads to more positive outgroup attitudes, but whenever it encourages intergroup differentiation with means of a superordinate prototypicality, CIIs lead to more negative outgroup attitudes (Wenzel et al., 2007).

In the current research, this CII promoting similarity and interchangeability between subgroups is seen as a cross-cutting CII. Because a cross-cutting CII is differentiated from nested ones by the fact that it only represents one alternative part of the subgroup identity, it supports seeing similarities and parallels between the ingroup and relevant outgroups and

therefore makes interchangeability between subgroup members more conceivable. In the example of German and Dutch students the cross-cutting group - being a student of the University of Twente – can be seen as equal prototypical for as well as Dutch as German students. Thus, there is less possibility for both to disagree about their relative prototypicality.

With a nested CII in contrast, interchangeability among subgroup members is less conceivable because it encourages intergroup differences (measured as the relative prototypicality) within the superordinate identity. German and Dutch people in the European Union for example should have more possibilities to compare their prototypicality for the superordinate identity, because both subgroups may not be seen as equally prototypical. This leads to the second hypothesis of the study, which is cross-cutting CIIs will lead to less ingroup projection than nested CIIs (*Hypothesis 2*). Additionally, the effect of cross-cutting versus nested CIIs on outgroup attitudes is mediated by ingroup projection. In other words, cross-cutting CIIs compared to nested CIIs will reduce ingroup projection and therefore will improve outgroup attitudes (*Hypothesis 2a*).

Distinctiveness Threat

Another variable mediating the effect of CII on outgroup attitudes may be the *Need for distinctiveness/Distinctiveness threat*. This is a need for feeling different and unique from others. A CII can be unstable because one single superordinate identity may not satisfy the need for distinctiveness of the members (Brewer, 1991) and therefore, subgroup identities may tend to re-appear over time.

Another important aspect regarding the effect of re-categorisation on intergroup bias is the extent of ingroup identification, which serves as a moderating variable. The more an ingroup member identifies with his group, the greater ingroup favouritism and the more outgroup bias will occur. Replacing a strong subgroup identification with a single superordinate identity can therefore arouse resistance and reactance, especially for minority

group members because they identify themselves more strongly with their subgroup and suffer from the threat of potentially losing their own social identity (Crisp, Stone, & Hall, 2006). One underlying process of this relation is the above-named group members' need for distinctiveness. The *Optimal Distinctiveness Theory* states, that group identification is dependent on the balance between two opposing needs: The *need for differentiation* and the *need for assimilation*. The need for differentiation is the need of group members to distinguish from other groups, whereas the need for assimilation is the need for inclusion and belonging (Brewer, 1991). The extent to which group members satisfy these needs depends on the group's level of 'inclusiveness' (number of persons classified as members of that group (Brewer & Gardner, 1996)). This means, groups that are highly inclusive might satisfy the need for assimilation while dissatisfying the need for differentiation. In contrast, groups that are less inclusive should satisfy the need for differentiation, while dissatisfying the need for assimilation. According to Pickett and Leonardelli (2006) identification should be highest in groups that make it possible to simultaneously satisfy both needs – the need for assimilation and the need for differentiation.

Because of the fact that people strive to have a positive self-image (Tajfel & Turner (1979), which can be achieved by the membership in positively valued groups; bringing together similar groups might arouse a distinctiveness threat, which in turn can increase intergroup conflict. These 'similar groups' can be seen as nested rather than cross-cutting common identities, because they identify themselves fully with the common identity and are thus more similar to each other and therefore more likely will develop a need for distinctiveness towards the outgroup in order to distinguish themselves from them. This means according to the previous example, that the subgroups of German and Dutch people in the European Union should develop a greater distinctiveness threat because their CII is highly inclusive and therefore offers high assimilation, but less potential for differentiation. In

contrast, German and Dutch students at the University of Twente (cross-cutting CII), which represents a less inclusive group will have more opportunities to satisfy their need for differentiation, because their identity consists of more parts than the common identity part. Also the need for assimilation will be satisfied, because in that certain context of being a student of the particular university both groups can develop a sense of belonging and inclusion. In other words, the distinctiveness threat is higher in nested than in cross-cutting CIIs because in the latter one the CII makes it possible to simultaneously satisfy the need for assimilation and the need for differentiation. Based on this assumption, the following hypothesis is that cross-cutting CIIs will lead to less distinctiveness threat than nested CIIs (*Hypothesis 3*). In addition, the effect of cross-cutting versus nested CIIs on outgroup attitudes is mediated by distinctiveness threat. This is, cross-cutting CIIs compared to nested CIIs will reduce distinctiveness threat and therefore will improve outgroup attitudes (*Hypothesis 3a*).

Intergroup Threat

Another possible explanation for the relationship between CII and outgroup attitudes is *intergroup threat*. This is the case, when the actions, beliefs or characteristics of one group challenge the goal attainment or well-being of another group (Riek, Mania, & Gaertner, 2006). Integrated threat can emerge in four different ways (*Integrated Threat Theory* (*ITT*); Stephan & Stephan (2000)). Two important ones are *realistic threat*, containing conflict over power or resources; and *symbolic threat*, containing conflict over norms, values and beliefs. The other two are intergroup anxiety and negative stereotypes over the outgroup. Intergroup threat can lead to negative attitudes and also to avoidant and violent behaviours toward the outgroup (Hewstone, Rubin, & Willis, 2002).

In two studies by Riek, Mania, Gaertner, McDonald, and Lamoreaux (2010) intergroup threat (measured as realistic and symbolic threat) clearly negatively mediated the

relationship from CII on outgroup attitudes. However, less is known over the difference between the two types of CII and their impact on outgroup attitudes mediated by intergroup threat. Because of the fact, that intergroup threat occurs whenever beliefs, values and goal-attainment of two subgroups are incompatible with each other, it is assumed that members of a cross-cutting CII will have more positive attitudes towards the outgroup than nested CII members. In cross-cutting CIIs the focus is shifted to similarities between groups, whereas in nested CIIs it is shifted on differences, so that incompatible beliefs, values and goals between groups are more likely to be detected. Consistent with this assumption, the last hypothesis of this study is that cross-cutting CIIs will lead to less intergroup threat than nested CIIs (*Hypothesis 4*). Additionally, the effect of cross-cutting versus nested CIIs on outgroup attitudes is mediated by intergroup threat. Thus, cross-cutting CIIs compared to nested CIIs will reduce intergroup threat and therefore will improve outgroup attitudes (*Hypothesis 4a*).

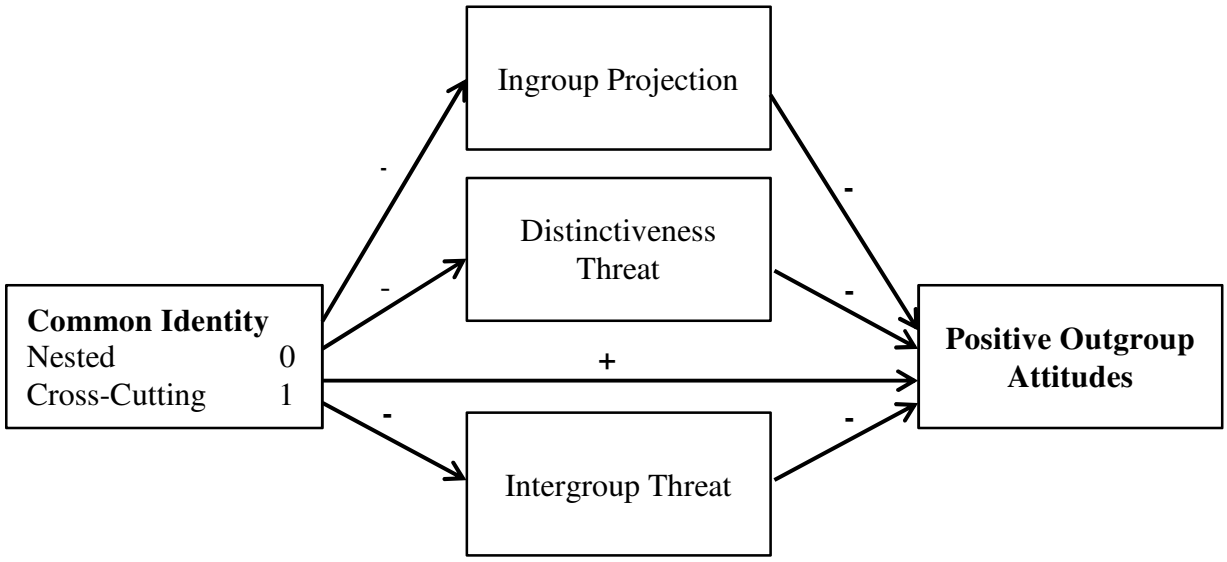

Figure 2. Mediational model of the relationship between cross-cutting versus nested common ingroup identity on outgroup attitudes.

The Current Study

The hypotheses were tested in a study concerning gaming. More precisely, participants could choose between the two subgroups of board or computer gamers and subsequently were put in one of the two conditions of the study: ‘Game Lovers’ (nested CII)

and '-Genre- Game Lovers' (cross-cutting CII).

The results of the study may provide important information for social psychologists regarding the influence and the underlying processes of the relationship between the two types of CII and outgroup attitudes. With this knowledge, it can be possible to develop interventions avoiding processes that promote negative outgroup attitudes and thereby, create more effective interventions to counteract racism, intergroup conflict and biases.

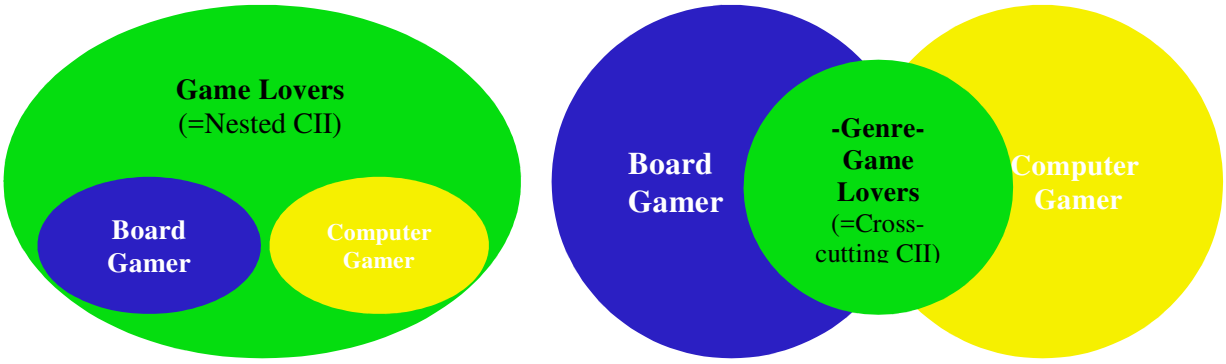

Figure 3. Graphical representation of the two conditions of the current study (left: Condition 1 'Game Lovers' as nested CII; right: Condition 2 '-Genre-Game Lovers' as cross-cutting CII).

Method

Participants and Design

The online experiment consisted of a one-factorial between-groups design. There was one independent variable (Common Ingroup Identity (CII)) with two levels (cross-cutting CII and nested CII). The dependent variable was outgroup attitudes.

A total of 341 participants participated in the study. The participants were mostly recruited through the use of an online platform called 'Sona' (n=309). This is a platform of the University of Twente wherein students can share their studies with other students, who in return can receive credits for filling in the questionnaire (in this case they received 0,5 credits). Additionally, a small number of participants (n=32) were recruited through the help of social media (Facebook) and through sharing the link with personal networks. Participants

who did not complete the survey (*n*=34) were excluded from the analysis. This resulted in a total of 307 participants. Of these, 30% were men and 70% were women. The mean age was 22 years (ranging from 18 to 64; *SD* = 3.42). For information about participants' gaming behaviour see Table 1.

Table 1. *Sample Characteristics - Gaming Behavior*

	Board Gamer	**Computer Gamer**
Number of participants	185 (60%)	122 (40%)
Gender		
Male	16 (9%)	75 (61%)
Female	169 (91%)	47 (39%)
Frequency of gaming		
Daily	0 (0%)	17 (14%)
4-6 times a week	1 (1%)	20 (16%)
2-3 times a week	5 (3%)	21 (17%)
Once a week	27 (15%)	20 (16%)
Once a month	57 (31%)	16 (13%)
Less than once a month	95 (51%)	28 (23%)

Materials

To create and present the online experiment the program 'Qualtrics' was used. The questionnaire contained in total 24 questions: Four questions about demographic data, eight questions about gaming behaviour and gaming identification (answered on a 7-point Likert scale) and the remaining questions were about the four variables measured in this study: Outgroup attitudes, Integrated threat, Prototypicality/Ingroup Projection and Distinctiveness threat. Table 2 presents the scale means, standard deviations and correlations among all variables included in the analyses, with addition of the three identification measures used in the study.

Participants were equally and randomly assigned to the two conditions: Nested or cross-cutting CII. Dependent on the assigned condition, two different cover stories were presented. Participants assigned to the nested CII were presented a story saying that Game

Lovers in general are more successful in certain tasks than are board gamers and computer gamers performing the same tasks apart. An excerpt from this manipulation was: 'Instead of focusing and differentiating between different gamers, it is recommended to focus on one common group of Game Lovers consisting of board and computer gamers. This means that board or computer gamers do not exist on their own anymore, rather they form a common group of Game Lovers consisting of both'. Participants assigned to the cross-cutting CII, in contrast, were told that the groups consisting of the respective game genres which were chosen by the participants self are more successful in certain tasks than are board and computer gamers performing the same task apart. The cover story for this manipulation was equal to the former one except that instead of the label 'Game Lovers' the label of the chosen game genre, for instance, '*Action* Game Lovers' was used.

Outgroup Attitudes. Outgroup attitudes were measured through two scales. The first scale - *Trait attitude scale* - assessed participants' estimation of the percentage of the outgroups' (either board or computer gamers) possession of 14 different traits, for example, traits such as 'creative', 'intelligent', 'boring' and 'sociable'. Participants answered these questions on a 10-point scale ranging from 1 (*0-10%)* to 10 (*91-100%*) in 10% increments. These questions were taken over from Stephan et al. (1994) and adapted with some different adjectives. The responses were reverse scored where necessary and averaged to form an index in which high scores indicated positive attitudes, $\alpha = .76$.

The second scale – *Openness to contact attitude scale* consisted of eight questions from a combined measure by Wenzel, Mummendey, Weber, and Waldzus (2003), which were translated from Dutch into English. Example questions were 'I think it is important to have contact with Board/Computer gamers' [outgroup] and 'I am open to contact with Board/Computers [outgroup]'. Answers here were given on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*), $\alpha = .81$. For subsequent analyses both the Trait

attitude scale and the Openness to contact attitude scale were combined into one composite score. To avoid that one of the scales is weighted more than the other (because of the different types of scales: 7-point Likert scale and 10-point scale) the raw test scores of both scales were converted into z-scores and then added together.

Integrated Threat. Integrated threat was measured through seven items on the same 7-point Likert scale. Example questions here were 'Computer/Board Gamers [ingroup] and Board/Computer gamers [outgroup] have very different values' and 'Most Board/Computer gamers [outgroup] will never understand what Computer/Board gamers [ingroup] are like' (Stephan et al., 2002), $\alpha = .74$.

Relative ingroup prototypicality. To measure prototypicality a one-item scale (Ufkes, Otten, Van der Zee, Giebels, & Dovidio, 2012) was used. One item 'How typical do you perceive Computer/Board Gamers [ingroup] to be one common group of Game Lovers [nested CII] or -Genre- Game Lovers [cross-cutting CII]?' measuring *ingroup projection* and the same question for the outgroup measuring *outgroup projection*. Answers were given by means of six different arrangements of venn diagrams, which were two circles that were increasingly overlapping with each other, with 1 = clearly apart from each other and 6 = completely covering each other (IOS scale; Aron, Aron, & Smollan, 1992). Thereby, one of the circles was labelled with the name of the chosen subgroup [Computer Gamers or Board Gamers] and the other circle was labelled with the name of the ascribed CII (Game Lovers or -Genre- Game Lovers]. The essential measure *relative ingroup projection* was derived by subtracting outgroup projection from ingroup projection (ingroup projection – outgroup projection). Thus, the relative ingroup projection score varied from -6 to 6 with 0 meaning that participants found both groups equally prototypical, 6 meaning that participants found the ingroup most prototypical and -6 that participants found the outgroup to be most prototypical for the relevant CII.

Distinctiveness Threat. To measure distinctiveness threat three items from Jetten, Spears and Manstead (1997) were used, assessing participants' extent of agreement to statements such as 'To what extent do you feel that Computer/Board gamers [ingroup] are distinguishable from Board/Computer gamers [outgroup]?'. Answers were given on a 5-point scale ranging from 1 = *None at all* to 2 = *A great deal*, $\alpha = .61$.

Procedure

First of all, participants read an introductory text were the experiment was introduced as a study dealing with the participants' 'preferences in different types of games'. Besides that, some information about the study was given (its duration, anonymity of data, voluntary participation). After agreeing with the active consent, some demographic questions were asked (gender, year of birth, nationality and highest completed level of education). In the following, participants were asked some questions about their gaming behaviour including the question 'What type of game do you like more?'. They could choose from two game types: Board games and computer games. The choice for this game type was the reason to place the participants in one of two subgroups of the study. Depending on the chosen game type participants either were classified as 'Board Gamers' or as 'Computer Gamers'. The selected choice was therefore representing their ingroup in all upcoming questions, the unselected choice in contrast, was representing their outgroup. Subsequently, some questions about the identification with gamers in general and the chosen type of gamers were asked. Another question whose answer was used in the upcoming questionnaire (for participants assigned to the cross-cutting CII condition) was: 'Which of the following is your favourite Computer/Board Game genre?' Participants could choose here from a list of seven different game genres (Action, Adventure, Strategy, Word, Sport, Fantasy, and Dexterity). After answering these questions participant were randomly assigned to one of two conditions: Nested CII and cross-cutting CII. For this, they were shown one of two cover stories: 'Game

Lovers' [nested CII] and '-Genre- Game Lovers' [cross-cutting CII]. Dependent on the answer which was given on the question about the favourite game genre the label of the cover story in the cross-cutting CII condition was varying, for instance, '*Action* Game Lovers'. Further in the questionnaire participants were given the questions about the different variables described above (see section Materials). Finally, after answering all relevant questions, participants received a *debriefing* stating the real goal of the research and the reasons for not disclosing the true purpose of the experiment at the beginning of the questionnaire were explained.

Table 2. *Scale Means, Standard Deviations, and Inter-scale Correlations*

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Relative Ingroup Projection	.20 (1.33)	.13*	.03	.10	.16**	.05	.06
2. Distinctiveness Threat		2.89 (.72)	.32**	-.12*	.02	.02	.06
3. Intergroup Threat			3.73 (.81)	-.34**	-.11*	-.06	-.00
4. Outgroup Attitudes					.38**	.15*	.23**
-Trait Attitude Scale				5.97 (.94)			
-Openness to Contact Attitude Scale				4.39 (.83)			
5. Identification Gaming General					2.92 (1.36)	.72**	.62**
6. Identification Subgroup						3.38 (1.34)	.77**
7. Identification Genre							3.60 (1.33)

Note. The numbers on the table diagonal represent the scale means with the standard deviations within parentheses.
* $p < .05$; ** $p < .01$.

Results

To test the first hypothesis that cross-cutting CIIs will lead to more positive outgroup attitudes than nested CIIs an independent samples t-test was performed. This analysis showed, that on average, participants in the cross-cutting CII condition (M = .02, SE = .14) did not significantly score higher on outgroup attitudes than participants in the nested CII condition

(M = -.02, SE = .14), $t(304)$ = -.19, p = .85. In other words, there was no significant effect of type of CII on outgroup attitudes; Hypothesis 1 is therefore not confirmed.

The second hypothesis that cross-cutting CIIs will lead to less ingroup projection than nested CIIs was also tested by means of an independent samples t-test. This showed, that on average, participants in the cross-cutting CII condition (M = .39, SE = .11) did significantly score *higher* on (relative) ingroup projection than participants in the nested CII condition (M = .01, SE = .10), $t(303)$ = -2.52, p = .01. That is, regarding Hypothesis 2 a significant effect in the contrary direction was found, saying that participants in the cross-cutting condition think their ingroup to be *more* prototypical for the CII than the outgroup. Further analyses of this relative score of ingroup projection (ingroup projection – outgroup projection) showed that there was no significant effect of type of CII on ingroup projection ($t(304)$ = .93, p = .35), but that there was a significant effect on outgroup projection $t(303)$ = 3.35, p < .01. On average, participants in the cross-cutting CII condition (M = 3.60, SE = .10) scored lower on outgroup projection than participants in the nested CII condition (M = 4.08, SE = .11). In other words, the found effect of a higher prototypicality for the cross-cutting CII condition was because of the fact that in the cross-cutting CII condition participants found the outgroup to be less prototypical for the CII than the ingroup, and not because they think the IG to be more prototypical for the CII than the OG.

The third hypothesis that cross-cutting CIIs will lead to less distinctiveness threat than nested CIIs was again tested with an independent samples t-test. The test showed, that on average, participants in the cross-cutting CII condition (M = 2.91, SE = .06) did not significantly score less on distinctiveness threat than participants in the nested CII condition (M = 2.87, SE = .06), $t(304)$ = -.45, p = .65. In other words, there was no significant effect of type of CII on distinctiveness threat as expected.

The forth hypothesis that cross-cutting CIIs will lead to less intergroup threat than

nested CIIs was also tested by means of an independent samples t-test. The analysis showed, that on average, participants in the cross-cutting CII condition (M = 3.73, SE = .07) did not significantly score less on intergroup threat than participants in the nested CII condition (M = 3.72, SE = .06), $t(304) = -.19$, $p = .85$. Therefore, contrary to expectations there was no significant effect of type of CII on intergroup threat.

Mediation

In the current study there were three mediational hypotheses: Hypothesis 2a about ingroup projection, Hypothesis 3a about distinctiveness threat and Hypothesis 4a about intergroup threat. As a first step to test these a-hypotheses a multiple regression analysis was employed to ascertain the prediction of the dependent variable outgroup attitudes from the three mediators ingroup projection, distinctiveness threat and intergroup threat. This analysis showed a significant effect of ingroup projection on outgroup attitudes (H2a), $b = .15$, SE = .07, $t(304) = 2.08$, $p = .04$; as well as of intergroup threat on outgroup attitudes (H4a), b = -.71, $SE = .12$, $t(304) = -5.82$, $p < .01$. That is, the more ingroup projection participants experienced, the more positive outgroup attitudes they had; and the more intergroup threat they experienced, the less positive outgroup attitudes they had. Distinctiveness threat revealed no significant effect on outgroup attitudes (H3a), $b = -.07$, $SE = .14$, $t(304) = -.52$, $p = .61$.

Referring back to the mediational model in Figure 2, it thus has been proven that the first path (a-path) from common ingroup identity to ingroup projection is significant, but in the opposite direction as expected. That is, participants in the cross-cutting CII condition scored higher (rather than lower as hypothesised) on ingroup projection than participants in the nested CII condition. The second path (b-path) from ingroup projection to positive outgroup attitudes was significant in the expected direction. That is, the more ingroup projection participants experienced, the more positive outgroup attitudes they had. A direct effect (c-path) from the independent variable common ingroup identity to the dependent

variable positive outgroup attitudes could not been detected. However, because of the significant effects of the first two paths it was tested for mediation for Hypothesis 2a ('The effect of cross-cutting vs. nested CIIs on outgroup attitudes is mediated by ingroup projection'). The indirect effect was tested using simple mediation analyses based on 5,000 bootstrap (Preacher & Hayes, 2008). Results indicated that CII was a significant predictor of ingroup projection, $b = .38$, $SE = .15$, $t(304) = 2.52$, $p = .01$; but that ingroup projection was no significant predictor of outgroup attitudes when it is controlled for the effect of condition on outgroup attitudes, $b = .13$, $SE = .08$, $t(304) = 1.76$, $p = .08$. The indirect effect using the bootstrap estimation approach also indicated no significant effect, $b = .05$, $SE = .04$, 95% CI [-.0007, .151]. The same analysis with a 90% confidence interval revealed a marginal significant indirect effect $b = .05$, $SE = .04$, 90% CI [.007, .138]. Although these results did not support the mediational Hypothesis 2a, it shows a trend towards a possible indirect effect between CII and outgroup attitudes through ingroup projection.

For the second and third mediational hypothesis (H3a and H4a) the first path (a-path) in the model from common ingroup identity to distinctiveness threat respectively intergroup threat revealed no significant results. Although for the mediator intergroup threat (H4a), there was a significant effect to the dependent variable positive outgroup attitudes, it was concluded, that there is no mediation-analyses for both mediators necessary. For a possible mediation, both paths, the a-path and the b-path for each mediating variable should have been significant. Hence, there was no support for hypotheses 3a and 4a.

Discussion

The aim of the study was to compare the influence and the underlying processes of cross-cutting versus nested CIIs on outgroup attitudes. Thereby, as possible mediators ingroup

projection, distinctiveness threat and intergroup threat were measured. It was hypothesised, that cross-cutting CIIs would have a more positive influence on outgroup attitudes than nested CIIs and that this effect could be explained through a reduced effect of the three (negative) mediators. Contrary to expectations no significant results in accordance with the hypotheses were found. Only the expectation that cross-cutting CIIs will lead to less ingroup projection than nested CIIs revealed significant results, but in the opposite direction than expected. That is, cross-cutting CIIs yielded *more* ingroup projection than nested CIIs and this is because they found the outgroup to be less prototypical for the CII than their ingroup. There are two possible explanations why the latter unexpected result could have been occurred. First of all, according to Hewstone and Brown (1986) to be able to get a mutual positive intergroup differentiation, a CII must be created, in which both subgroups are similarly prototypical and normative for the CII. In the current study a neutral manipulation of the subgroups were used. That means, both subgroups computer gamers and board gamers are equally prototypical for the common group of Game Lovers. They are equal to each other in status and value, because in the manipulation there were no differences between the two subgroups mentioned. In contrast, most studies conducted in this area (measuring nested CIIs) were about subgroups of different ethnicities such as White Americans, African Americans and Asian Americans (Devos & Banaji, 2005) or East and West Germans (Waldzus, Mummendey, Wenzel, & Boettcher, 2004, Study 3). In these cases, the CII provides dimensions and norms for comparisons for ingroup and outgroup members. In the current study these dimensions for comparisons are not given. This may explain why this result was in the opposite direction as expected. The findings of the current study made clear that the higher ingroup projection in the cross-cutting CII result from the view that the outgroup is seen as *less* prototypical for the relevant CII '-Genre-Game Lovers' and not because the ingroup is seen as *more* prototypical for the CII than the outgroup.

Secondly, Mummendey and Wenzel (1999) stated, that ingroup projection is reduced when there is no clear and well-defined prototype of the CII. Thus, the result that the cross-cutting CII leads to more ingroup projection than the nested CII could be an indication for a vague prototype for the nested CII. That means, the nested CII which in this study were the 'Game Lovers' could be an unclear and not well-defined prototype. It could be argued, that the ideal member of the group of 'Game Lovers' has no clear attributes that are stereotypical and only appropriate for this ingroup. This distinctive and stereotypical attributes are important to evaluate the ingroup as normative and positive and therefore essential, to make ingroup projection feasible. Therefore, it may be the case that the cross-cutting CII had more clear and distinctive features than the nested CII, so that in the cross-cutting CII condition participants were able to realise ingroup projection, while in the nested CII condition it was more difficult to make ingroup projection possible. Therefore, future research should consider using cover stories that contain information about the outgroup, so that participants also can think about the outgroup and not only about the relevant CII that is manipulated. Additionally, a more clear definition of a prototype of the CIIs can be emphasised in the cover stories. That is, for example, which stereotypical attributes does an ideal 'Game Lover' or '-Genre- Game Lover' has and how can they be differentiated from other relevant groups? More specifically, future research could consider a preceding exploratory study within a small sample to discover typical attributes of Game Lovers and the seven different Genre Game Lovers used in the study (Action, Adventure, Strategy, Word, Sport, Fantasy and Dexterity). This can be done by using interviews or a survey with open questions asking participants to describe a typical Game/Genre Game Lover or by using focus groups discussing differences between both groups. This procedure can help to determine stereotypical attributes of both groups, so that the uncertainty about the distinguishing characteristics of both group members can be overcome.

There are also some possible explanations for the unexpected non-significant results. First of all, the two conditions of the study: Cross-cutting and nested CIIs are both interventions used to get a more positive picture of outgroup members (Marcus-Newhall, Miller, Holtz, & Brewer, 1993; Kunst, Thomsen, Sam, & Berry, 2015). For the current study, this does not exclude the possibility that both CIIs had such a strong positive effect, that there could not been revealed a difference in the effects of the CIIs on outgroup attitudes. On the basis of the existing data it cannot be concluded whether subgroup members had a more negative picture of the outgroup before they were assigned into the CIIs or whether subgroup members already had a positive picture of the outgroup before being manipulated into both conditions. For this, the attitudes of the two subgroups before being manipulated with a common ingroup identity should have been measured. Thus, future research could either assess outgroup attitudes before the CII manipulation is implemented, thus a repeated measure of outgroup attitudes; or it is recommended to include a third condition which measures relevant variables for the two subgroups. With the help of a control condition, it should be possible to differentiate whether the unfound effects are due to an effect of the manipulation of the CIIs or whether there is no effect of the CII.

Another possible explanation for the non-significant results could be the low identification of the participants with their ingroup. All three identification measurements used in the study – identification with gaming in general, with the subgroups and with the relevant genre were relatively low. That is, scores were either significantly below or not significantly different from the mid-point of the scale ($t(306) = -7.46$, $p < .01$; $t(306) = -1.57$, $p = .12$; $t(306) = 1.37$, $p = .17$, respectively; see Table 2 for the means). That is, participants may not identified strong enough with their ingroup in order to give meaningful answers in the questionnaire. They tend to choose middle options in the following questionnaire - measuring the relevant variables of the study - because they could not identify strong enough

with their subgroup of computer or board gamers. Therefore, in future research it is important to increase the subgroup-identification of the participants. This can be done in two different ways: First it is possible to make use of different subgroups, groups that are more important and real for people and that possibly already are in conflict with each other, for instance foreigners and non-foreigners living in Germany (nested CII) and living in a common neighbourhood district (cross-cutting CII). With this approach, naturally occurring group-processes could take place further. A second way to increase subgroup-identification could be to keep the subgroups of the current study (board and computer gamers) while activating the identification of the participants. This can be done, for example, through adding elements to the cover story that display an existing conflict between the two subgroups, for instance, that one of the two subgroups is paid more money from a gaming organisation than the other. Moreover, it is clearly detectable that identification with gaming in general is particularly low. This is possibly due to the fact that participants had to make a forced choice between board games and computer games (see Q2.2 in the Appendix). There was no option available saying that participants do not like gaming at all. Also the question about the frequency of gaming (see Q2.4 in the Appendix) gave participants no possibility to state that they never play these games. Thus, based on the questions of the current study it is not possible to say whether there were participants who never or rarely engage in gaming. Table 1 shows that 51% of the board gamers reported to play board games ‘less than one month’. This can be an indication that especially board gamers in the current study could not identify strong enough with their subgroups, because half of the participants engage rarely in gaming. In future research this can be solved by giving participants the option to say that they do not like gaming/games (Q2.2) and the option that they never or hardly ever engage in gaming (Q2.4). These never or hardly ever gaming participants can therefore be excluded from subsequent analyses to ensure that low identifiers do not distort the results. Another possibility is to take

the variable ‘frequency of gaming’ into the analyses as a covariate. Thereby, it could be tested whether outgroup attitudes is related to how often participants play certain games.

Additionally, regression analyses revealed that the more ingroup projection participants experienced, the more positive intergroup attitudes they had. This is also against the expectation that more ingroup projection leads to more negative outgroup evaluations. These unexpected result can also be explained by the fact how participants assessed the situation between ingroup and outgroup. Table 2 shows that identification is positively related with outgroup attitudes. That is, the more participants identified with their subgroups, the more positive they were about their outgroup. This in turn can also be explained by the fact that in the current study board and computer gamers do not represent conflicting groups. Therefore, participants had no plausible reason to think negatively over the outgroup. As mentioned above, future research should therefore consider either using other subgroups, which are naturally conflicting with each other or to keep the subgroups of computer and board gamers while encouraging conflicts between both subgroups.

A further important aspect to pay attention in future research is the marginal effect found in the mediation analysis measuring the predictability of outgroup attitudes through ingroup projection. The bootstrap estimation approach with a 90% confidence interval also revealed a weak indirect effect between CII and outgroup attitudes through ingroup projection. Future research should therefore investigate whether these weak effects are reliable or whether they arose due to error.

Despite the fact that no significant results in accordance with the hypotheses were found, there are some noteworthy positive aspects of the current study to be mentioned. With implementing this study a new paradigm in psychological research is developed. Beforehand, there was no empirical research conducted that differentiated between the two types of CII and their impact on outgroup attitudes. In the review paper by Wenzel et al. (2007) the two

types of common ingroup identity and their opposing effects on outgroup attitudes were solely discussed by means of different papers that either made use of cross-cutting CIIs or nested CIIs. Consequently, there was no research conducted that integrate both types of CII into one study. Accordingly, the current study is a first attempt to compare cross-cutting and nested common ingroup identities and their influence on outgroup attitudes while taking into account three additional mediating variables. Moreover, as mentioned above, this study made use of a manipulation that is neutral. That is, the two subgroups computer and board gamers were equal in status and value. This can also be seen as an enhancement, because most studies conducted in this area (measuring nested CIIs) were about subgroups of different ethnicities (Devos & Banaji, 2005; Waldzus et al., 2004, Study 3). In the current study, a different and novel approach to manipulate subgroups was used.

To conclude, the current study provides a first basic step of important research in the area of nested and cross-cutting common ingroup identities and their influence on outgroup attitudes. Future research should include a control condition without manipulating CII and should ensure both a higher identification with subgroups and conflicts between both subgroups. By this means, it could be possible to learn more about the mechanisms through which a common ingroup identity improves outgroup attitudes. This in turn can provide important information to counteract negative outgroup attitudes and to be able to create effective interventions against racism and intergroup conflict.

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Appendix

Full Questionnaire
Nested & Cross-Cutting Common Identities

Q1.1 Thank you for participating in this research! This study is over your preferences in different types of games. We anticipate that your participation will require approximately 10-15 minutes. All of your responses will be anonymous (I will not ask for, or record, your name or any other information that could lead back to you). Only the researchers involved in this study and those responsible for research oversight will have access to the information you provide. We will not publish or report individual responses but we only use averages across groups of responses. Participation in this study is completely voluntary. You are free to decline to participate and end participation at any time for any reason without penalty or loss of compensation. Withdrawal or refusing to answer specific questions or engage in specific tasks will not result in any consequences. Take as long as you would like before you make your decision. There is no right or wrong answer. If you have any research-related problems or have any questions regarding your rights as a research participant please feel free to contact me (Merve Aksoy) through my mail m.aksoy@student.utwente.nl.

Q1.2 Do you agree with these conditions?

1. Yes (1)
2. No (2)

Q1.3 Before starting the actual study, I'd like to ask you a number of questions about yourself, in order to be able to give a general description of the people who took part in this study.

Q1.4 What is your gender?

3. Male (1)
4. Female (2)

Q1.5 What is your year of birth?

Q1.6 What is your nationality?

5. Dutch (1)
6. German (2)
7. Other, namely (3) _____

Q1.7 What is the highest level of education you have completed?

8. Less than high school (1)
9. High school graduate (VWO/(Fach-)Abitur) (2)
10. Some college (First/Second/Third/Fourth year of college) (3)
11. Bachelor's degree (4)
12. Master's degree (5)
13. Professional degree (6)
14. Doctorate (7)

Q1.8 How fluent are you in english?

_____ Click to write Choice 1 (1)

Q2.1 In the following I'd like you to answer some questions about your gaming behavior.

Q2.2 What type of game do you like more?

15. Board game (1)
16. Computer game (2)

Q2.3 Which ${q://QID35/ChoiceGroup/SelectedChoices}(s) do you find most interesting? Write down a few games or one game you like most.

Q2.4 How often do you play this/these ${q://QID35/ChoiceGroup/SelectedChoices}(s)?

17. Daily (1)
18. 4-6 times a week (2)
19. 2-3 times a week (3)
20. Once a week (4)
21. Once a month (5)
22. Less than once a month (6)

Q2.5 How do you feel about playing ${q://QID35/ChoiceGroup/SelectedChoices}s?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I like ${q://QID35/ChoiceGroup/SelectedChoices}s very much. (1)	23.	24.	25.	26.	27.	28.	29.
I am a fanatical ${q://QID35/ChoiceGroup/SelectedChoices} player. (2)	30.	31.	32.	33.	34.	35.	36.

Q2.6 How much do you agree with the following statements about Gamers in general?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I identify with Gamers. (1)	37.	38.	39.	40.	41.	42.	43.
Gamers are important to me. (2)	44.	45.	46.	47.	48.	49.	50.
I feel connected to Gamers. (3)	51.	52.	53.	54.	55.	56.	57.
I feel solidarity with Gamers. (4)	58.	59.	60.	61.	62.	63.	64.

Q2.7 How much do you agree with the following statements about ${q://QID35/ChoiceGroup/SelectedChoices}rs?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I identify with ${q://QID35/ChoiceGroup/SelectedChoices}rs. (1)	65.	66.	67.	68.	69.	70.	71.
${q://QID35/ChoiceGroup/SelectedChoices}rs are important to me. (2)	72.	73.	74.	75.	76.	77.	78.
I feel connected to ${q://QID35/ChoiceGroup/SelectedChoices}rs. (3)	79.	80.	81.	82.	83.	84.	85.
I feel solidarity with ${q://QID35/ChoiceGroup/SelectedChoices}rs. (4)	86.	87.	88.	89.	90.	91.	92.

Q2.8 Which of the following is your favorite ${q://QID35/ChoiceGroup/SelectedChoices} genre?

93. Action (1)
94. Adventure (2)
95. Strategy (3)
96. Word (4)
97. Sport (5)
98. Fantasy (6)
99. Dexterity (7)

Q2.9 How much do you agree with the following statements about ${q://QID13/ChoiceGroup/SelectedChoices} gamers?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I identify with ${q://QID13/ChoiceGroup/SelectedChoices} gamers. (1)	100.	101.	102.	103.	104.	105.	106.
${q://QID13/ChoiceGroup/SelectedChoices} gamers are important to me. (2)	107.	108.	109.	110.	111.	112.	113.
I feel connected to ${q://QID13/ChoiceGroup/SelectedChoices} gamers. (3)	114.	115.	116.	117.	118.	119.	120.
I feel solidarity with ${q://QID13/ChoiceGroup/SelectedChoices} gamers. (4)	121.	122.	123.	124.	125.	126.	127.

Q3.1 Please read the following info text carefully (you will be asked some questions about this later). Game Lovers According to an article by Miller, Smith, & Cooper (2013) people who like to play games can be seen as a special group of people. Current research over gamers show that people playing games are often seen as intelligent, creative and extraverted people. It does not matter what kind of games you play (board or computer games), but only that you are playing the one or the other time makes you be in the group of Game Lovers. Whenever different types of gamers come together in order to do a certain task - for example in one study different groups of gamers had the task to paint a picture, but with blindfolded eyes, so that the gamers only could communicate with each other in order to get a picture that matches together, Game Lovers, had more matching and impressive pieces of art than people who are not Game Lovers. So, instead of focusing and differentiating between different gamers, it is recommeded to focus on one common group of Game Lovers consisting of board and computer gamers. This means, that board or computer gamers do not exist on their own anymore, rather they form a common group of Game Lovers consisting of both. It doesn't matter which specific games you like, because all Game Lovers are similar to each other. It is only important to recognize that Game Lovers are part of a common group sharing similar values and beliefs that unite them and make them able to make great things together!

Q3.2 The following are different statements that reflect the gamer groups discussed in the information text you just read.Read through this list and think which of these statements best reflects the reasoning of the paragraph.

128. Thinking in terms of differentiated groups of gamers is most effective to reach certain tasks (1)
129. Thinking in terms of a common group of game lovers is most effective to reach certain tasks (2)
130. Thinking in terms of your own is most effective to reach certain tasks (3)

Q4.1 Please read the following info text carefully (you will be asked some questions about this later). ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers According to an article by Miller, Smith, & Cooper (2013) people who like to play games can be seen as a special group of people. Current research over gamers show that people playing games are often seen as intelligent, creative and extraverted people. It does not matter what kind of games you play (board or computer games), but only that you are playing the one or the other time makes you be in the group of ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers. Whenever different types of gamers come together in order to do a certain task - for example in one study different groups of gamers had the task to paint a picture, but with blindfolded eyes, so that the gamers only could communicate with each other in order to get a picture that matches together, ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers, had more matching and impressive pieces of art than people who are not ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers. So, instead of focusing and differentiating between different gamers, it is recommeded to focus on one common group of ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers consisting of board and computer gamers. This means, that board or computer gamers do not exist on their own anymore, rather they form a common group of ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers consisting of both. It doesn't matter which specific games you like, because all ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers are similar to each other. It is only important to recognize that ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers are part of a common group sharing similar values and beliefs that unite them and make them able to make great things together!

Q4.2 The following are different statements that reflect the gamer groups discussed in the information text you just read.Read through this list and think which of these statements best reflects the reasoning of the paragraph.

131. Thinking in terms of differentiated groups of gamers is most effective to reach certain tasks (1)
132. Thinking in terms of a common group of ${q://QID13/ChoiceGroup/SelectedChoices} game lovers is most effective to reach certain tasks (2)
133. Thinking in terms of your own is most effective to reach certain tasks (3)

Q5.1 Please estimate the percentage of ${q://QID35/ChoiceGroup/UnselectedChoices}rs who possess each of the following traits.

	0-10% (1)	11-20% (2)	21-30% (3)	31-40% (4)	41-50% (5)	51-60% (6)	61-70% (7)	71-80% (8)	81-90% (9)	91-100% (10)
Creative (1)	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.
Intelligent (2)	144.	145.	146.	147.	148.	149.	150.	151.	152.	153.
Arrogant (3)	154.	155.	156.	157.	158.	159.	160.	161.	162.	163.
Aggressive (4)	164.	165.	166.	167.	168.	169.	170.	171.	172.	173.
Boring (5)	174.	175.	176.	177.	178.	179.	180.	181.	182.	183.
Athletic (6)	184.	185.	186.	187.	188.	189.	190.	191.	192.	193.
Old (7)	194.	195.	196.	197.	198.	199.	200.	201.	202.	203.
Nerdy (8)	204.	205.	206.	207.	208.	209.	210.	211.	212.	213.
Healthy (9)	214.	215.	216.	217.	218.	219.	220.	221.	222.	223.
Childish (10)	224.	225.	226.	227.	228.	229.	230.	231.	232.	233.
Addicted (11)	234.	235.	236.	237.	238.	239.	240.	241.	242.	243.
Clannish (they stick together too much) (12)	244.	245.	246.	247.	248.	249.	250.	251.	252.	253.
Sociable (13)	254.	255.	256.	257.	258.	259.	260.	261.	262.	263.
Friendly (14)	264.	265.	266.	267.	268.	269.	270.	271.	272.	273.

Q5.2 Based on the passage you just read, please indicate to which degree you agree/disagree with these statements:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I appreciate the mentality of ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (1)	274.	275.	276.	277.	278.	279.	280.
I think it is important to have contact with ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (2)	281.	282.	283.	284.	285.	286.	287.
I think I like the ${q://QID35/ChoiceGroup/UnselectedChoices}rs generally. (3)	288.	289.	290.	291.	292.	293.	294.
I find it easy to accept the differences between us ${q://QID35/ChoiceGroup/SelectedChoices}rs and most ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (4)	295.	296.	297.	298.	299.	300.	301.
I am open to contact with ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (5)	302.	303.	304.	305.	306.	307.	308.
I think ${q://QID35/ChoiceGroup/UnselectedChoices}rs appreciate me as a gamer. (6)	309.	310.	311.	312.	313.	314.	315.
I find it easy to make contact with ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (7)	316.	317.	318.	319.	320.	321.	322.
I like to be with ${q://QID35/ChoiceGroup/UnselectedChoices}rs. (8)	323.	324.	325.	326.	327.	328.	329.

Q6.1 Indicate your agreement with each of the following statements concerning ${q://QID35/ChoiceGroup/UnselectedChoices}rs.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
${q://QID35/ChoiceGroup/SelectedChoices}rs and ${q://QID35/ChoiceGroup/UnselectedChoices}rs have very different values. (1)	330.	331.	332.	333.	334.	335.	336.
${q://QID35/ChoiceGroup/UnselectedChoices}rs have no right to think they have better values than ${q://QID35/ChoiceGroup/SelectedChoices}rs. (2)	337.	338.	339.	340.	341.	342.	343.
${q://QID35/ChoiceGroup/UnselectedChoices}rs don't understand the way ${q://QID35/ChoiceGroup/SelectedChoices}rs view the world. (3)	344.	345.	346.	347.	348.	349.	350.
${q://QID35/ChoiceGroup/SelectedChoices}rs and ${q://QID35/ChoiceGroup/UnselectedChoices}rs have different game values. (4)	351.	352.	353.	354.	355.	356.	357.
${q://QID35/ChoiceGroup/UnselectedChoices}rs don't value the traditions of their group as much as ${q://QID35/ChoiceGroup/SelectedChoices}rs do. (5)	358.	359.	360.	361.	362.	363.	364.
Most ${q://QID35/ChoiceGroup/UnselectedChoices}rs will never understand what ${q://QID35/ChoiceGroup/SelectedChoices}rs are like. (6)	365.	366.	367.	368.	369.	370.	371.
${q://QID35/ChoiceGroup/SelectedChoices}rs do not get as much respect from ${q://QID35/ChoiceGroup/UnselectedChoices}rs as they deserve. (7)	372.	373.	374.	375.	376.	377.	378.

Q7.1 Type in up to 4 attributes that are characteristic for ${q://QID35/ChoiceGroup/SelectedChoices}rs in comparison to ${q://QID35/ChoiceGroup/UnselectedChoices}rs.

1. Type in 1st attribute (1) _____
2. Type in 2nd attribute (2) _____
3. Type in 3rd attribute (3) _____
4. Type in 4th attribute (4) _____

Q7.2 Type in up to 4 attributes that are characteristic for the other group - the group of ${q://QID35/ChoiceGroup/UnselectedChoices}rs.

5. Type in 1st attribute (1) _____
6. Type in 2nd attribute (2) _____
7. Type in 3rd attribute (3) _____
8. Type in 4th attribute (4) _____

Carry Forward Selected Choices - Entered Text from "Type in up to 4 attributes that are characteristic for ${q://QID35/ChoiceGroup/SelectedChoices}rs in comparison to ${q://QID35/ChoiceGroup/UnselectedChoices}rs."

Q7.3 How applicable do you find the attributes you just gave for the ${q://QID35/ChoiceGroup/SelectedChoices}rs to be suitable for Game Lovers?

	Does not apply at all (1)	Does not apply somewhat (2)	Neither apply nor does not apply (3)	Applies somewhat (4)	Applies very much (5)
Type in 1st attribute (x1)	9.	10.	11.	12.	13.
Type in 2nd attribute (x2)	14.	15.	16.	17.	18.
Type in 3rd attribute (x3)	19.	20.	21.	22.	23.
Type in 4th attribute (x4)	24.	25.	26.	27.	28.

Carry Forward Selected Choices - Entered Text from "Type in up to 4 attributes that are characteristic for the other group - the group of ${q://QID35/ChoiceGroup/UnselectedChoices}rs."

Q7.4 How applicable do you find the attributes you just gave for the ${q://QID35/ChoiceGroup/UnselectedChoices}rs to be suitable for Game Lovers?

	Does not apply at all (1)	Does not apply somewhat (2)	Neither apply nor does not apply (3)	Applies somewhat (4)	Applies very much (5)
Type in 1st attribute (x1)	29.	30.	31.	32.	33.
Type in 2nd attribute (x2)	34.	35.	36.	37.	38.
Type in 3rd attribute (x3)	39.	40.	41.	42.	43.
Type in 4th attribute (x4)	44.	45.	46.	47.	48.

Q7.5 How typical do you perceive ${q://QID35/ChoiceGroup/SelectedChoices}rs to be of one common group of Game Lovers? Choose for one image which is most suitable.

49. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (1)
50. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (2)
51. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (3)
52. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (4)
53. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (5)
54. ${q://QID35/ChoiceGroup/SelectedChoices}rs Game Lovers (6)

Q7.6 How typical do you perceive ${q://QID35/ChoiceGroup/UnselectedChoices}rs to be of one common group of Game Lovers?Again choose for one image which is most suitable.

55. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (1)
56. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (2)
57. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (3)
58. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (4)
59. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (5)
60. ${q://QID35/ChoiceGroup/UnselectedChoices}rs Game Lovers (6)

Q8.1 Type in up to 4 attributes that are characteristic for ${q://QID35/ChoiceGroup/SelectedChoices}rs in comparison to ${q://QID35/ChoiceGroup/UnselectedChoices}rs.

61. Type in 1st attribute (1) _____
62. Type in 2nd attribute (2) _____
63. Type in 3rd attribute (3) _____
64. Type in 4th attribute (4) _____

Q8.2 Type in up to 4 attributes that are characteristic for the other group - the group of ${q://QID35/ChoiceGroup/UnselectedChoices}rs.

65. Type in 1st attribute (1) _____
66. Type in 2nd attribute (2) _____
67. Type in 3rd attribute (3) _____
68. Type in 4th attribute (4) _____

Carry Forward Selected Choices - Entered Text from "Type in up to 4 attributes that are characteristic for ${q://QID35/ChoiceGroup/SelectedChoices}rs in comparison to ${q://QID35/ChoiceGroup/UnselectedChoices}rs."

Q8.3 How applicable do you find the attributes you just gave for the ${q://QID35/ChoiceGroup/SelectedChoices}rs to be suitable for ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers?

	Does not apply at all (1)	Does not apply somewhat (2)	Neither apply nor does not apply (3)	Applies somewhat (4)	Applies very much (5)
Type in 1st attribute (x1)	69.	70.	71.	72.	73.
Type in 2nd attribute (x2)	74.	75.	76.	77.	78.
Type in 3rd attribute (x3)	79.	80.	81.	82.	83.
Type in 4th attribute (x4)	84.	85.	86.	87.	88.

Carry Forward Selected Choices - Entered Text from "Type in up to 4 attributes that are characteristic for the other group - the group of ${q://QID35/ChoiceGroup/UnselectedChoices}rs."

Q8.4 How applicable do you find the attributes you just gave for the ${q://QID35/ChoiceGroup/UnselectedChoices}rs to be suitable for ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers?

	Does not apply at all (1)	Does not apply somewhat (2)	Neither apply nor does not apply (3)	Applies somewhat (4)	Applies very much (5)
Type in 1st attribute (x1)	89.	90.	91.	92.	93.
Type in 2nd attribute (x2)	94.	95.	96.	97.	98.
Type in 3rd attribute (x3)	99.	100.	101.	102.	103.
Type in 4th attribute (x4)	104.	105.	106.	107.	108.

Q8.5 How typical do you perceive ${q://QID35/ChoiceGroup/SelectedChoices}rs to be of one common group of ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers? Choose for one image which is most suitable.

109. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (1)
110. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (2)
111. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (3)
112. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (4)
113. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (5)
114. ${q://QID35/ChoiceGroup/SelectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (6)

Q8.6 How typical do you perceive ${q://QID35/ChoiceGroup/UnselectedChoices}rs to be of one common group of ${q://QID13/ChoiceGroup/SelectedChoices} Gamers? Again choose for one image which is most suitable.

115. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (1)
116. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (2)
117. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (3)
118. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (4)
119. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (5)
120. ${q://QID35/ChoiceGroup/UnselectedChoices}r ${q://QID13/ChoiceGroup/SelectedChoices} Game Lovers (6)

Q9.1 To which extent do you agree with the following statements?

	None at all (1)	A little (2)	A moderate amount (3)	A lot (4)	A great deal (5)
To what extent do you feel that ${q://QID35/ChoiceGroup/SelectedChoices}rs are distinguishable from ${q://QID35/ChoiceGroup/UnselectedChoices}rs? (1)	121.	122.	123.	124.	125.
To what extent do you feel that ${q://QID35/ChoiceGroup/SelectedChoices}rs are different from ${q://QID35/ChoiceGroup/UnselectedChoices}rs? (2)	126.	127.	128.	129.	130.
To what extent do you feel that ${q://QID35/ChoiceGroup/SelectedChoices}rs form a well-defined group? (3)	131.	132.	133.	134.	135.

Q10.1 Thank you for participating in this study! The true goal of this study was not to test your preferences in different types of games - as indicated in the beginning of the questionnaire - but rather was to measure your group preferences and attitudes toward outgroup members. In order not to influence the naturally occurring group processes, this was not explained at the beginning of the questionnaire, but rather now, so that - in retrospect - participants are honestly informed about the goal of the research. If you want to have more information regarding the goal of this questionnaire, write a mail to the researcher: m.aksoy@student.utwente.nl