



Similarity attracts: The role of personality in similarity perceptions and children's attitudes towards refugees

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Previous research has shown that children's intergroup similarity judgements are based not only on ethnicity but also on other dimensions such as sports interest. The present research investigates the role of personality in perceived similarity between ingroup children and refugee outgroup children. A study was conducted among 9- to 12-year-old children ($N = 124$) at two elementary schools in the Netherlands. It was predicted and found that children take into account ethnicity as well as personality (whether a child is introverted or extraverted) when judging similarity of ingroup (Dutch) and outgroup (refugee) children. Furthermore, we predicted and found that greater perceived similarity between Dutch children and refugee children was associated with more positive attitudes towards refugee children. Finally, children felt lower levels of anxiety towards an extraverted compared to an introverted refugee child. Lower anxiety, in turn, was associated with more positive attitudes towards refugee children. Theoretical and practical implications are discussed.

Statement of contribution

What is already known?

- McGlothlin *et al.* (2005, *British Journal of Developmental Psychology*, 23, 227) found that similarity ratings are based not only on ethnicity but also on sports interest.
- Studies among adults show that extraversion is negatively related to anxiety and positively to cross-group friendships.

What does this study add?

- The present study shows that children also base similarity ratings on the personality trait extraversion.
- Higher similarity between self/ingroup and refugee children is related to positive outgroup attitudes.
- This study shows that extraverted children feel less anxiety to an extraverted refugee child.
- Lower anxiety in children is related to more positive attitudes to refugee children in general.

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In 2016, 23% of the 1.2 million asylum seekers who applied for international protection in the EU were 13 years or younger (Eurostat, 2017). Many of these children will attend schools in their country of settlement. As intergroup contact in general results in more positive attitudes (Pettigrew & Tropp, 2006), this provides an excellent opportunity for shaping positive intergroup relations between the children in the country of settlement and refugee children.

Positive intergroup contact will help refugee children integrate better. Indeed, teachers themselves stress that children can play an active role in supporting their new classmates (Stokes, 2016, December 12). Previous research, however, has shown that negative contact has a stronger effect on increasing prejudice than positive contact has on reducing prejudice (Barlow *et al.*, 2012).

Turner and Cameron (2016) point out that creating confidence in contact before it occurs can provide a solid basis for positive contact effects. Vicarious contact interventions, reading stories about positive intergroup contact, can already make children more confident (Cameron, Rutland, Brown, & Douch, 2006; Crisp & Turner, 2009; Vezzali, Stathi, & Giovannini, 2012). Notably, in these interventions information about outgroup children is presented not only about ethnicity, age and gender but also about hobbies and aspects of a child's personality. An underlying assumption in these interventions is that greater perceived similarity between ingroup and outgroup children will result in more positive outgroup attitudes. Previous research by McGlothlin, Killen, and Edmonds (2005) has shown that when judging similarity, children take into account sports interest besides ethnicity. The present study extends this work by examining whether children also base similarity judgements on personality. We hereby focus on the trait extraversion. In addition, we examine whether a match in similarity of a child's own personality and the personality of a fictitious refugee child reduces anxiety felt towards this child which, in turn, is expected to be related to more positive attitudes towards refugee children in general.

Creating confidence in contact with refugee children

From a young age onwards, children show a preference for their own group. A meta-analysis by Raabe and Beelmann (2011) including 113 studies found that 5- to 10-year-old children show prejudice based on ethnicity. Most of these studies focused on children's attitudes towards ethnic groups already living in their country such as Black and White children in the United States (McGlothlin *et al.*, 2005) and Turkish and Moroccan migrants in the Netherlands (Verkuyten, 2001). The recent influx of large numbers of refugee children in EU countries calls for research on how elementary school children respond to refugee children. Whereas a fair amount of research has been conducted investigating attitudes of adults towards refugees (Mayda, 2006; Murray & Marx, 2013; Pereira, Vala, & Costa-Lopes, 2010), surprisingly little research has focused on elementary school children's attitudes towards refugees (see Cameron *et al.*, 2006, and Cameron, Rutland, & Brown, 2007, for exceptions).

We focus on children in middle and late childhood as this is the age range in which stereotyping and prejudice has particularly profound effects on cognition and affect in a variety of domains (Bigler & Liben, 2006) including peer preferences (Aboud, Mendelson, & Purdy, 2003; Martin & Fabes, 2001). Childhood is considered to be a particularly critical time to investigate interpersonal relations as cross-ethnic friendships in childhood are associated with more positive intergroup attitudes in adolescence and adulthood (Ellison & Powers, 1994).

Similarity, personality, and interpersonal relations

In middle and late childhood, children prefer friends that are similar (Hartup, 1989; Kupersmidt, DeRosier, & Patterson, 1995; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). For example, Kupersmidt *et al.* (1995) collected peer reports in a sample of 554 9- to 11-year-old children. They found that similarity in gender, ethnicity, poverty, achievement, socioeconomic status, but also aggression and withdrawn behaviour, predicted children's friendships. These findings are in line with the similarity-attraction hypothesis (Byrne, 1971) which states that people are attracted to others who appear more similar.

Similarity in personality (defined as individual differences in feelings, thoughts, and behaviour that can be attributed to a person and describe the way that a person will react in various situations; Larsen & Buss, 2002) plays an important role in friendship formation. For example, Tani, Rossi, and Smorti (2005) had children complete the Big Five personality questionnaire for children and found that friends were more alike in terms of personality traits than non-friends.

In the present research, we focus on extraversion, one of the dimensions distinguished in the Big Five personality measure alongside agreeableness, neuroticism/emotional stability, conscientiousness, and openness to experience (John & Srivastava, 1999). Extraversion is an obvious place to start when examining the role of personality in interpersonal relations (see also Harris & Vazire, 2016, for a review on Big Five personality traits and friendship development). Research among adolescents has shown that extraversion is related to friendship and acceptance (Jensen-Campbell *et al.*, 2002; Selfhout, Branje, & Meeus, 2007). Extraverts tend to be more comfortable with strangers, select more friends than introverts and tend to be better at maintaining relationships.

There is some evidence that extraversion also matters in friendship selection in intergroup contexts. In a study with university students, Turner, Dhont, Hewstone, Prestwich, and Vonofakou (2014) found that extraversion was positively associated with a greater number of cross-group friendships. However, a recent study by Vezzali, Turner, Capozza, and Trifiletti (2018) did not find a significant association between extraversion and contact in high school students.

Do children take into account personality when judging similarity between ingroup and outgroup members? Using the perceptions of similarity task, McGlothlin *et al.* (2005) showed that U.S. children do not only consider ethnicity when judging similarity of children with different ethnic backgrounds, but also consider sports interest. In this task, White children were asked to judge six different peer dyads. The dyads differed in ethnicity (White, Black, or cross-race) and sports interest (same or different). They found that children judged peer dyads that did not share the same sports interest as less similar than dyads in which children had the same sports interest. In the present research, we extend this research by examining whether children take into account personality in their intergroup similarity judgements.

Similarity, anxiety, and intergroup attitudes

Research on *inclusion of the other in the self* (IOS) by Aron, Aron, and Smollan (1992; Aron, Aron, Tudor, & Nelson, 1991) demonstrated that individuals spontaneously describe an overlap of themselves and an outgroup member they have contact with and the extent to which this is the case depends strongly on the level of intimacy felt towards the other. Notably, Schubert and Otten (2002) have shown that this phenomenon also

occurs at the intergroup level, that is, not only an individual can become part of the self, also the outgroup can become part of the self, depending on the level of intimacy felt towards the other. They named this *overlap of the self, ingroup, and outgroup (OSIO)*. Important for the present research is that Schubert and Otten also found that both the IOS and the OSIO measure strongly correlated with measures of perceived *similarity* between the self and outgroup members. Based on this research, we expect that the more children perceive similarity between themselves/their ingroup and refugee (outgroup) children, the more positive outgroup attitudes.

Previous work by Cameron *et al.* (2006) supports this prediction. They examined a reading intervention in British schools among 5- to 11-year-old British children. Their results showed that reading children stories about positive interactions between British children and refugee (outgroup) children resulted in higher IOS. In turn, higher IOS was associated with more positive attitudes towards refugees. Based on the earlier mentioned work by Schubert and Otten (2002), we would expect the same pattern for similarity perceptions. So the greater the perceived similarity between the self/ingroup and outgroup children, the more the positive outgroup attitudes.

Finally, we expect that a fit between a child's own personality and the personality of an outgroup child will result in more positive attitudes via reduced anxiety towards this outgroup member. We hereby focus on the personality trait extraversion. In line with this prediction, West, Magee, Gordon, and Gullett (2014) found that knowledge that outgroup members share similar characteristics as ingroup members reduces anxiety felt towards outgroup members. Relevant for the present study is also the finding by Turner *et al.* (2014) that extraversion is negatively associated with anxiety towards outgroup members and positively associated with cross-group friendships. We therefore expect that when a child learns that a refugee outgroup child has a similar personality, this will reduce anxiety felt towards this refugee child. In turn, we expect that reduced anxiety is related to more positive attitudes towards refugee children.

The present research

Based on the review above, three hypotheses are tested in this research. First, we expect that greater perceived overall similarity between oneself/Dutch (ingroup) children and refugee (outgroup) children is associated with more positive attitudes towards refugee children (Hypothesis 1). Second, it is expected that dyads consisting of an ingroup (Dutch) child and outgroup (refugee) child who have similar personalities (both are extraverted or introverted) are perceived as more similar than dyads with different personalities (Hypothesis 2). Third, we expect that extraverted (introverted) children feel less anxiety towards an extraverted (introverted) refugee child compared to an introverted (extraverted) refugee child. Lower anxiety, in turn, is expected to be associated with more positive attitudes towards refugee children in general. In other words, we expect an indirect effect of perceived similarity to an outgroup child on outgroup attitudes via reduced anxiety (Hypothesis 3).

Method

Participants

A total of 128 Dutch children without a refugee background participated in the study. Four participants were excluded from the analyses because they did not participate

seriously. The remaining sample consisted of 124 children (65 boys, 59 girls) aged 9–12 years old ($M = 9.99$, $SD = 0.83$). A child had a migration background when he/she was born abroad or at least one of his/her parents was born abroad. Sixty-four children did not have a migration background, and 56 children had a migration background (there were 37 different nationalities). For four participants, this information was not available.

Data were collected in two elementary schools in Amsterdam (the Netherlands) at the end of February and beginning of March 2017. Socioeconomic status (SES) was known to be medium to high (Volksgezondheidszorg, 2016). Ethical approval was obtained beforehand (2017-SP-7687). Passive consent forms for parents were distributed. Five children did not obtain permission to participate in the research and were set on another task.

Procedure and materials

Before the study was conducted, the school principals were contacted to obtain information about school demographics and about whether the school had educational programmes on the refugee topic. Teachers had discussed the refugee topic in their classrooms but no educational programme had been run. Both schools indicated they had plans to discuss the theme in the future. According to the school principals and the teachers, children had not had contact with refugee children in the school context. As we could not exclude the possibility that children had contact with refugees outside the school, we included a measure which asked ‘Have you ever met a refugee?’ which could be answered with ‘yes’ or ‘no’. The present research was part of a larger survey study examining children’s attitudes towards refugees. It took the children between 20 and 30 min to complete the questionnaire. While completing the questionnaire, children could ask questions to the researcher and teacher. Gender was controlled for in the measures, the fictitious characters in the perceptions of similarity task, and intergroup anxiety measure matched the gender of participants. The different measures are presented below in the same order as they were presented in the survey.

Attitude towards refugee children

The attitude towards refugee children was measured with two different instruments with higher scores indicating more positive views of refugee children. The first instrument consisted of six positively formulated statements concerning refugees derived from Turner and Brown (2008). An example item is ‘I would like it if a refugee child would join our class’. The participants gave their answers on five-point scales, ranging from 1 (strongly disagree) to 5 (strongly agree). An outgroup attitude score was calculated by taking the average score of the six statements whereby higher scores indicated more positive attitudes ($\alpha = .75$). Second, 14 stereotypical traits (i.e., friendly, rude, smart) were presented which were derived from Doyle and Aboud (1995). Participants were asked how many refugees they thought would fit each trait. Answers were given on a four-point scale ranging from 1 (None) to 4 (All). Answers on the negative traits were recoded, and an average score was calculated by summing the scores on each trait and dividing them by 14 ($\alpha = .73$). The two attitude measures were strongly correlated ($r = .50$, $p < .001$). We standardized both measures and collapsed them into one measure of intergroup attitudes. A higher score indicated more positive attitudes towards refugee children.

Extraversion

Children's level of extraversion was measured by items derived from the Big Five Questionnaire for Children (BFQ-C), developed by Barbaranelli, Caprara, Rabasca, and Pastorelli (2003). The original BFQ-C consists of 65 items measuring the constructs neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. For the current research, the six extraversion items which scored highest on the PCA conducted by Muris, Meesters, and Diederer (2005) were included ($\alpha = .88$). An example item is 'I like to talk with others'. The items were scored on a five-point Likert scale ranging from 1 (Strongly agree) to 5 (strongly disagree), a higher score implied more extraversion.

Anxiety towards refugee child

Children were presented drawings of refugee children who were described as *introverted* or *extraverted*. Each participant was randomly assigned to one of the conditions. The drawings used were similar to those in the perceptions of similarity task (described below) in terms of dress and facial expression. Male participants were shown a refugee boy (Nizar) and female participants were shown a refugee girl (Alima). Children were asked to imagine themselves that the child would be new in their class.

In the *introversion target condition*, participants read a description of the refugee child who was described as shy, quiet, and introverted. In the *extraversion target condition*, the refugee child was described as outgoing, funny, and extraverted. The choice of words was based on the measurement of introversion and extraversion in the BFQ-C (Barbaranelli *et al.*, 2003). Participants were then asked: 'How do you think you would feel if [name of the child] would want to play with you?' The participants answered this question for eight different words (scared, fine, nervous, relaxed, worried, happy, sad, and cheerful) on a four-point scale, ranging from 1 (definitely not) to 4 (definitely). This measure was derived from Feddes, Noack, and Rutland (2009). Positive items were recoded and an average score was calculated with a higher score indicating more anxiety ($\alpha = .83$).

Similarity between the self/group and refugee children

The perceived overlap between the self/group and refugee children was measured with two items of the overlap of self, ingroup, and outgroup measure (OSIO; Schubert & Otten, 2002). The two items measured, respectively, perceived overlap between the self and the outgroup ('I' and 'refugee children') and between the ingroup (Dutch children) and outgroup (refugee children). Both items consisted of seven horizontal lines, each line had two circles. The circles reflected, respectively, the self and the outgroup (refugee children) and the ingroup (Dutch children) and the outgroup (refugee children). On each image, the circles overlap a bit more. Greater overlap reflected higher perceived similarity between the self/Dutch children and refugee children. The items were scored on a seven-point scale ranging from low similarity (1 = no overlap) to high similarity (7 = complete overlap). The scales correlated strongly ($r = .51, p < .001$) and were collapsed into one measure of perceived similarity between the self and refugee children.

Perceptions of similarity task

To examine whether perceived extraversion of refugee children plays a role in similarity perceptions, we adapted the perceptions of similarity task developed by

McGlothlin *et al.* (2005). The original task consists of six sets of illustrated picture cards. A dyad for each condition (same-race Black/shared interest, same-race Black/non-shared interest, same-race White/shared interest, same-race White/non-shared interest, cross-race/shared interest, cross-race/non-shared interest) was presented by McGlothlin *et al.* showing two children who were identical in dress and facial expression. In the present study, refugee children were depicted instead of Black children and sports interest was replaced with a description indicating whether a child was extraverted or introverted. The descriptions were based on the items in the Big Five Questionnaire for Children (BFQ-C; Barbaranelli *et al.*, 2003) which was also used to measure children's own level of extraversion. Like McGlothlin and colleagues, six dyads with each two children were used. Three drawings were used of children with a white skin and fair hair representing native Dutch children and three drawings of children with Arab features (darker skin, dark hair) representing refugee children.

A header was included with a description whether a child was introverted or extraverted. For example, in the extraversion condition this would be: 'These are Anna and Alima. Alima is a daughter of a refugee and likes to meet other people. Anna is Dutch and does not like to meet other people'. Other than physical features, the drawings of the children were similar in dress and facial expression. Other descriptions used were about whether or not a child likes to make jokes, likes to move a lot and be active, is talkative, and whether a child is happy and outgoing. The descriptions were accompanied by emoticons expressing the personality trait. For example, the personality description 'Alima likes to make jokes' was accompanied with a clown emoticon. If the child did not have that trait, an 'X' marked the emoticon accompanied by the phrase 'Anna does not like to make jokes'. Children were then asked to rate the similarity of the children in each pair using a five-point Likert scale ranging from 1 (not at all alike) to 5 (very alike).

Children were presented with six dyads: two mixed ethnicity dyads with a drawing of a native Dutch child and a drawing of a refugee child who either differed or had a similar personality trait; two same-ethnicity dyads of Dutch children who either were described to be introverted or extraverted; and two same-ethnicity dyads of refugee children who were either described to be introverted or extraverted. In Table 1, an overview of the six pairs of the original task used in McGlothlin *et al.* (2005) and the adapted materials for the present study is given.

Results

Preliminary analyses

First, we examined whether gender, age, migration background, and previous contact with refugees were correlated with the BFQ-C measure of extraversion, perceived similarity between the self/ingroup and refugee children, intergroup anxiety, and the collapsed measure of intergroup attitudes. No significant correlations were found (all $r_s < .18$, *ns*). These variables were, therefore, omitted from subsequent analyses.

In Table 2, means and standard deviations and intercorrelations are given for extraversion, perceived similarity between the self/ingroup and refugee children, intergroup anxiety, and the two measures of attitudes towards refugees. Notably, children's ratings of own extraversion were significantly higher than the mid-point of the scale, $t(123) = 17.20$, $p < .001$.

Table 1. Overview of the six dyads in the original Perceptions of similarity task (McGlothlin *et al.*, 2005) and the dyads in the current research based on the extraversion items of the BFQ-C (Barbaranelli *et al.*, 2003)

Ethnic composition pairs	Original sports interest task (McGlothlin <i>et al.</i> , 2005)	Current personality ratings task
Same ethnicity (Dutch)	Different interest	Different personality (extraverted vs. introverted)
Same ethnicity (Dutch)	Same interest	Same personality (extraverted)
Same ethnicity (Refugee)	Different interest	Different personality (extraverted vs. introverted)
Same ethnicity (Refugee)	Same interest: tennis	Same personality (extraverted)
Mixed (Dutch vs. Refugee)	Different interest	Different personality (extraverted vs. introverted)
Mixed (Dutch vs. Refugee)	Same interest: volleyball	Same personality (extraverted)

Table 2. Intercorrelations between the BFQ extraversion measure, perceived similarity between the self/ingroup (Dutch children) and refugee children (higher scores indicate greater similarity), anxiety felt when anticipating interaction with a new refugee child in class (higher scores indicate greater anxiety), statements reflecting attitudes towards refugee children (a higher score indicates a more positive attitude), and stereotype of refugee children (a higher score indicates a more positive stereotype)

	Scale range	<i>M</i> (<i>SD</i>)	1.	2.	3.	4.	5.
1. BFQ extraversion measure	1–5	4.31 (0.85)	1	-.02	-.05	.36***	.24**
2. Similarity between self/Dutch children and refugee children	1–7	2.72 (1.37)		1	-.04	.38***	.27**
3. Anxiety towards refugee child	1–4	1.65 (.54)			1	-.17 [†]	-.17 [†]
4. Attitude statements	1–5	3.51 (.73)				1	.50***
5. Stereotype of refugee children	1–4	2.97 (.27)					1

Note. *** $p < .001$; ** $p < .01$; [†] $p < .10$.

Similarity between Self/Ingroup and Attitudes towards Refugees

To examine the hypothesis that greater perceived similarity between the self/ingroup and refugee children was associated with more positive attitudes, we conducted a regression analysis taking the similarity measure as an independent variable and attitudes towards refugees as dependent variable. The results supported Hypothesis 1: Higher perceived similarity between the self/ingroup and refugee children was strongly associated with more positive attitudes towards refugee children, $b = .23$, $SE = .055$, $t(115) = 4.26$, $p < .001$.

Perceptions of similarity task

In order to test our hypothesis that children focus on shared personality as well as ethnicity when making similarity judgements, a 3(ethnicity of peer dyad: refugee, Dutch, mixed) by 2(personality: same, different) repeated measures ANOVA was conducted with perceived similarity of the pairs as dependent variable. The means and standard deviations are given in Table 3. A significant main effect for ethnicity was found, $F(1.65, 200) = 39.57$, $p < .001$, $\eta^2 = .25$. As expected, ethnicity had an effect on similarity ratings independent of personality. This confirms that ethnicity is an important criterion in similarity perceptions.

Table 3. Means and standard deviations for ratings of similarity in the perceptions of similarity task ($N = 124$)

Peer dyads, personality type	Perceptions of similarity rating <i>M</i> (<i>SD</i>)
Refugee peer dyad, different personality	2.50 (0.96)
Refugee peer dyad, same personality	4.28 (1.03)
Dutch peer dyad, different personality	2.36 (0.94)
Dutch peer dyad, same personality	4.18 (0.95)
Mixed peer dyad, different personality	1.94 (0.85)
Mixed peer dyad, same personality	3.74 (1.11)

Note. Scale ranges from 1 (not at all alike) to 5 (very alike).

Pairwise comparisons showed that mixed ethnic dyads were overall rated as significantly less similar ($M = 2.84$, $SD = 0.07$) than same ethnic dyads ($M = 3.32$, $SD = 0.07$; $p = .001$). Dyads with two Dutch children were rated as equally similar ($M = 3.27$, $SD = 0.07$) as dyads with two refugee children ($M = 3.34$, $SD = 0.07$; ns).

A significant main effect for personality was found, $F(1, 121) = 325.04$, $p < .001$, $\eta^2 = .73$. This indicates that, besides ethnicity, similarity ratings were also based on personality. Dyads similar in level of extraversion were rated as more alike ($M = 4.07$, $SD = 0.08$) than dyads differing in level of extraversion ($M = 2.27$, $SD = 0.07$; $p = .001$). The interaction between ethnic makeup and personality was not significant, $F(1.88, 226.98) = .09$, ns. In sum, these results confirm that similarity ratings are not only based on ethnicity but also on whether children are described as introverted or extraverted (Hypothesis 2).

Personality fit, anxiety, and attitudes towards refugees

In order to test if introverted (extraverted) children show less anxiety and more positive attitudes towards introverted (extraverted) refugee outgroup children (Hypothesis 3), the level of extraversion vs. introversion of participants themselves was examined. Results showed that most of the children rated themselves as highly extraverted ($M = 4.30$, $SD = 0.85$ on a 5-point scale). We conducted an outlier analysis following the procedure of Grubbs and Beck (1972). Three children were identified as outliers as they scored relatively low on the extraversion measure (z scores higher than 3.28 with a 5% upper significance level). These three children were excluded from subsequent analyses.

To examine our hypothesis that higher similarity in children's own personality and the personality of the refugee child (described as introverted or extraverted) was associated with lower anxiety and, in turn, more positive attitudes towards refugee children in general, a bootstrapping analysis was conducted using the PROCESS macro and guidelines (Hayes, 2013). This procedure is a commonly used method to test for indirect effects. The results are depicted in Figure 1. As expected, greater similarity in personality (for our children who scored high on extraversion this meant the fictitious refugee child who was described as extraverted) was associated with lower levels of anxiety felt towards an outgroup child, $b = -.24$, $SE = .10$, $t(116) = -2.42$, $p = .02$. Higher anxiety, in turn, was found to be associated with less positive outgroup attitudes, $b = -.31$, $SE = .15$, $t(116) = -2.07$, $p = .04$. As '0' was not contained within the confidence interval, the indirect effect was significant; 95% CI [0.0064–0.2018], supporting Hypothesis 3. The

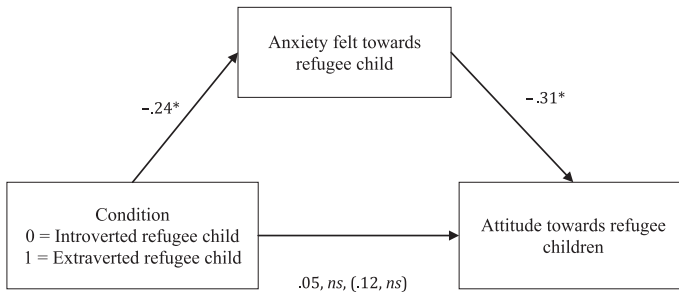


Figure 1. Indirect effect of condition (introverted vs. extraverted fictitious refugee child who is new in the classroom) on attitudes towards refugee children in general of elementary school children scoring high on extraversion ($N = 121$) via anxiety felt towards the fictitious refugee child.

Notes: Unstandardized regression coefficients are reported; * $p < .05$; ns = not significant.

children in our sample, who scored high on extraversion themselves, felt less anxious towards an extraverted refugee child compared to an introverted refugee child. In turn, lower anxiety was associated with more positive attitudes towards refugee children in general.

Discussion

The present research investigated associations between similarity perceptions, personality, anxiety, and outgroup attitudes. Our findings show that higher perceived similarity between the self/ingroup (Dutch children) on one hand and outgroup (refugee) children) on the other hand is associated with more positive attitudes towards refugee children. Furthermore, we extended previous findings by McGlothlin *et al.* (2005) by showing that personality plays an important role in children's similarity judgements. Finally, we found that children in our sample, who scored high on a measure of extraversion themselves, felt less anxiety towards an extraverted compared to an introverted refugee child. In turn, lower anxiety was found to be associated with more positive attitudes towards refugee children in general. Bootstrapping analyses showed that this indirect effect was significant.

In sum, in line with recent work by Turner *et al.* (2014) and Vezzali *et al.* (2018), our findings show that personality plays an important role in intergroup contexts. Notably, previous studies on the role of personality in intergroup contexts have been conducted with high school and university students and focused on migrant groups who already had a long history of settlement in the countries where the studies were conducted. To our knowledge, the present study is the first to study the role of personality in perceptions of interpersonal and intergroup relations focusing on children in late childhood (9- to 12-year-old). Furthermore, our study provides a contribution to the relative small body of work on children's perceptions of groups that are new to society, namely refugees.

The finding that greater similarity between the self/ingroup and the refugee outgroup is related to positive intergroup attitudes is in line with previous developmental work on similarity perceptions and formation of children's friendships which shows that similarity attracts (Hartup, 1989; Kupersmidt *et al.*, 1995; Rubin *et al.*, 1994). Our study extends existing work by showing that children in ethnically diverse elementary schools take into account personality in their judgements besides ethnicity.

We adapted the perceptions of similarity task (McGlothlin *et al.*, 2005) by including descriptions of extraversion versus introversion instead of sports interest as additional social information to dyads of Dutch (ingroup) and refugee (outgroup) children. Our findings confirm that besides ethnicity, children take account other comparison dimensions. However, our findings did confirm that children indeed consider ethnicity when judging similarity between ingroup and outgroup members, which is consistent with previous findings by McGlothlin *et al.* (2005) who focused on White and Black children in the United States. It is also consistent with previous work by Bennett and Sani (2003) who showed that ethnicity plays an important role in how children encode other children's behaviour.

Importantly, we could not directly test our fit hypothesis that children who are introverted show less anxiety towards introverted compared to extraverted refugee children and vice versa. Almost all of the children in our sample scored high on extraversion. Nevertheless, we did find that children overall felt less anxiety towards an extraverted compared to an introverted outgroup child. This finding is in line with Turner *et al.* (2014) who found that extraversion was negatively associated with intergroup anxiety. One possible explanation could be that children feel more comfortable in engaging with extraverted compared to introverted refugee children because socially outgoing children are easier to affiliate with.

Our findings have important implications for vicarious contact (reading) interventions that could be used to prepare elementary school children for future contact with refugee children (Turner & Cameron, 2016). For example, confidence in future contact with refugee children could be established by presenting children with stories including ingroup characters interacting with refugee characters who are similar in personality. These interventions can be easily implemented in the school curricula and can form the basis for classroom discussions.

Limitations and future directions

A question that remains unanswered is whether children who are extraverted (introverted) report greater IOS with an extraverted (introverted) outgroup child. A limitation of the present research is that we did not include a measure of IOS in the questionnaire, and we only measured perceived similarity of the self/ingroup with refugees as an outgroup (Schubert & Otten, 2002).

We found that almost all children rated themselves as high on extraversion. This may have been due to the fact that we used only six items of the original BFQ-C questionnaire. While the items did have sufficient reliability, future research would benefit from a more sensitive measurement of personality. Previous research has shown that results on the BFQ-C by children and their parents show large overlap (Barbaranelli, Fida, Paciello, Di Giunta, & Caprara, 2008; Olivier & Herve, 2015). In future studies, peer and teacher ratings of children's personality should be collected besides children's self-ratings. This will allow for a more refined examination of children's personality.

Another limitation in the present study is that our intergroup anxiety measure regarded only one refugee child (Nizar/Alima), while the items regarding attitudes and similarity speak of refugees as a group. These measures, therefore, are aimed at different levels (individual versus group). For future research, we recommend to include an intergroup anxiety measure that focuses on refugees as a group.

Future research should also include other personality dimensions. The dimensions agreeableness and openness to experience would be logical candidates. Previous research

among adolescents has shown that besides extraversion, agreeableness and openness to experience is positively associated with friendship and acceptance of others (Jensen-Campbell *et al.*, 2002; Selfhout *et al.*, 2007; Turner *et al.*, 2014; Vezzali *et al.*, 2018).

Despite these limitations, the present research advances prior work on similarity perceptions in intergroup contexts in three ways. First, we found that perceiving greater similarity between the self/ingroup and outgroup children is strongly related to outgroup attitudes. Second, besides ethnicity, children take into account ingroup and outgroup children's personality in judgements of similarity. Third, self-reported extraversion is associated with higher anxiety towards introverted compared to extraverted outgroup children. In turn, lower anxiety is associated with more positive attitudes towards outgroup children in general. Together, our findings suggest that personality descriptions should be considered when developing vicarious contact (reading) interventions to prepare children for future contact with refugee children.

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