Relating adolescents' exposure to legacy and digital news media and intergroup contact to their attitudes towards immigrants

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Abstract: Previous research has found that news coverage on immigration is often biased in negative ways and that it inspires the formation of negative attitudes towards immigrants. However, academic research about this link between news consumption and attitudes towards immigrants among adolescents remains limited. The current study aims to test this association from a media exposure and intergroup contact perspective using survey data from 875 adolescents in Flanders, Belgium. The findings show that only television news consumption, thus no other types of news consumption, was associated with adolescents' attitudes towards immigrants. Intergroup contact within the friend group, outside the school context, was linked to more positive attitudes. This study nuances earlier findings that news consumption predicts attitudes towards immigrants. Implications for future research are discussed.

Keywords: adolescents, contact hypothesis, immigrants, media exposure, news media consumption

Introduction

In recent years, especially since the so-called "refugee crisis" in 2015, immigration has been a prominent topic in political and societal debates worldwide. Studies have found that many people rely on the news media as their primary source of information about immigration (Boomgaarden & Vliegenthart, 2009), while also emphasizing the role of news media in the formation of opinions and attitudes toward immigrants (e.g. Atwell Seate & Mastro, 2016; De Coninck et al., 2018; Van Klingeren, Boomgaarden, Vliegenthart, & De Vreese, 2015). However, by promoting certain, often negative, opinions about immigration, news coverage about immigration does not always accurately reflect reality (Jacobs, Damstra, Boukes, & Swert, 2018). Consequently, this biased information in news coverage about immigration might inspire biased opinions and attitudes towards immigrants, which in turn might affect voting intentions and behaviour and ultimately migration policymaking (Ajzen, 1991; Eberl et al., 2018; Nelson & Kinder, 1996).

Therefore, information about the association between news consumption and public opinion about immigration serves as a crucial first step towards understanding voting behaviour, support for anti-immigration parties and immigration policy shifts. However, a relevant question that has not been addressed sufficiently concerns the association between *adolescents*' news consumption and their opinions about immigrants, as previous studies have mainly focused on this association in the adult population. The choice to study the adolescent population is twofold. First, adolescence is characterized by the importance attached to friendships, relationships, and memberships of social groups (Brown, 2004; Strasburger, Wilson, & Jordan, 2014), and hence serves as the critical period in which intergroup attitudes are formed (Bergamaschi, 2013; Duckitt, 2001; Duriez & Soenens, 2009). Second, researchers have argued that adolescence is a crucial period for political socialization. During the teenage years, the foundations of political and social attitudes are formed, which remain relatively stable over several years into adulthood (Hooghe & Wilkenfeld, 2008). Media have been shown to play a pivotal role in this formation of political attitudes (Scheufele, 2000).

In the current study, we will examine the link between adolescents' news consumption and their opinion about immigrants from a media exposure and an intergroup contact perspective. Specifically, we regard news exposure as an indirect type of contact with immigrants, and school and peer experiences with youths of different ethnicities as a direct type of intergroup contact (De Coninck, Rodríguez-de-dios, & d'Haenens, 2020). According to the media exposure and selection literature, such as the reinforcing spirals model (Slater,

2007), a mutual relationship exists between media exposure and selectivity of media contents, as media use influences attitudes and behaviour, and these in turn predict future media use. As such, (indirect) contact with immigrants through news coverage about immigration may inspire audience members' attitudes about immigrants. According to the contact hypothesis, intergroup contact reduces prejudice between members of traditionally opposed racial groups (Ata, Bastian, & Lusher, 2009; De Coninck, Rodríguez-de-Dios, & d'Haenens, 2020). Consequently, individuals who have (direct) contact with immigrants, for instance through relationships with peers from different ethnicities, hold more positive attitudes towards this group than individuals who lack contact (Abrams, McGaughey, & Haghighat, 2018). Examining the cross-sectional associations between legacy and digital media exposure to news, intergroup contact, and attitudes towards immigrants serve to bring more insight into key societal issues and challenges that are likely to persist in the coming years, as the issue of immigration is likely to dominate news cycles and remain a decisive factor in political and policy stances across Europe.

Literature review

For many people, news media are the main source of information on immigration (Boomgaarden & Vliegenthart, 2009). However, news coverage about immigration is not always neutral and often contains frames that are in line with the journalists' own views and interpretations towards immigration (Brüggemann, 2014). To frame is "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (Entman, 1993, p. 2). Often, news coverage about immigrants is rather negative (Bos, Lecheler, Mewafi, & Vliegenthart, 2016; Esses, Medianu, & Lawson, 2013) and conflict-centered (Eberl et al., 2018), regularly relating them to socio-economic problems, crime, and even terrorism (Caviedes, 2015; Haynes, Devereux, & Breen, 2005; Lawlor & Tolley, 2017). Different content analyses have shown that these negative frames are also present in news coverage on immigration in Belgian news media (Jacobs, Meeusen, & d'Haenens, 2016; Meeusen & Jacobs, 2017).

A large body of research suggests that news consumption is associated with audience members' opinions and attitudes about immigration (Atwell Seate & Mastro, 2016; Boomgaarden & Vliegenthart, 2009; De Coninck et al., 2018; Van Klingeren et al., 2015). In this study, we explore the link between news exposure and attitudes about immigrants based

on the media exposure and selection literature. Prominent within this literature is the reinforcing spirals model (Slater, 2007, 2015), which states that there is a mutual relationship between media exposure on the one hand, and attitudes and beliefs on the other hand. Particularly, exposure to certain media contents guides the formation of attitudes and beliefs about a topic that was covered in these media. In turn, these attitudes and beliefs will shape future media use, in the sense that audiences will select media contents that are in line with their attitudes and beliefs. Then, the attitudes that were initially informed by the media contents, will be further strengthened through exposure to media that are in line with these attitudes.

Based on the idea that media exposure informs the formation of attitudes and strengthens these attitudes over time, it could be argued that people who spend more time following news on immigration will hold attitudes toward immigration and immigrants that are in line with the views that were communicated in the news (Gamson & Modigliani, 1989; Nelson & Kinder, 1996). Several researchers have identified associations between immigration news consumption and the audience's attitudes towards immigrants (Arendt & Northup, 2015; Atwell Seate & Mastro, 2016; Boomgaarden & Vliegenthart, 2009; Eberl et al., 2018; Jacobs & van der Linden, 2017; Schemer, 2012), the dehumanization of immigrants (Esses et al., 2013), and the support for anti-immigrant political parties (Boomgaarden & Vliegenthart, 2007; Burscher, van Spanje, & de Vreese, 2015). Longitudinal evidence confirms that exposure to negative portrayals of ethnic and racial minorities increases negative attitudes towards these minorities over time (Schemer, 2014).

In this study, we distinguish between five sources of news: television news, radio news, printed newspapers, online newspapers, and news on social networking sites (SNS). In Flanders, SNS are adolescents' most used news source: 54% goes online on these platforms to follow the news on a daily basis. Radio (29%) and television (27%) are respectively the second and third most-used news media types by Flemish youths (Apestaartjaren, 2020). Several studies have focused on the associations between media-specific news consumption and the audience's opinions about immigrants. First, in support of the media exposure framework, associations between television news consumption and negative immigration attitudes (Héricourt & Spielvogel, 2014), ethnic stereotypes (Lee, Bichard, Irey, Walt, & Carlson, 2009), and decreased support for immigration (Gil de Zúñiga, Correa, & Valenzuela, 2012) were identified. However, these associations differ by broadcaster: public television news consumption is associated with positive attitudes about immigrants, while commercial television news consumption is associated with negative attitudes (De Coninck et al., 2018). Second, despite efforts to detect an association between radio news consumption and opinions

about immigrants, no empirical evidence for this association has been found to date (De Coninck et al., 2018; Héricourt & Spielvogel, 2014). Third, researchers have identified a strong negative impact of exposure to immigration news in printed newspapers and the reader's beliefs about immigration (Héricourt & Spielvogel, 2014). Fourth, online newspaper readership seems to be associated with negative attitudes towards immigration (Watson & Riffe, 2013). However, this association depends on the type of news website one visits: reading a public broadcaster's news website is associated with more positive attitudes about immigrants while reading a commercial broadcaster's news website is not associated with attitudes toward immigrants (De Coninck et al., 2018). Fifth, SNS have recently emerged as an additional source of news for their users. By providing timelines that can function as personalized news feeds, SNS allow their users to easily keep up with current events (Hermida, Fletcher, Korell, & Logan, 2012). Research has shown that reading the news on SNS can benefit young people's societal and political interests and their political engagement (Holt, Shehata, Strömbäck, & Ljungberg, 2013; Xenos, Vromen, & Loader, 2014). However, no empirical evidence for an association between immigration news consumption through SNS and opinions about immigrants has been found to date.

The empirical evidence for the association between news consumption and the attitudes towards immigrants that we presented above predominantly originates from research on adults. However, insights into this association in adolescents are lacking. Based on the media exposure framework, which suggests that news exposure will influence audience members' attitudes about immigrants, the findings that immigration is often covered in the news using negative frames, and the above findings concerning the relations between news consumption and attitudes towards immigrants, we propose the following hypothesis and research question:

> H1: Increased news consumption through television, printed newspapers, or online newspapers predicts more negative attitudes towards immigrants in adolescents.
>
> RQ1: Is adolescents' news consumption through radio or SNS linked to their attitudes towards immigrants?

Additionally, we will study the association between adolescents' news consumption and the attitudes towards immigrants from a contact hypothesis perspective. According to the contact hypothesis, which was proposed by Allport (1954), and has emerged as "a widely used framework in the study of intergroup relations and intergroup prejudice" (Broad, Gonzalez, &

Ball-Rokeach, 2014, p. 49), contact between different opposed racial groups reduces prejudice and stereotyping between these groups, as contact allows for discoveries of similarities of certain beliefs, views, and values that were previously unknown or unacknowledged (Allport, 1954; Ata et al., 2009). As such, people that have direct contact with individuals with a migration background should have more positive attitudes towards them than people who have not been directly in contact with these groups (Abrams et al., 2018; De Coninck et al., 2020). Indeed, research has shown that contact with ethnic minority members in the population reduces prejudice towards this ethnic minority (Wagner, Christ, Pettigrew, Stellmacher, & Wolf, 2006).

The contact hypothesis also applies to the adolescent population. A study by Masson and Verkuyten (1993) found that adolescents' prejudice towards ethnic minorities is associated with the amount of intergroup contact with members from these ethnic minorities. Schools in particular can play an important role in stimulating interethnic contact. Adolescents who attend more ethnically diverse schools generally report less prejudice and more positive attitudes towards immigrants than adolescents who go to less ethnically diverse schools (Wilson-Daily, Kemmelmeier, & Prats, 2018). However, to our knowledge, it has not yet been explored whether this intergroup contact may be a protective factor between adolescents' news exposure and their attitudes towards immigrants, limiting the influence of negative frames in news coverage on immigration. It is valuable to explore this question, as prejudice towards immigrants that stems from news exposure could then be counteracted by increasing more direct forms of intergroup contact. To test whether this is the case, we propose the following research questions and hypotheses:

H2: There is a positive association between the number of ethnic minority members in adolescents' friend groups and their attitudes towards immigrants.

H3: There is a positive association between the number of ethnic minority students at school and adolescents' attitudes towards immigrants.

RQ2: Does contact with ethnic minority members moderate the association between news consumption and adolescents' attitudes towards immigrants?

Methods

Data and sample

Data from the Leuven Adolescent Survey (LAdS) was used in this study. LAdS aims to gather empirical data on family relations, media use, and opinions on current affairs from adolescents in secondary education by conducting an online survey among Flemish pupils. Their data were recorded on tablets using an app from Qualtrics, an online tool that allows users to program and distribute their own surveys, during visits to the participating schools by the researchers. Data collection took place between November 2017 and April 2018. The study was approved by the Social and Societal Ethics Committee of KU Leuven (case number G-2017 09 933), and informed consent was obtained from the participants.

The respondents for this study were drawn using two-stage sampling (De Coninck, Dekeyser, & Matthijs, 2019). During the first phase, secondary schools were selected using disproportional quota sampling. Subgroups were defined based on education type, province, and municipality. Schools were then selected from these subgroups (De Coninck et al., 2019). During the second phase, the participating schools were asked to select classes that would participate in the survey. The aim was to select two classes from each grade and each education option (ASO, TSO, KSO or BSO[1]). Ultimately, only schools that offered ASO, TSO, and BSO agreed to participate. The respondents were reassured their answers would be processed anonymously and confidentially. In total, 879 pupils participated in this study. Data inspection revealed that one respondent indicated being in KSO, while this education option was not offered in the participating schools. Hence, this case was removed from the dataset to prevent bias due to inaccurate responses. Furthermore, three cases that indicated that they were older than 20 and were also excluded from the analyses. Therefore, our final dataset consisted of 875 respondents between 13 and 20 years old (M = 16.09, SD = 1.40). The sample included 567 boys (64.8%) and 308 girls (35.2%). 311 respondents were in ASO (35.5%), 362 attended TSO (41.4%), and 202 were in BSO (23.1%).

[1] ASO: General Secondary Education; TSO: Technical Secondary Education; KSO: Artistic Secondary Education; BSO: Vocational Secondary Education.

Measures

Attitudes towards immigrants. The measurement of the opinion on immigrants (Cronbach's α: 0.94) was based on seven items with a four-point scale (European Social Survey, 2002, 2014). Following principal component analysis with direct oblimin rotation, through which one factor emerged, all items were averaged into one. Respondents were asked how many immigrants from certain groups should be allowed to enter Belgium. These groups were: 'immigrants of the same ethnicity as the majority of the Belgian people', 'immigrants of a different ethnicity as the majority of the Belgian people', 'immigrants from the richer countries of Europe', 'immigrants from the poorer countries of Europe', immigrants from the richer countries outside of Europe', 'immigrants from the poorer countries outside of Europe' and 'immigrants from Muslim countries who want to work in Belgium'. The seventh item concerning immigrants from Muslim countries was not in the ESS questionnaires but was added because the majority of immigrants entering Europe originate from predominantly Muslim countries and because anti-Muslim sentiments are generally more intense than anti-foreigner attitudes (Spruyt & Elchardus, 2012). Four answer options were provided: "allow none" (1), "allow some" (2), "allow several" (3), and "allow many" (4).

News consumption. The respondents were asked to indicate on a seven-point scale how many days a week in the past month they have consumed news on television, radio, printed newspapers, online newspapers, and social networking sites. The answer options ranged from 0 days a week (never) to 7 days a week (daily).

Intergroup contact. Intergroup contact was operationalized in two ways. First, we measured the number of ethnic minority members in adolescents' friend groups by asking them whether their friends were mainly of Belgian or non-Belgian descent. It was clarified that people with a different ethnicity were born in a different country than Belgium or had parents that were born in a different country than Belgium. This resembles the definition of migration background in this study, where someone is considered to have a migration background when the participant or at least one of their parents was born in a different country than Belgium. Three answer options were provided: "only or mainly Belgian" (1), "about as many Belgians as non-Belgians" (2), and "only or mainly non-Belgian (3). Second, the respondents were asked to describe their school in terms of the number of students from ethnic minorities, and they were given five answer options: "A school where almost everyone is Belgian" (1), "A school where the majority is Belgian" (2), "A school were about half of the people is Belgian" (3), "A school where the minority is Belgian" (4), and "A school where almost nobody is Belgian" (5).

Hence, for both measures, a lower score indicated less ethnic diversity and a higher score indicated more ethnic diversity among adolescents' friends or among the people they went to school with.

Control variables. In this study, we controlled for age, gender (1 = boy, 2 = girl), education type (1 = BSO, 2 = TSO, 3 = ASO), political preference, and migration background. Political preference was measured by asking the respondents to indicate which Flemish political party they preferred. Answer options ranged from the most left-wing (PVDA) to the most right-wing (*Vlaams Belang*) parties, with a lower score indicating a more left-wing stance and a higher score indicating a right-wing stance. The mean score on political preference was 4.65 (out of 7; *SD* = 1.60). To determine whether the respondents had a migration background, they were asked about their own country of birth and that of their parents. A score of 0 was assigned if the person was born in Belgium and a score of 1 was assigned if the person was born in a different country. Subsequently, the aggregate 'country' scores of the respondent, their mother, and their father were calculated. A score of 0 indicated that neither the adolescent nor his or her parents were born outside of Belgium, meaning that the adolescent has no migration background. A score of 1, 2, or 3 indicates that at least one person was born outside of Belgium, indicating that the adolescent has a migration background. 708 respondents (80.9%) did not have a migration background, 153 respondents (17.5%) reported that either they themselves of their parents were born in a different country than Belgium.

Analysis

Ordinary least squares (OLS) regressions were conducted using IBM SPSS Statistics 26. A linear regression model with the control variables in block 1, the news consumption variables in block 2, and the intergroup contact variables in block 3[2], was tested to answer RQ1 and to test H1, H2, and H3. To answer RQ2, moderation analyses using the PROCESS macro for SPSS were performed (Preacher & Hayes, 2004). Specifically, the moderations were tested using PROCESS Model 1 with the attitude towards immigrants as the dependent variable, the news consumption variables as independent variables, the intergroup contact variables as

[2] An additional linear regression model was tested, in which the order of the news consumption variables and the intergroup contact variables was switched, to examine whether the different order of predictors would change the effects. This turned out to not be the case, as no important differences concerning the effect sizes or significance of effects between the two models were identified. We have added the outcomes of this additional regression analysis in Appendix 1.

moderators, and age, gender, education type, political preference, and migration background as control variables. Because PROCESS does not produce standardized regression coefficients, all variables were standardized prior to the analyses.

Results

On average, the respondents' scores concerning their attitudes towards immigrants were near the average of the scale (M = 2.54 (out of 4), SD = .75). The adolescents in this study predominantly used social media to stay up to date with current events (M = 5.88 (out of 7), SD = 2.47), followed by radio (M = 3.96, SD = 2.53) and television (M = 3.73, SD = 2.29). Online newspapers (M = 2.77, SD = 2.33) and printed newspapers (M = 1.76, SD = 1.51) were used the least by adolescents to follow the news. 65.6% of the respondents indicated that their friend group consisted mainly of adolescents of Belgian descent, while 27.2% had a friend group that consisted of an equal number of friends of Belgian and non-Belgian descent. Only 4.5% said that their friend group mainly consisted of people from non-Belgian descent. Similarly, most respondents (74.5%) indicated that the pupils at their school were almost all or mainly of Belgian descent. 18.1% of the adolescents said that approximately half of the people at their school were of Belgian descent, while only 4.6% went to schools where a minority of the people or almost nobody was of Belgian descent.

The zero-order correlations between the variables in this study are presented in Table 1. In light of our research question and hypothesis concerning the association between news consumption and attitudes towards immigrants, we found negative correlations between both news consumption through television (r = -.10, p = .008) and through radio (r = -.07, p = .048) with the attitude towards immigrants. This indicated that adolescents who spent more time following the news through television or radio on average reported more negative attitudes towards immigrants. The correlations of attitudes towards immigrants with news consumption via printed newspapers, online newspapers, or social media were not significant. Concerning the role of intergroup contact in adolescents' attitudes towards immigrants, we found a significant positive correlation between the ethnicity of friends (r = .17, p < .001), but not of other people at the school, and the attitude towards immigrants, indicating that adolescents whose friend group is more diverse reported a more positive attitude towards immigrants.

Table 1. Zero-order correlations.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Gender	1												
2. Age	-.11**	1											
3. Education type	.32***	-.38***	1										
4. Political preference	-.24***	.01	-.12*	1									
5. Migration background	.06	.13***	-.05	-.13*	1								
6. News on TV	-.05	-.07*	.01	.01	-.06	1							
7. News on radio	.04	-.06	.17***	.03	-.20***	.32***	1						
8. News on paper	-.08*	-.02	.10*	0	-.05	.28***	.22***	1					
9. News online	-.01	.12**	.11*	.05	.04	.18***	.15**	.28***	1				
10. News on SNS	.05	.06	.07*	.14*	.03	.26***	.24***	.11**	.26***	1			
11. Ethnicity of friends	.08*	.07*	-.08*	-.14*	.40***	-.08*	-.23***	-.05	-.01	-.03	1		
12. Ethnicity of school	.10**	.09*	-.20***	.01	.13***	.01	-.12***	-.06	0	-.04	.21***	1	
13. Attitude towards immigrants	.19***	-.09*	.29***	-.36***	.18***	-.10**	-.07*	-.06	.04	-.02	.17***	0	1

Note: Pearson correlations. * $p < .05$, ** $p < .01$, *** $p < .001$. Gender: boy = 1, girl = 2. Education type: BSO = 1, TSO = 2, ASO = 3.

The regression outcomes for RQ1, H1, H2, and H3 are presented in Table 2. We controlled for adolescents' gender, age, education type, political preference, and migration background. Together, these control variables explained a significant proportion of the variance in the attitude towards immigrants (Adj. R^2 = .23, R^2 Change = .24, F Change (5, 256) = 16.55, p < .001). While gender (β = .08, p = .18) and age (β = .01, p = .84) were not significantly associated with adolescents' attitude towards immigrants, education type (β = .26, p< .001), political preference (β = -.29, p < .001), and migration background (β = .20, p < .001) were. Hence, adolescents who were enrolled in ASO, held left-wing political preferences, and had a migration background generally reported a more positive attitude towards immigrants than those enrolled in TSO and BSO, those with a right-wing political preference, and those without a migration background.

Table 2. Regression outcomes for the associations between news consumption, intergroup contact, and the attitudes towards immigrants.

	Attitudes towards immigrants		
	Model 1	Model 2	Model 3
Control variables			
Gender	.08	.07	.06
Age	.01	-.01	0
Education type	.26***	.23**	.23**
Political preference	-.29***	-.29***	-.28***
Migration background	.20**	.20**	.14*
News consumption variables			
News on TV		-.13*	-.12
News on radio		.07	.07
Newspapers		-.04	-.06
News online		.07	.07
News on SNS		-.04	-.03
Intergroup contact variables			
Ethnicity of friends			.18**
Ethnicity of school			-.07
Adj. R^2	.23	.24	.26
ΔR^2		.02	.03**

Note: Standardized regression coefficients. * $p < .05$, ** $p < .01$, *** $p < .001$. Gender: boy = 1, girl = 2. Education type: BSO = 1, TSO = 2, ASO = 3.

RQ1 and H1 concerned the roles of news consumption as predictors of adolescents' attitudes towards immigrants. The news consumption variables do not add a significant proportion of additional explained variance in attitudes towards immigrants (Adj. $R^2 = .24$, R^2 Change = .02, F Change(5, 251) = 1.56, $p = .17$). Only news consumption through television emerged as a weak but significant negative predictor of attitudes towards immigrants ($\beta = -.13$, $p = .03$), indicating that adolescents that spend more time following the news through television generally have a more negative stance towards immigrants than adolescents who follow the news through television to a lesser extent. However, this association became non-significant when the intergroup contact variables were added into the model ($\beta = -.12$, $p = .05$), which urges us to be careful about concluding that this association between television news consumption and the attitudes towards immigrants is also present in the population. While the zero-order correlations suggested that spending more time following the news on the radio was linked to a more negative attitude towards immigrants ($r = -.07$, $p = .048$), this finding was not confirmed in the regression outcomes ($\beta = .07$, $p = .29$). Similarly, news consumption through printed newspapers ($\beta = -.04$, $p = .51$), online newspapers ($\beta = .07$, $p = .20$), and SNS ($\beta = -.03$, $p = .56$) did not significantly predict adolescents' attitudes towards immigrants. Therefore, H1, which predicted that news consumption through television, printed newspapers, or online newspapers would be linked to more negative attitudes towards immigrants, is online partially supported: only television news consumption emerged as a significant negative predictor of adolescents' attitudes towards immigrants.

H2 and H3 concerned the association between intergroup contact and attitudes towards immigrants. Overall, the intergroup contact variables added a small but significant proportion of explained variance in attitudes towards immigrants to the model (Adj. $R^2 = .26$, R^2 Change = .03, F Change (2, 249) = 5.12, $p = .01$). H2 predicted a positive association between the ethnic diversity of adolescents' friend groups and their attitudes towards immigrants. The regression outcomes reveal that the ethnicity of friends is a weak but significant positive predictor of adolescents' attitudes towards immigrants ($\beta = .18$, $p = .003$). H2 is therefore supported: adolescents with a more diverse friend group generally report more positive attitudes towards immigrants than adolescents whose friend group is less ethnically diverse. H3 suggested that there is a positive association between the ethnic diversity at school and

adolescents' attitudes towards immigrants. The regression outcomes are unable to provide support for this hypothesis, as the ethnic diversity at school is not significantly associated with these attitudes (β = -.07, p= .23).

RQ2 concerned the role of intergroup contact as a moderator in the association between adolescents' news consumption and their attitudes towards immigrants. The regression coefficients for the moderating variables are presented in Table 3. The findings revealed that, while we found a significant link between television news consumption and the attitude towards immigrants, neither the ethnicity of friends (β = .08, *95%CI* [-.05; .21]) nor the ethnicity of the people they go to school with (β = -.01, *95%CI* [-.11; .10]) served as significant moderators of this association. Hence, the role of television news consumption in the formation of adolescents' attitude towards immigrants was not significantly different depending on the ethnic diversity of their friend group or that of the people they went to school with. Similarly, the ethnicity of friends or of the people they went to school with did not moderate the relationship between news consumption through radio, printed newspapers, or SNS, and the attitudes towards immigrants. Concerning news consumption through online newspapers, the outcomes reveal that ethnicity of friends did not significantly moderate between news consumption and attitudes towards immigrants (β = -.06, *95%CI* [-.18; .06]). However, the ethnicity of the people adolescents went to school with emerged as a significant negative moderator from the analyses (β = -.13, *95%CI* [-.22; -.03]).

Table 3. Regression outcomes for the moderating variables Ethnicity of friends and Ethnicity of school for the dependent variable Attitudes towards immigrants.

	Ethnicity of friends		Ethnicity of school	
	β	Bootstrap 95% CI	β	Bootstrap 95% CI
News on TV	.08	[-.05; .21]	-.01	[-.11; .10]
News on radio	-.07	[-.20; .06]	-.04	[-.15; .08]
Newspapers	-.01	[-.13; .10]	.03	[-.07; .14]
News online	-.06	[-.18; .06]	-.13	[-.22; -.03]
News on SNS	-.04	[-.16; .08]	-.01	[-.13; .12]

Note: Standardized regression coefficients and bootstrapped 95% confidence intervals, controlled for gender, age, education option, political preference, and migration background.

Further investigation of the conditional effects (Figure 1) concerning the moderating role of the ethnic diversity at school in the association between online news consumption and attitudes towards immigrants revealed that the link between online news consumption and attitudes towards immigrants is only significant when the ethnic diversity at school is low (β = .18, *95%CI* [.03; .33]), but not when it is average (β = .04, *95%CI* [-.06; .15]) or high (β = -.10, *95%CI* [-.24; .05]). Therefore, only adolescents that went to a school where almost all or the majority of the students were of Belgian descent held more positive attitudes towards immigrants as they spent more time following the news through online news platforms.

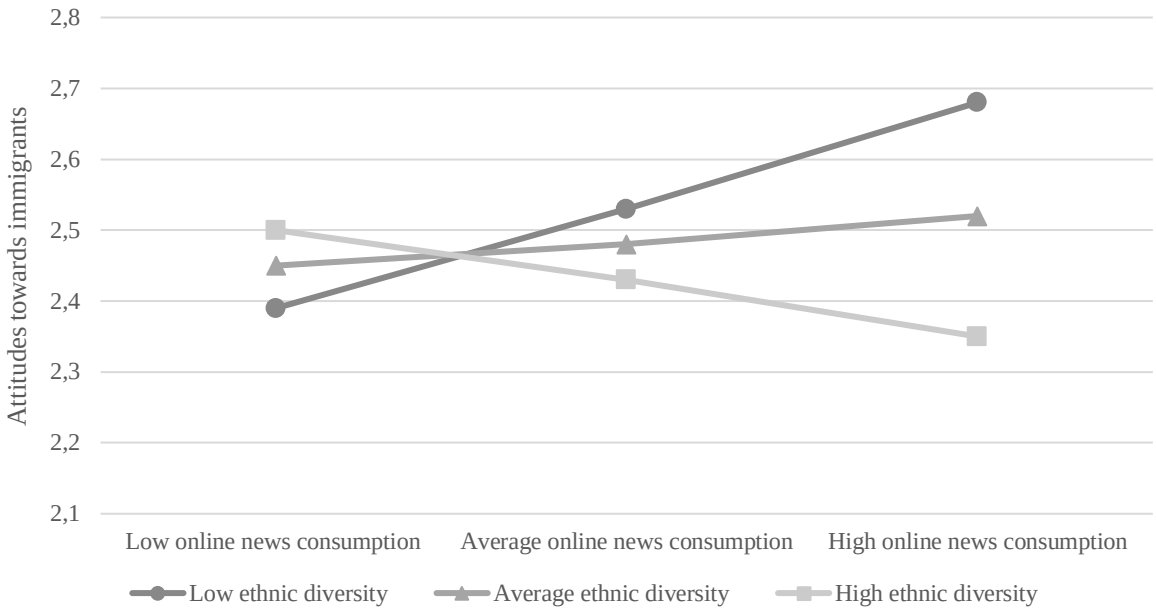

Figure 1. Moderation plot for the moderator ethnicity of the school in the association between online news consumption and the attitudes towards immigrants.

Discussion

Immigration is a concern of many European citizens (European Commission, 2018). It is often covered in the news, but not always from an objective perspective. Because media are important actors in the shaping of opinions and attitudes, this study sought to examine the association between adolescents' news media use and their attitudes towards immigrants. Additionally, we sought to study the roles of intergroup contact in this association. Based on the media exposure framework, which states that as audiences spend more time using media their beliefs will align with the views communicated in these media, we hypothesized that an increase in news consumption through television, printed newspapers, and online newspapers was associated with more negative attitudes towards immigrants due to the negative undertone

that is sometimes present in news coverage on immigration, and asked whether this was also the case for news consumption through radio and SNS as previous empirical evidence concerning these news types was lacking. The findings revealed that only news consumption through television, but not radio, printed newspapers, online newspapers, or SNS, is a negative predictor of adolescents' attitudes towards immigrants. Adolescents who spend more time following the news on television report a significantly more negative attitude towards immigrants than adolescents who are less avid television news consumers. The finding that only television news consumption predicts adolescents' attitudes towards immigrants is contrary to previous studies that did identify an association between news media use and attitudes about immigrants (Atwell Seate & Mastro, 2016; Boomgaarden & Vliegenthart, 2009; De Coninck et al., 2018; Van Klingeren et al., 2015).

This study also sought to examine the role of intergroup contact in the formation of attitudes towards immigrants. Based on the contact hypothesis, which states that intergroup contact reduces prejudice between traditionally opposed racial groups (Ata et al., 2009), we hypothesized that intergroup contact, through ethnic diversity in adolescents' friend groups and schools, would positively predict their attitudes towards immigrants. The findings suggest that the closeness of the relationship with an ethnically diverse population is of importance, as only the presence of ethnic minority members in the friend group, but not at the school, positively predicts adolescents' attitudes towards immigrants. This finding partly corroborates earlier conclusions that intergroup contact reduces prejudice towards immigrants (Abrams et al., 2018; De Coninck et al., 2020), but is still surprising because previous research has found that contact with ethnic minority students at schools was an important negative predictor of prejudice (Wilson-Daily et al., 2018). Following up on this outcome, we aimed to determine whether intergroup contact moderates between adolescents' news consumption and attitudes towards immigrants. Overall, the outcomes show that intergroup contact does not moderate this association, one exception being the number of ethnic minority students at the school in the association between news consumption through online newspapers and the attitudes towards immigrants. When adolescents go to a school where the majority of the students is of Belgian descent, those who spend more time reading the news in online newspapers will hold more positive attitudes towards immigrants. The link between online newspaper consumption and attitudes towards immigrants did not emerge as significant for adolescents who go to schools with more ethnic diversity. Although earlier Belgian studies have shown that pupils who attend ethnically diverse schools are less likely to be prejudiced against migrants (Van Houtte et al., 2019), it is possible that the mass-mediated intergroup contact that pupils from less diverse

schools experience via their main source of news consumption – the digital environment – somewhat counters their lack of direct intergroup contact (and the prejudice-reducing effects that go along with it). Such findings should encourage educators and policy makers to stimulate news consumption by adolescents. Another possible explanation may be that less ethnically diverse schools are frequently located in rural Belgian regions (Van Houtte et al., 2019). These regions are known to have a high concentration of individuals with a high socioeconomic status, who tend to hold positive attitudes towards migrants (De Coninck et al., 2020). As found by Meeusen and Boonen (2020), children often resemble their parents in their political and social attitudes with a higher similarity for socially salient attitudes (like migration). This is particularly the case when these attitudes are frequently discussed in the household (Meeusen & Boonen, 2020), which is more likely to be the case when adolescents actively consume news. Thus, the moderation effects may also signal important status differences among pupils of ethnically diverse and ethnically uniform schools.

The outcomes of this study may inspire and advance further research in two ways. First, in this study only a distinction was made between different types of news consumption based on the channels through which the news is consumed. Further research could further take into account the context of the news consumption and the news contents to which the individual is exposed, to paint a more complete and nuanced picture of the contemporary news media environment and its role in the formation of attitudes towards immigrants. Second, education type, political preference, migration background, and the diversity of the friend group emerged as significant demographic and psychosocial predictors of attitudes towards immigrants. While several valuable contributions have already been made (e.g. De Coninck et al., 2018, 2019), more evidence on the roles of different demographic and psychosocial predictors of attitudes towards immigrants could advance the knowledge on the different factors that may play a role next to news consumption in the formation of attitudes towards immigrants. As such, current insights into this key societal issue can be further enhanced.

Two limitations of this study should be addressed. First, this study used cross-sectional data to test the hypotheses and to answer the research questions, which does not allow us to draw causal conclusions. Despite the fact that we have defined independent and dependent variables in the regression models based on previous empirical evidence, it is also possible that attitudes towards immigrants predict news consumption and intergroup contact. To assess whether this may be the case, future research should test these hypotheses using longitudinal or experimental designs. Second, the survey included self-report measures that may carry bias. Especially the measure of the attitudes towards immigrants, which is a sensitive topic, may be

subject to social desirability bias and therefore, extreme opinions about immigrants may have been moderated. In light of this, we have analyzed and interpreted the findings of this study with caution and advise future research to also develop and validate non self-report measures for attitudes towards immigrants.

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References

Abrams, J. R., McGaughey, K. J., & Haghighat, H. (2018). Attitudes toward Muslims : A test of the parasocial contact hypothesis and contact theory. *Journal of Intercultural Communication Research*, *5759*, 1–17.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.

Apestaartjaren. (2020). *De digitale leefwereld van jongeren* [The digital environment of adolescents]. Ghent: Apestaartjaren.

Arendt, F., & Northup, T. (2015). Effects of long-term exposure to news stereotypes on implicit and explicit attitudes. *International Journal of Communication*, *9*, 2370–2390.

Ata, A., Bastian, B., & Lusher, D. (2009). Intergroup contact in context: The mediating role of social norms and group-based perceptions on the contact – prejudice link. *International Journal of Intercultural Relations*, *33*, 498–506.

Atwell Seate, A., & Mastro, D. (2016). Media's influence on immigration attitudes: An intergroup threat theory approach. *Communication Monographs*, *83*(2), 194–213.

Bergamaschi, A. (2013). Adolescents and prejudice: A comparative study of the attitudes of

two European adolescent populations regarding the issues that are raised by increasing cultural and religious pluralism. *International Journal of Intercultural Relations*, *37*(3), 302–312.

Boomgaarden, H. G., & Vliegenthart, R. (2007). Explaining the rise of anti-immigrant parties: The role of news media content. *Electoral Studies*, *26*(2), 404–417.

Boomgaarden, H. G., & Vliegenthart, R. (2009). How news content influences anti-immigration attitudes: Germany, 1993-2005. *European Journal of Political Research*, *48*(4), 516–542.

Bos, L., Lecheler, S., Mewafi, M., & Vliegenthart, R. (2016). It's the frame that matters: Immigrant integration and media framing effects in the Netherlands. *International Journal of Intercultural Relations*, *55*, 97–108.

Broad, G. M., Gonzalez, C., & Ball-Rokeach, S. J. (2014). Intergroup relations in South Los Angeles – Combining communication infrastructure and contact hypothesis approaches. *International Journal of Intercultural Relations*, *38*, 47–59.

Brown, B. B. (2004). Adolescents' relationships with peers. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology* (pp. 363–394). New Jersey: Wiley.

Brüggemann, M. (2014). Between frame setting and frame sending: How journalists contribute to news frames. *Communication Theory*, *24*(1), 61–82.

Burscher, B., van Spanje, J., & de Vreese, C. H. (2015). Owning the issues of crime and immigration: The relation between immigration and crime news and anti-immigrant voting in 11 countries. *Electoral Studies*, *38*, 59–69.

Caviedes, A. (2015). An emerging 'European' news portrayal of immigration? *Journal of Ethnic and Migration Studies*, *41*(6), 897–917.

De Coninck, D., Dekeyser, G., & Matthijs, K. (2019). *Leuven Adolescents Survey (LAdS). Onderzoeksrapport van de Vlaamse dataverzameling (2017-2019)*. KU Leuven.

De Coninck, D., Matthijs, K., Debrael, M., Joris, W., de Cock, R., & d'Haenens, L. (2018). The relationship between media use and public opinion on immigrants and refugees: A Belgian perspective. *Communications*, *43*(3), 403–425.

De Coninck, D., Matthijs, K., Debrael, M., de Cock, R., & d'Haenens, L. (2019). Unpacking

attitudes on immigrants and refugees: A focus on household composition and news media consumption. *Media and Communication, 7*(1), 43-55.

De Coninck, D., Rodríguez-de-Dios, I., & d'Haenens, L. (2020). The contact hypothesis during the European refugee crisis: Relating quality and quantity of (in)direct intergroup contact to attitudes towards refugees. *Group Processes & Intergroup Relations*. doi:10.1177/1368430220929394.

Duckitt, J. (2001). A dual-process cognitive-motivational theory of ideology and prejudice. *Advances in Experimental Social Psychology, 33*, 41–113.

Duriez, B., & Soenens, B. (2009). The intergenerational transmission of racism: The role of right-wing authoritarianism and social dominance orientation. *Journal of Research in Personality*, *43*(5), 906–909.

Eberl, J.-M., Meltzer, C. E., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., … Strömbäck, J. (2018). The European media discourse on immigration and its effects: a literature review. *Annals of the International Communication Association*, *42*(3), 207–223.

Entman, R. M. (1993). Framing: Toward clarification of a fracture paradigm. *Journal of Communication*, *43*(4), 51–58.

Esses, V. M., Medianu, S., & Lawson, A. S. (2013). Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees. *Journal of Social Issues*, *69*(3), 518–536.

European Commission. (2018). *Standard Eurobarometer 90 (Autumn 2018) First results: Public opinion in the European Union*. Brussels: European Commission.

European Social Survey. (2002). *The European Social Survey round 1: Source questionnaire*. London: ESS ERIC Headquarters, Centre for Comparative Social Surveys, City University London.

European Social Survey. (2014). *European Social Survey Round 7: Source questionnaire*. London: ESS ERIC Headquarters, Centre for Comparative Social Surveys, City University London.

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, *95*(1), 1–37.

Gil de Zúñiga, H., Correa, T., & Valenzuela, S. (2012). Selective exposure to cable news and immigration in the U.S.: The relationship between FOX News, CNN, and attitudes toward Mexican immigrants. *Journal of Broadcasting and Electronic Media*, *56*(4), 597–615.

Haynes, A., Devereux, E., & Breen, M. J. (2005). Fear, framing and foreigners: The othering of immigrants in the Irish print media. *Critical Psychology*, *16*, 100–121.

Héricourt, J., & Spielvogel, G. (2014). Beliefs, media exposure and policy preferences on immigration: Evidence from Europe. *Applied Economics*, *46*(2), 225–239.

Hermida, A., Fletcher, F., Korell, D., & Logan, D. (2012). Share, like, recommend: Decoding the social media news consumer. *Journalism Studies*, *13*(5–6), 815–824.

Holt, K., Shehata, A., Strömbäck, J., & Ljungberg, E. (2013). Age and the effects of news media attention and social media use on political interest and participation: Do social media function as leveller? *European Journal of Communication*, *28*(1), 19–34.

Hooghe, M., & Wilkenfeld, B. (2008). The stability of political attitudes and behaviors across adolescence and early adulthood: A comparison of survey data on adolescents and young adults in eight countries. *Journal of Youth and Adolescence*, *37*, 155–167.

Imec. (2020). *Imec Digimeter 2019. Digitale mediatrends in Vlaanderen* [Imec Digimeter 2019. Digital media trends in Flanders]. Ghent: Imec.

Jacobs, L., Damstra, A., Boukes, M., & Swert, K. De. (2018). Back to reality: The complex relationship between patterns in immigration news coverage and real-world developments in Dutch and Flemish newspapers (1999 – 2015). *Mass Communication and Society*, *21*(4), 473–497.

Jacobs, L., Meeusen, C., & d'Haenens, L. (2016). News coverage and attitudes on immigration: Public and commercial television news compared. *European Journal of Communication*, *31*(6), 642 –660.

Jacobs, L., & van der Linden, M. (2017). Tone matters: Effects of exposure to positive and negative tone of television news stories on anti-immigrant attitudes and carry-over effects to uninvolved immigrant groups. *International Journal of Public Opinion Research*, *30*(2), 211–232.

Lawlor, A., & Tolley, E. (2017). Deciding who's legitimate: News media framing of immigrants and refugees. *International Journal of Communication*, 967–991.

Lee, M. J., Bichard, S. L., Irey, M. S., Walt, H. M., & Carlson, A. J. (2009). Television viewing and ethnic stereotypes: Do college students form stereotypical perceptions of ethnic groups as a result of heavy television consumption? *Howard Journal of Communications*, *20*(1), 95–110.

Masson, C. N., & Verkuyten, M. (1993). Prejudice, ethnic identity, contact and ethnic group preferences among Dutch young adolescents. *Journal of Applied Social Psychology*, *23*(2), 156–168.

Meeusen, C., & Boonen, J. (2020). Facilitators of intergenerational similarity in social and political attitudes: The role of discussion, sophistication, attitudinal homogeneity, and gender. *Acta Politica*.

Meeusen, C., & Jacobs, L. (2017). Television news content of minority groups as an intergroup context indicator of differences between target-specific prejudices. *Mass Communication and Society*, *20*(2), 213–240.

Nelson, T. E., & Kinder, D. R. (1996). Issue frames and group-centrism in American public opinion. *The Journal of Politics*, *58*(4), 1055–1078.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*(4), 717–731.

Schemer, C. (2012). The influence of news media on stereotypic attitudes toward immigrants in a political campaign. *Journal of Communication*, *62*(5), 739–757.

Schemer, C. (2014). Media effects on racial attitudes: Evidence from a three-wave panel survey in a political campaign. *International Journal of Public Opinion Research*, *26*(4), 531–542.

Scheufele, D. A. (2000). Agenda-setting, priming, and framing revisited: Another look at cognitive effects of political communication. *Mass Communication and Society*, *3*(2–3), 297–316.

Slater, M. D. (2007). Reinforcing spirals: The mutual influence of media selectivity and media effects and their impact on individual behavior and social identity. *Communication Theory*, *17*(3), 281–303.

Slater, M. D. (2015). Reinforcing spirals model: Conceptualizing the relationship between

media content exposure and the development and maintenance of attitudes. *Media Psychology*, *18*(3), 370–395.

Spruyt, B., & Elchardus, M. (2012). Are anti-Muslim feelings more widespread than anti-foreigner feelings? Evidence from two split-sample experiments. *Ethnicities*, *12*(6), 800–820.

Strasburger, V. C., Wilson, B. J., & Jordan, A. B. (2014). *Children, adolescents, and the media (Third Edition)*. Thousand Oaks, CA: Sage.

Van Houtte, M., Vervaet, R., Mickelson, R. A., & Stevens, P. A. J. (2019). The ethnic prejudice of Flemish pupils: The roles of school gender composition and laddish culture. *Gender and Education, 31*(8), 1057-1076.

Van Klingeren, M., Boomgaarden, H. G., Vliegenthart, R., & De Vreese, C. H. (2015). Real world is not enough: The media as an additional source of negative attitudes toward immigration, Comparing Denmark and the Netherlands. *European Sociological Review*, *31*(3), 268–283.

Wagner, U., Christ, O., Pettigrew, T. F., Stellmacher, J., & Wolf, C. (2006). Prejudice and minority proportion: Contact instead of threat effects. *Social Psychology Quarterly*, *69*(4), 380–390.

Watson, B. R., & Riffe, D. (2013). Perceived threat, immigration policy support, and media coverage: Hostile media and presumed influence. *International Journal of Public Opinion Research*, *25*(4), 459–479.

Wilson-Daily, A. E., Kemmelmeier, M., & Prats, J. (2018). Intergroup contact versus conflict in Catalan high schools : A multilevel analysis of adolescent attitudes toward immigration and diversity. *International Journal of Intercultural Relations*, *64*(February), 12–28.

Xenos, M., Vromen, A., & Loader, B. D. (2014). The great equalizer ? Patterns of social media use and youth political engagement in three advanced democracies. *Information, Communication & Society*, *17*(2), 151–167.

Appendix 1. Alternative regression outcomes for the associations between intergroup contact, news consumption, and the attitudes towards immigrants.

	Attitudes towards immigrants		
	Model 1	Model 2	Model 3
Control variables			
Gender	.08	.07	.06
Age	.01	.02	0
Education type	.26***	.25***	.23**
Political preference	-.29***	-.28***	-.28***
Migration background	.20**	.14*	.14*
Intergroup contact variables			
Ethnicity of friends		.18**	.18**
Ethnicity of school		-.08	-.07
News consumption variables			
News on TV			-.12
News on radio			.07
Newspapers			-.06
News online			.07
News on SNS			-.04
Adj. R^2	.23	.25	.26
ΔR^2		.03**	.02

Note: Standardized regression coefficients. *p < .05, **p < .01, ***p < .001. Gender: boy = 1, girl = 2. Education type: BSO = 1, TSO = 2, ASO = 3.