

Support for sexual liberalization among ethnic majorities and minorities in Europe

The role of social norms in the public expression of opinions

Nick Wuestenenk

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**Support for sexual liberalization among
ethnic majorities and minorities in Europe**
The role of social norms in the public expression of opinions

**Steun voor seksuele liberalisering onder etnische
meerderheden en minderheden in Europa**

De rol van sociale normen in de publieke expressie van meningen
(met een samenvatting in het Nederlands)

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Chapter 1

Synthesis

1.1 Background

1.1.1 Ethnic diversity in Western Europe

In recent decades, ethnic diversity has increased substantially in many Western European countries. In the Netherlands, for example, first- and second-generation immigrants made up 9% of the population in the early 1970's. Some 50 years later, this share has risen to 25% (see Figure 1.1) (Statistics Netherlands, 2022). The large influx of immigrants has significantly changed the cultural landscape of the Netherlands. In particular, while the Netherlands is characterized by relatively progressive values on issues related to gender and sexuality, many ethnic minorities originate from comparatively traditional countries such as Turkey and Morocco (Adamczyk & Liao, 2019; Cislighi et al., 2022). As a result of their cultural background, ethnic minorities from these countries have more conservative views on these issues compared to the ethnic majority population (Huijnk, 2014; Huijnk & Andriessen, 2016; Kalmijn & Kraaykamp, 2018).

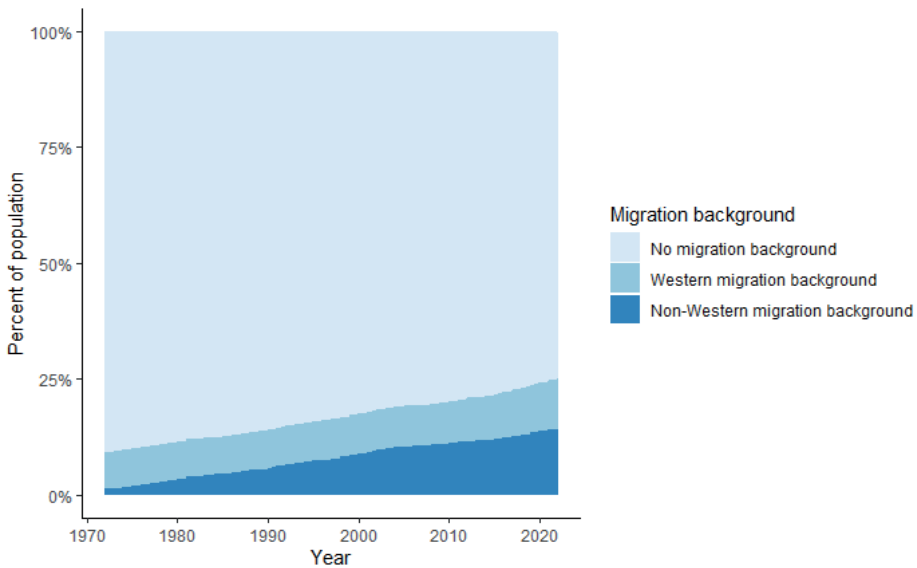


Figure 1.1: Share of the population with no migration background, with a Western migration background (first and second generation) and with a non-Western migration background (first and second generation) in the Netherlands between 1972 and 2022 (Statistics Netherlands, 2022). *Note:* A non-Western migration background refers to countries of origin in Africa, Latin America and Asia (except Indonesia, Japan and Turkey).

The cultural differences between the ethnic majority and the ethnic minority population have sparked public and political debates about the consequences of ethnic diversity for the cohesion of Western European societies (Foner & Alba, 2008). Part of the ethnic majority population regard the conservative views of ethnic minority groups as a threat to their secular and liberal culture, which has led to intergroup prejudice and discrimination (Lucassen, 2005; McLaren & Johnson, 2007; Schlüter & Scheepers, 2010). In these debates, one issue has become particularly important in symbolizing the contrast between the progressive national majority culture and the conservative ethnic minority culture: sexual liberalization (Bracke, 2012; Puar, 2007; Zanghellini, 2010). Sexual liberalization refers to the endorsement of attitudes, policies, and norms that promote the autonomy of individuals in their sexual lives (e.g., support for abortion, sex before marriage, and homosexuality) (Glas, 2023). In current public and political debate, sexual liberalization has come to define the national identity of Western European countries and their democratic tradition. Therefore, some argue that the more conservative views of ethnic minority groups on these issues challenge the principle of tolerance and individual freedom that is upheld and institutionalized in many Western European countries (Bracke, 2012; Puar, 2007; Zanghellini, 2010).

Figure 1.2 illustrates the contrast in attitudes toward sexual liberalization between Western European receiving countries and major sending countries. For example, while the Netherlands is among the countries with the most progressive attitudes towards abortion (y-axis) and homosexuality (x-axis), major sending countries to the Netherlands, such as Morocco and Turkey, are among the most conservative in Europe, North Africa and West Asia (Inglehart et al., 2020).

To inform the debate on (the consequences of) ethnic diversity, much scientific research has been devoted to the question of why values on issues of sexual liberalization are so different between progressive ethnic majorities and conservative ethnic minorities (for an overview, see Drouhot & Nee, 2019). These studies emphasize that the values of ethnic minorities are the result of a complex interplay of social forces. On the one hand, the values of ethnic minorities move towards those of the ethnic majority population over time due to continuous exposure to the national majority culture, for example through direct contact with ethnic majority groups (Brünig & Fleischmann, 2015; Maliepaard & Alba, 2016; Maliepaard & Phalet, 2012) or through employment and educational attainment in the host society (Kalmijn & Kraaykamp, 2007; la Roi & Mandemakers, 2018). On the other hand, other social processes also lead ethnic minorities to retain their ethnic minority culture instead. For example, Muslim ethnic minorities are more likely to retain their conservative ethnic minority culture due to the discrimination they experience from ethnic majorities (Röder & Spierings, 2021; Skrobanek, 2009) or through socialization by religious institutions (Röder, 2014, 2015; Röder & Spierings, 2021) or their parents (Kalmijn & Kraaykamp,

2018; Kretschmer, 2018; Maliepaard & Alba, 2016). In short, in their process of acculturation, ethnic minorities are exposed to multiple and potentially conflicting normative forces from both the ethnic majority and the ethnic minority population.

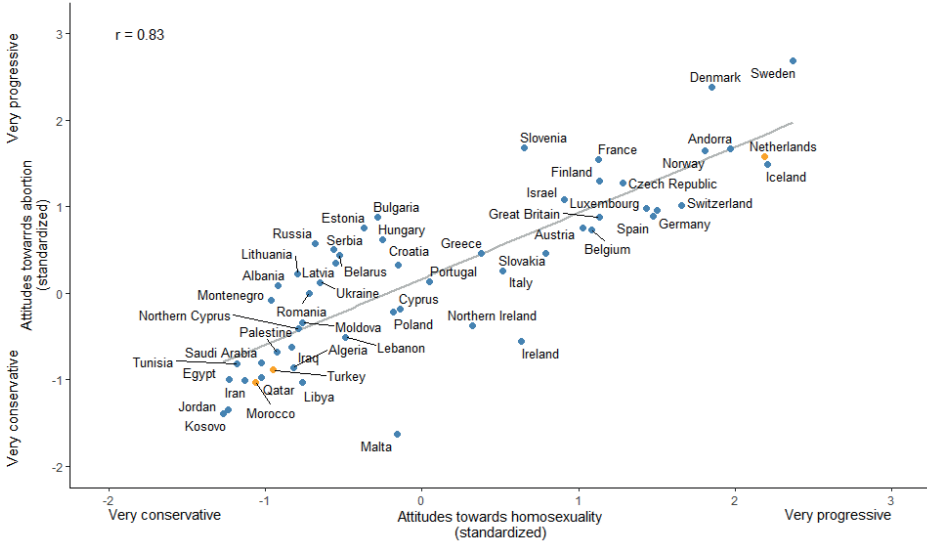


Figure 1.2: Average of standardized scores of attitudes towards abortion (y-axis) and attitudes towards homosexuality (x-axis) in waves 3-7 of the World Values Survey in countries from Europe, North Africa and West Asia (Inglehart et al., 2020). *Note:* The Netherlands, Morocco and Turkey are highlighted in orange.

1.1.2 Managing cultural differences

Due to the large differences between the ethnic minority and the national majority cultures, many ethnic minorities have to reconcile feelings of belonging to two seemingly incompatible groups: on the one hand, they are raised as part of a conservative religious and ethnic community, while, on the other hand, they live in a progressive liberal society. Many ethnic minorities identify with both the ethnic minority and the national majority group (Fleischmann & Verkuyten, 2016; Spiegler, Güngör, & Leyendecker, 2016) and are embedded in both ethnic minority and ethnic majority social networks (Jugert, Leszczensky, & Pink, 2018; Leszczensky, Jugert, & Pink, 2019; Smith, McFarland, Tubergen, & Maas, 2016). As a result, they are at greater risk of having their identities questioned and threatened (Kunst, Thomsen, & Dovidio, 2019): while the conservative ethnic minority group does not support adherence to secular progressive norms such as sexual liberalization, the progressive ethnic majority group disapproves of traditional ethno-religious norms (Hirsh & Kang, 2016). Managing these competing expectations requires constant negotiation of their

multicultural identity, which may have negative consequences for the psychological wellbeing of this group¹ (Albuja, Sanchez, & Gaither, 2019b, 2019a).

Therefore, rather than studying the cultural differences between ethnic minority and majority groups, other studies examine how ethnic minorities balance these conflicting expectations in their everyday lives. Because it is often difficult to integrate these contrasting cultures, many ethnic minorities do so by endorsing either the ethnic minority culture or the national majority culture, depending on what they perceive to be appropriate in their social environment. They can do this in several ways: some studies find that ethnic minorities adjust the degree to which they identify with the ethnic minority or national majority culture based on the expectations of the social situation in which they are engaged (Benet-Martínez, Leu, Lee, & Morris, 2002; Noels & Clément, 2015; Zhang & Noels, 2013). Relatedly, other studies find that ethnic minorities align their behavior with either the ethnic minority norm or the national majority norm, depending on which is dominant in their social environment (Howarth, Wagner, Magnusson, & Sammut, 2014; Stuart & Ward, 2011; Ward, Ng Tseung-Wong, Szabo, Qumseya, & Bhown, 2018; West, Zhang, Yampolsky, & Sasaki, 2017).

The contextual nature of acculturation provides an interesting nuance to current debates about (the consequences of) ethnic diversity for societal cohesion. Although much of this debate focuses on the cultural differences between ethnic groups, these cultural differences do not necessarily translate into behavioral differences. This is because individuals adapt their public behavior to what they perceive as appropriate in their social environment. Therefore, focusing only on the cultural differences between ethnic groups limits our understanding of how acculturation works in practice, and what the consequences of ethnic diversity are. For example, part of the current opposition to ethnic diversity centres on the idea that Western European countries need to protect the rights of women, gay men and lesbian women from the threat of conservative ethnic minority groups (Bracke, 2012; Puar, 2007; Zanghellini, 2010). However, if ethnic minorities do not publicly oppose sexual liberalization because they believe that it violates the accepted social norm, it is highly questionable whether cultural differences really affect the dominant progressive norm in Western European societies. Therefore, in order to improve our understanding of how ethnic diversity affects contemporary Western European societies, we might place more emphasis on the extent to which, and under what conditions, the personal preferences of ethnic minority and ethnic majority groups translate into public behavior, and what the consequences of these behavioral strategies are for the cohesion of Western European societies.

1 Other studies report that bicultural ethnic minorities have better psychological outcomes compared to other ethnic minorities (see Nguyen & Benet-Martínez, 2013), but this depends entirely on the degree to which these identities are perceived as compatible and can be integrated (Yampolsky, Amiot, & de la Sablonnière, 2016).

1.1.3 Online contexts

Previous research on the relationship between personal preferences and public behavior of ethnic minorities has focused almost exclusively on offline contexts. In recent years, however, social media have become ubiquitous in the public debate, and these platforms are increasingly used by ethnic minorities to engage with – and learn about – the groups with which they associate (Croucher, 2011; Neubaum & Krämer, 2017). Despite this, previous research suggests that social media is often an unreliable source to gauge public opinion: not only do social media users differ from the general population (Blank & Lutz, 2017), but individuals are also exposed to a selective range of opinions on social media, for example through ‘echo chambers’ (Bakshy, Messing, & Adamic, 2015) or algorithmic biases (Santos, Lelkes, & Levin, 2021; Shmargad, Coe, Kenski, & Rains, 2021) that limit exposure to diverse viewpoints.

Besides the characteristics of (the users of) social media platforms, the perception of public opinion is also distorted because individuals often express opinions online that do not match their personal views. For example, some studies find that individuals are more likely to express their opinions when they anticipate that others will agree with them (Chen, 2018; Gearhart & Zhang, 2014, 2015, 2018; Matthes, Knoll, & von Sikorski, 2018; Ordoñez & Nekmat, 2019; Wu & Atkin, 2018). In contrast, when others’ opinions do not match their own, they are more likely to refrain from participating in the discussion. In addition, other studies find that individuals adjust the opinions that they express online to match the opinions of others. For example, studies on online prejudice find that individuals are more likely to express prejudiced opinions when others do so as well (Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020). In the context of ethnic diversity, this discrepancy between personal preferences and online expressions is potentially problematic: social media provide a low-risk and easily accessible way for individuals to gauge support for ethno-religious norms among ethnic minority and ethnic majority groups. However, when individuals’ online expressions do not match their personal preferences, the extent to which these norms are actually supported may be misperceived.

1.1.4 Norm misperceptions

When individuals conform their (online) expressions to the dominant social norm in their environment, this norm becomes increasingly dominant, while at the same time people’s personal preferences are comparatively heterogeneous (Noelle-Neumann, 1974). Nonetheless, people shape their perceptions of social norms through the expressions of others, even though these expressions do not necessarily reflect their personal preferences (Tankard & Paluck, 2016). In other words, through the incongruence between personal preferences and (online) expressions, individuals

may misperceive support for social norms. This phenomenon is well-documented in previous research on *pluralistic ignorance*, which describes a social context in which individuals privately reject a norm, but mistakenly believe that others do support it (Allport, 1924). For example, studies have shown that students tend to overestimate the support for drinking norms among other students (Prentice & Miller, 1993), workers overestimate others' work devotion (Munsch, Weaver, Bosson, & O'Connor, 2018), and individuals tend to believe that others are more prejudiced than they actually are (Tappin & McKay, 2017).

In the current public and political debates about cultural differences between ethnic minority and majority groups, it is important to understand whether these differences are perceived accurately to begin with. The potential misperception of ethnic minority and ethnic majority norms is problematic for two related reasons: first, because social norms serve as a strong basis for the expression of opinions, individuals may conform their expressions to the social norms that they do not endorse themselves but erroneously believe that others do (Centola, Willer, & Macy, 2005; Willer, Kuwabara, & Macy, 2009). As a result, ethnic majorities and ethnic minorities risk becoming trapped in an increasingly dominant 'unpopular norm' that they are afraid to challenge for fear of social sanctions from others. Second, due to this self-reinforcing process, individuals may overestimate the degree of difference between ethnic majority and ethnic minority groups, and the perceived irreconcilability of these group differences may in turn drive salient boundaries in society (Lerman, Yan, & Wu, 2016). For example, studies in the United States have shown that Democrats and Republicans tend to overestimate the degree of extremity of the opposing party, which in turn drives intergroup hostility and even the extremity of one's own views (Ahler, 2014; Ahler & Sood, 2018; Pasek, Ankori-Karlinsky, Levy-Vene, & Moore-Berg, 2022).

1.2 Research aim and focus

The previous sections illustrate that many ethnic majorities perceive the conservative ethnic minority population as a threat to their secular liberal culture, for which the issue of sexual liberalization has become symbolic. However, it is debatable whether these cultural differences also translate into behavioral differences: many ethnic minorities experience a tension between their conservative ethnic minority culture and the progressive national majority culture, and adjust their public expressions according to the expectations of their social environment. If their personal preferences and public expressions do not match, this may lead others to misperceive their personal preferences. Therefore, this dissertation examines to what extent, and under which conditions, (i) ethnic minorities and ethnic majorities publicly express support for

sexual liberalization, (ii) these public expressions reflect their personal preferences, and (iii) whether the discrepancy between personal preferences and public expressions affects others' (mis)perceptions of their personal preferences. Given the important role of social media in current public and political debates, we will study these questions in both online and offline settings. In this section, we will elaborate on the contributions of this dissertation to previous research in this field. We will do so by first highlighting how previous studies have informed our research aims, what the methodological and theoretical limitations of previous studies are, and how our dissertation addresses these shortcomings.

1.2.1 Acculturation in social contexts

Classic assimilation theory argues that the difference in attitudes between the ethnic minority and the ethnic majority population decreases over time and across generations (Alba & Nee, 1997, 2003; Gordon, 1964; Park, 1950). Indeed, studies have found that the values of ethnic minorities become more similar to those of the ethnic majority as the duration of residence in the host society increases (Röder, 2015; Röder & Mühlau, 2014; Soehl, 2017a). Despite its ubiquity in sociological research, assimilation theory is not really a *theory* because it does not make any concrete predictions about the conditions under which cultural change does or does not occur (Esser, 2004, 2010). Instead, classic assimilation theorists (e.g., Alba, 1999) view the national majority culture as a universal force that exerts an irresistible influence on all ethnic minority groups. In their view, all ethnic majorities become more similar to the ethnic majority – in terms of language, lifestyle and worldview, for example – because this could help them to rise from their more marginal positions in society.

However, we know from previous literature that the acculturation process is heterogeneous. For example, ethnic minority groups may change more rapidly in some domains (e.g., work and education) than on others (e.g. worldviews and language) (Portes & Zhou, 1993). In addition, there are also differences between ethnic groups in the speed and extent to which they acculturate. For example, Muslim minority groups have been found to retain their ethnic minority culture to a greater extent than other ethnic minority groups in Western Europe (Jacob, 2018; Röder, 2014; Soehl, 2017b). These differences can be attributed both to the characteristics of the ethnic groups themselves and to their different experiences in the host society. For example, some argue that ethnic identities may be maintained in response to lack of social acceptance and discrimination in the host society (Portes & Rumbaut, 2001; Röder & Spierings, 2021; Skrobanek, 2009). Also, others argue that groups that are more culturally distinct from the ethnic majority may require a more elaborate and time-consuming process of cultural shedding and learning (Berry, 1980, 1997).

These studies suggest that it is important to examine how different characteristics of an individual's social environment influence whether or not cultural change occurs. Therefore, in Chapter 2, we study how different characteristics of adolescents' classroom context influence their (change in) attitudes towards homosexuality. By using the Children of Immigrant Longitudinal Survey in Four European Countries (CILS4EU) (Kalter et al., 2017), that was conducted among ethnic minority and ethnic majority adolescents in England, Germany, the Netherlands, and Sweden, we are able to examine a large variety of classroom contexts. Specifically, building on Esser's (2004, 2010) Model of Intergenerational Integration, we examine how the degree of cultural change depends on the progressiveness of the classroom norm, the share of co-ethnic classmates, and the difference between students' own cultural backgrounds and those of their classmates.

1.2.2 Social norms, personal preferences and public expressions

The social context of individuals influences not only their attitudes, but also their behavior. A ubiquitous finding in previous research is that individuals conform their behavior to what they perceive to be acceptable in their social environment, i.e., the *social norm* (Sherif, 1936). By conforming their behavior to what others typically do (*descriptive norms*) or what is typically approved of by others (*injunctive norms*), individuals are able to achieve a variety of goals (Cialdini, Kallgren, & Reno, 1991; Cialdini, Reno, & Kallgren, 1990; Deutsch & Gerard, 1955). For example, individuals may follow norms because they provide them with an accurate interpretation of reality (*informational influence*), or because following norms may result in social approval from others (*normative influence*) (Cialdini & Goldstein, 2004; Deutsch & Gerard, 1955). Additionally, individuals may conform their behavior to group norms when these groups (and their prototypical behaviors) are important to how individuals define themselves (*referent informational influence*) (Turner, 1982). In contrast to normative influence, however, referent informational influence represents the internalization of a contextually salient group norm, rather than mere compliance to the norm.

These different types of social influence suggest a complex relationship between social norms, personal preferences, and public expressions. For example, whereas informational influence posits that individuals change their expressions because they accept the norm as valid (i.e., personal preferences and public expressions are aligned), normative influence argues that individuals do so to gain social rewards or avoid disapproval (i.e., personal preferences and public expressions are not aligned). Furthermore, following referent informational influence, the relationship between personal preferences and public expressions depends on the degree to which salient group identities and corresponding group norms in the social environment are relevant to the individual. In short, because of

social norms individuals may publicly express certain opinions that they do not privately endorse (in other social contexts). Examples of this have been found in a wide variety of studies, including alcohol abuse (Perkins, Haines, & Rice, 2005), delinquency (Megens & Weerman, 2010), sexual behavior (Holman & Sillars, 2012), (online) discussions (McDevitt, Kioussis, & Wahl-Jorgensen, 2003), religious behaviors (Aksoy & Gambetta, 2016, 2021), work-family decisions (Bursztyn, González, & Yanagizawa-Drott, 2020; Munsch et al., 2018), homophobic behavior (Denison, Faulkner, Jeanes, & Toole, 2021; Phoenix, Frosh, & Pattman, 2003), bullying (Perkins, Craig, & Perkins, 2011), political behavior (Dinas, Martínez, & Valentim, forthcoming), and many more.

Despite the pervasiveness of this phenomenon, our understanding of it in the context of ethnic diversity remains limited. Most studies on how ethnic minorities conform their behavior to ethnic minority and ethnic majority norms rely on surveys and diary studies (Howarth et al., 2014; Stuart & Ward, 2011; Ward et al., 2018; West et al., 2017). However, given the sensitivity of this issue, self-reported measures are inherently unreliable. Switching between the ethnic minority and the national majority culture means that individuals' social identity, and therefore an important part of their self-concept, is unstable (Schmader & Sedikides, 2018). This clashes with individuals' general desire to be authentic and act consistently across social contexts, which promotes feelings of self-integrity and stability (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Given this desire, individuals may be tempted to exaggerate their level of authenticity in order to feel positive about themselves. In other words, using self-report methods, we may underestimate the extent to which ethnic minorities switch their expressions between ethnic minority and ethnic majority norms.

Furthermore, previous studies do not explicate what behavioral strategies ethnic minorities use to balance the expectations of the ethnic minority culture and the national majority culture. They emphasize that individuals move between different cultures, but how exactly they do this remains unclear. Other studies, however, have identified a number of ways in which individuals may publicly conform to a social norm even when that norm does not match their personal preferences. First, according to the Spiral of Silence theory (Noelle-Neumann, 1974), individuals may be more likely to express their opinions if they expect others to agree with them and otherwise remain silent. Some refer to this behavioral strategy as *selective disclosure* (Cowan & Baldassarri, 2018). Second, instead of withholding an opinion, other studies have found that individuals may publicly express an opinion that conforms to the norm in their social environment, even if it differs from their own opinion. This is also called *preference falsification* (Kuran, 1995). Third, individuals may force others to conform to social norms even though they do not support those norms themselves, also called *false enforcement*. That is, individuals sanction others who do not conform their behavior to the dominant social norm, even though they do not privately support that norm themselves (Willer et al., 2009).

To gain a better understanding of the behavioral strategies that ethnic minorities employ to manage their ethnic minority and the national majority cultures, these studies suggest that we should explicitly measure their behavioral responses to ethnic minority and ethnic majority norms, rather than their self-reflections of their behavior. Thus, in Chapters 3 and 4, we explicitly measure the extent to which ethnic minority individuals publicly express their opinions when the ethnic minority is (not) consistent with their personal preferences (i.e., *selective disclosure*). In addition, in these chapters we also examine the extent to which ethnic minorities publicly express an opinion that does not match their personal preferences in response to (in)congruent social norms (i.e. *preference falsification*). Finally, in Chapter 4, we examine how these behavioral patterns differ between ethnic minority and ethnic majority individuals when they are exposed to (in)congruent norms of ethnic ingroup and outgroup members.

1.2.3 Online discussions

Despite the importance of social media in the acculturation of ethnic minority groups, studies in this field focus almost exclusively on offline contexts. Compared to these studies, research on online behavior (albeit not in the context of ethnic diversity) is much more developed in terms of the relationship between social norms, personal preferences, and public expressions. Even so, the evidence on the relationship between personal preferences and online expressions remains inconclusive, largely due to methodological limitations. Similar to studies on the acculturation of ethnic minorities, many studies in this field use self-report surveys (e.g., Chen, 2018; Gearhart & Zhang, 2015; Kwon, Moon, & Stefanone, 2015). In these studies, individuals are asked whether they adjust their online expressions according to the opinions of others that they perceive online. Such a design is inherently unreliable because individuals are generally not very good at recollecting their social media activity (Vraga et al., 2016; Vraga & Tully, 2020). Even if individuals could accurately recall their online activity, it is likely that their self-reports would be biased: individuals generally desire to be consistent in their opinions and public expressions and may not report it if this is not the case (Guadagno & Cialdini, 2010).

Second, other studies use hypothetical (scenarios of) online environments (Gearhart & Zhang, 2014; Ordoñez & Nekmat, 2019; Wu & Atkin, 2018). These studies typically ask individuals to indicate whether and how they would respond in fictional online discussions. These approaches have been criticized because it is questionable whether they are realistic enough to draw valid conclusions about actual online behavior (Hayes, Uldall, & Glynn, 2010; McDevitt et al., 2003). For example, one study found that participants who were asked to participate in focus groups were less willing to express their opinions than participants who were presented with hypothetical social situations (Scheufele, Shanahan, & Lee, 2001).

Third, many studies that do examine actual public expressions in realistic online environments do not measure the participants' personal opinions (Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020). By design, these studies cannot examine whether (i) the online norm and (ii) the participants' online expressions are consistent with their personal preferences. As a result, these studies cannot adequately examine the interplay between social norms, personal opinions, and online expressions. To do so, studies need to explicitly measure the personal preferences of the participants.

In addition to these methodological limitations, many previous studies share a theoretical limitation in that they rely on the Spiral of Silence theory (Noelle-Neumann, 1974) to examine *when* individuals do or do not publicly express their personal opinions. Other studies, however, suggest that even when individuals express an opinion publicly, it remains doubtful whether this opinion is the same as the opinion that they hold privately. Several studies in offline settings have found that, when others disagree with their opinion, individuals may publicly express an opinion that is more consistent with others' opinions but different from their own (Smith & Terry, 2003; Walker, Sinclair, & Macarthur, 2015; Willer et al., 2009). Studies in online settings are more sparse in this field, but find similar results (McDevitt et al., 2003). These studies suggest that, in addition to examining *when* an individual expresses an opinion, studies should also examine whether the opinions that they publicly express are consistent with their personal preferences and why two not always align.

In this dissertation, we study the relationship between social norms, personal preferences, and public expressions among ethnic minorities (Chapters 3 and 4) and ethnic majorities (Chapter 4) in online settings. This in itself is already a significant contribution to previous research, which has primarily studied ethnic minority and national norms in offline settings. On top of this, we address the methodological and theoretical limitations of studies on online behavior by explicitly measuring individuals' expressions in realistic online environments, rather than using self-report measures or hypothetical scenarios. We built a complete online discussion platform and invited ethnic minority and ethnic majority individuals to participate in online discussions about sexual liberalization (see Section 1.3.2). Participants could engage in a variety of common online behaviors, such as commenting, liking, and disliking, to express their support or opposition to sexual liberalization. Prior to entering the online discussion platform that we designed, the participants indicated their personal opinions about the issues that would later be discussed. Thus, unlike many previous studies, we were able to measure the extent to which individuals' online expressions were or were not consistent with their personal preferences.

1.2.4 Norm misperceptions

In the previous sections, we focused primarily on how social norms influence the relationship between personal preferences and public expressions. However, as we mentioned earlier, individuals base their perceptions of social norms on the public expressions of others (Tankard & Paluck, 2016). Therefore, when individuals' public expressions do not match their personal preferences, others may misperceive support for social norms as a result (Centola et al., 2005; Willer et al., 2009). This self-reinforcing process between the incongruence between personal preferences and public expressions on the one hand, and norm misperceptions on the other, has not often been examined in previous research. Instead, these studies focus primarily on psychological explanations to study norm misperceptions. For example, these studies find that misperceptions often arise because individuals erroneously project their own opinions onto others (Robbins & Krueger, 2005), or because they base their perceptions of others' views on their group membership (DiDonato, Ullrich, & Krueger, 2011). In other words, how individuals' public expressions relate to (mis)perceptions of social norms has not often been examined in previous research, despite a strong theoretical basis for this relationship.

In addition to the psychological perspective, a long-standing sociological tradition emphasizes that the properties of people's social networks play an important role in how social norms are communicated between individuals (Blau & Schwartz, 1984; Centola, 2015). For example, as is described in the *homophily principle*, individuals are more likely to befriend and share their opinions with others who share similar characteristics such as opinions, gender, and ethnicity (McPherson, Smith-lovin, & Cook, 2001). As a result, individuals are disproportionately exposed to others with characteristics similar to their own, which may distort their perceptions of social norms in the broader social context (Lerman et al., 2016). These findings suggest that, instead of focusing on psychological explanations for misperceptions, we could emphasize the role of individuals' social networks in how misperceptions of social norms arise and persist. However, the properties of individuals' social networks, such as homophily, have not been considered in most previous research on misperceptions (but see Kitts, 2003). Most studies use either laboratory experiments that focus primarily on the perceptions of strangers (e.g., Human & Biesanz, 2011), or egocentric network data that examine only strong ties such as friends (e.g., Green, Hoover, Wagner, Ryan, & Ssegujja, 2014). In short, previous research emphasizes that social norms are communicated in social networks, that are structured according to homophilous processes. Yet, what role the properties of social networks play in the misperception of social norms remains largely unknown.

Therefore, to contribute to the literature, in Chapter 5 we test the proposition that social norms may be misperceived, but nonetheless persist because individuals

selectively share their opinions with others in their social network whom they perceive as similar to themselves. To study this, we collected complete network data in 26 classrooms in 5 schools for post-secondary vocational education in the Netherlands. In each classroom, we collected complete network data on friendship nominations, as well as self-reported opinions about homosexuality, perceived opinions of peers, and students' willingness to share their opinions with others. These data allow us to study the extent to which social network properties (i.e. friendship and group membership) are related to misperceptions of attitudes towards homosexuality and the willingness to share opinions. Furthermore, because we have information on both the (mis)perceived and self-reported opinions of students, we can compare students' current willingness to share their opinions with a counterfactual situation in which there is no misperception of others' opinions.

1.2.5 SCOOP framework

This dissertation is part of the research and training program Sustainable Cooperation - Roadmaps to Resilient Societies (SCOOP). SCOOP is dedicated to the interdisciplinary study of sustainable cooperation in order to understand the conditions for societal resilience (SCOOP, 2019). The program identifies several societal domains in which cooperation takes place, as well as a range of threats to that cooperation. Of interest to this dissertation is the domain of inclusion, which addresses how societies can integrate diverse individuals and groups into families, communities and organizations so that they all contribute to shared goals and values. One of the challenges in this area is that differences between groups can lead to tensions and conflicts that threaten feelings of inclusion and, as a result, sustainable cooperation. SCOOP therefore explores how best to manage diversity so that individuals and groups feel represented and contribute to the common goals of the wider society.

The present dissertation focuses on individual behavioral strategies used by ethnic minority members to reconcile cultural differences between the ethno-religious groups with which they identify. We emphasize that differences between ethno-religious groups are not necessarily a threat to cooperation. This is because individuals' desire to maintain a positive social identity may lead them to conform their public expressions to dominant social norms, even when these expressions are not in line with their personal preferences. In other words, cultural differences between ethno-religious groups do not necessarily pose a threat to cooperation because they do not always translate into behavioral differences. However, as SCOOP also argues, focusing on short-term cooperation goals can create negative feedback cycles that hinder cooperation in the long run (SCOOP, 2019). Specifically, when individuals align their public expressions with the dominant social norm, the norm can become increasingly dominant over

time, even when individuals' personal preferences are comparatively heterogeneous. As a result, individuals risk becoming trapped in unpopular norms that they are afraid to challenge for fear of social sanctions. Moreover, because of this self-reinforcing process, individuals may overestimate the difference in norms between ethno-religious groups, which may stimulate intergroup hostility and even the degree of extremity of their own views.

Besides this thematic focus, the present dissertation also contributes to previous research through its interdisciplinary nature (sociology and social psychology). Specifically, sociological research on the acculturation of ethnic minority groups primarily investigates how the worldview of ethnic minority groups changes over time and across generations, and what factors contribute to these changes (for an overview, see Drouhot & Nee, 2019). In doing so, studies in this field often ignore the fact that cultural differences between ethnic groups do not necessarily translate into behavioral differences. Social psychology, on the other hand, has a long tradition of research on the so-called 'attitude-behavior gap', although this has not often been applied to the context of ethnic diversity (Cooke & Sheeran, 2004; Dai & Albarracín, 2022). The field of social psychology focuses primarily on the social and cognitive mechanisms that can explain the discrepancy between personal preferences and public expressions, but not on the macro-level consequences of attitude-behavior incongruence over time. This, in turn, is the domain of sociological research, which focuses on the communication of social norms in constantly evolving social networks (Centola et al., 2005; Lerman et al., 2016).

In short, this interdisciplinary dissertation contributes to sociological and social psychological research by synthesizing findings on (i) the cultural differences between ethnic majority and ethnic minority groups, (ii) the extent to which and when cultural differences between ethnic majority and ethnic minority groups translate into behavioral differences (through the public expression of opinions) and (iii) how behavioral differences explain misperceptions of the personal preferences of ethnic minority and ethnic majority groups. We summarize the focus of this dissertation in Figure 1.3.

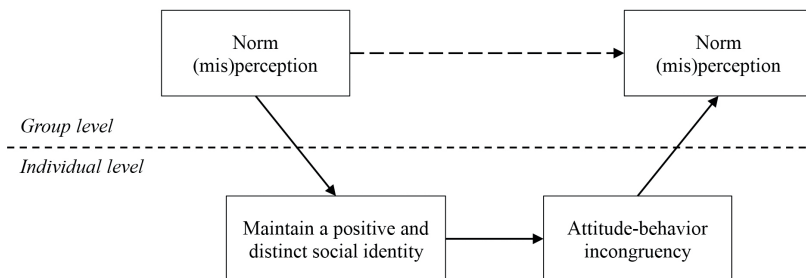


Figure 1.3: Conceptual model of this dissertation.

1.3 Data and methods

1.3.1 Children of Immigrant Longitudinal Survey in Four European Countries

In Chapter 2, we set out to examine how different characteristics of ethnic majorities' and ethnic minorities' social context affect their attitudes towards sexual liberalization. Specifically, in this chapter we focus on how the ethnic class composition of adolescents is related to their attitudes towards homosexuality. To investigate this, we use the Children of Immigrant Longitudinal Survey in Four European Countries (CILS4EU), a cross-national panel survey that focuses on the intergenerational integration of second-generation migrant adolescents in Western European host societies (Kalter et al., 2017). The survey consists of three waves conducted in Germany, the Netherlands, England and Sweden conducted between 2010 and 2013. The data collection took place in schools, with an oversampling of schools with a high share of students with a migration background. In wave 1, the total sample contained 18,716 students in 958 classrooms and 480 schools. The large and diverse sample allows us to examine the role of different student characteristics (ethnicity, religion, gender, attitudes in the country of origin) and classroom characteristics (share of co-ethnics, attitudes in classmates' country of origin) on students' attitudes towards homosexuality. The longitudinal nature of the survey also allows us to examine how these student and classroom characteristics affect changes in these attitudes between wave 1 and wave 3 (approximately 2 years later).

As attitudes towards homosexuality vary substantially between ethnic groups, we use a fine-grained method to operationalize the ethnic classroom composition, namely using the attitudes towards homosexuality in the countries of origin of students' parents. By looking at this characteristic, we can quantify the cultural background that students bring to the classroom through childhood socialization, and how this in turn relates to the attitudes of other students. To generate this score, we make use

of the World Values Survey (Inglehart et al., 2020) and the European Values Survey (Gedeshi et al., 2020), in which a representative sample of respondents in 115 countries indicate their attitudes towards homosexuality. We match this score (stratified by education level) with the country of origin and education level of students' parents for our measure for their cultural background.

1.3.2 Online discussion platform

Previous studies on the relationship between personal opinions and online expressions are limited in that they often use of surveys and hypothetical online scenarios, and that they focus so strongly on the Spiral of Silence theory as the explanatory mechanism (see section 1.2.3). In Chapters 3 and 4, we address these methodological and theoretical limitations by building our own online discussion platform to examine the relationship between personal opinions and online expressions. Using this platform, we can explicitly measure individuals' online expressions in discussions, and the extent to which these online expressions align with their personal opinions².

1.3.2.1 Description

The participants were recruited through a Facebook ad campaign, targeting Moroccan-Dutch and Turkish-Dutch users (Chapter 3) and ethnic majority Dutch users (Chapter 4). The participants were informed that Utrecht University was conducting a study on how individuals think about societal issues, and how they discuss these issues with others. After providing informed consent, the participants were directed to a survey that asked, among other things, their personal opinions on issues related to sexual liberalization (e.g., homosexuality, abortion and sex before marriage). After completing the survey, the participants were directed to the online discussion platform.

On the discussion platform, the participants were given a brief explanation about the functionalities of the platform, and then they were asked to enter a username. After this, they were directed to the first discussion page. The discussion forum consisted of several pages, each of which was dedicated to one discussion on sexual liberalization that was also included in the survey. On each page, the topic was introduced by a post from a fictitious user, in which they presented their personal opinion about an online article (see Figure 1.4, Panel A). This post was followed by six to eight comments from other fictitious users (see Figure 1.4, Panel B). The participant could perform four actions on the forum: reply to comments, like comments and posts, dislike comments and posts, and post a comment at the bottom of the page.

² The code of the website we used for Chapter 4 is available open source at <https://github.com/nhwuestenenk/discussion-forum-2-public>

A)



B)



Figure 1.4: Impression of a forum page (in Dutch). A progressive post on homosexuality in (Panel A) and an excerpt of the comments displayed below the post (Panel B).

We took several measures to maximize the realism of our discussion platform. In terms of content, the comments and usernames of the discussion platform were taken from actual online discussions on www.marokko.nl (Chapters 3 and 4) and www.nu.nl (Chapter 4). Also, the design of each discussion page resembled that of other social media platforms. For example, the thumbnail image and title of the article (including a hyperlink to the article) were also displayed in the post, as is very common on other social media platforms. In terms of user experience, the platform was optimized for both desktop and mobile phone users, as people often use social media platforms on their mobile phones. In addition, all of the participants' actions were immediately updated on the screen (and comments were timestamped) to simulate the discussion experience as realistically as possible. For example, after liking a comment, the username of the participant was displayed among the users

who liked that comment. An evaluation after the first data collection (Chapter 3) indicated that we were successful in creating a realistic online environment: 75% of the participants thought that the platform was (very) realistic.

1.3.2.2 Measures

In Chapters 3 and 4, the participants were randomly assigned to a conservative discussion platform (only conservative comments), a progressive discussion platform (only progressive comments), or a mixed discussion platform (50/50 conservative and progressive comments) after completing the survey. In our analysis, we only included the participants with strongly conservative and progressive opinions on an issue. Thus, depending on their responses in the survey, the norm on the discussion platform was incongruent, congruent, or partially congruent with their personal opinion. In Chapter 4, the participants were also randomly assigned to online discussions between either Moroccan-Dutch and Turkish-Dutch participants or ethnic majority Dutch participants. Depending on their own ethnicity, these online discussions took place among either the participants' ethnic ingroup or ethnic outgroup.

The participants could not interact with each other and could not see what other participants had commented or (dis)liked. They could only respond to the input by the 'fictitious' users that had been uploaded by the researchers. Participants could express their opinion using (dis)likes by liking a comment that aligned with their own opinion (a congruent comment) or disliking a comment that did not align with their own opinion (an incongruent comment). Alternatively, participants could deviate from their opinion using (dis)likes by liking incongruent comments and disliking congruent comments. Participants could also express their opinion, or deviate from their opinion, through the comments that they posted themselves. To measure this, we coded the progressiveness of the comments that the participants posted on the discussion platform and examined the degree to which they were consistent with their personal opinions.

1.3.3 Complete classroom network surveys

Previous research on misperceptions of social norms is limited in that it focuses primarily on psychological mechanisms to explain this phenomenon, whereas many studies suggest that the properties of individuals' social networks play an important role in how social norms (and potentially misperceptions of these norms) are communicated (see Section 1.2.4). Therefore, in Chapter 5, we address this limitation of previous research, by examining how individuals' social network properties (i.e., friendship and group membership) are related to misperceptions of other students' opinions and the willingness to share one's own opinion with them. In this paper, we focus specifically on opinion about homosexuality.

To this end, we collected complete network data in 26 classrooms in 5 schools for post-secondary vocational education in the Netherlands ($N = 234$ students). Students reported their own opinion about homosexuality, as well as their perception of the opinion of three randomly selected friends ($n = 323$) and non-friends ($n = 649$) in the classroom. Students also indicated whether they felt free to share their own opinion about homosexuality with these classmates. These data allow us to examine whether students' misperceptions of others' opinions, and their willingness to share their own opinions with them, are determined by friendship and group membership (gender and ethno-religious group). Then, to examine how misperceptions are related to public expressions, we compare students' willingness to share their opinion with others when it is based on their current perception of others' opinions (which may be misperceived), with a counterfactual situation in which we imagine that students have perfect information about others' opinions (i.e., there is no misperception).

1.4 Overview of the chapters

The chapters in this dissertation study to what extent, and under which conditions, (i) ethnic minorities and ethnic majorities publicly express support for sexual liberalization, (ii) these public expressions reflect their personal preferences, and (iii) whether the discrepancy between personal preferences and public expressions affects others' (mis)perceptions of their personal preferences. Specifically, in Chapter 2, we study what contextual factors explain (the development of) attitudes towards homosexuality among ethnic majority and ethnic minority adolescents. In Chapter 3, we broaden our focus from individuals' attitudes to how these attitudes relate to their public expressions. In Chapter 4, we use a similar design as in Chapter 3, but also include ethnic majority participants. This allows us to examine whether the relationship between personal opinions and public expressions depends on the ethnic composition of online discussions, and whether this is different for ethnic minority participants than for ethnic majority participants. In Chapter 5, we shift our focus to a potential consequence of a mismatch between personal opinions and public expressions, namely that personal opinions are misperceived by others. In this chapter, we examine whether individuals misperceive others' opinions about homosexuality, and how this relates to their willingness to share their opinions with others. In the following sections, we provide a more detailed overview of each chapter. Table 1.1 provides an overview of the four empirical chapters. The results of these chapters, as well as suggestions for future research, are discussed in more detail in Section 1.5.

1.4.1 Chapter 2

Attitudes towards homosexuality among ethnic majority and minority adolescents in Western Europe: The role of ethnic classroom composition

In Chapter 2, we study how the ethnic composition of the classroom is related to the development of attitudes towards homosexuality among ethnic minority and ethnic majority youth in Western Europe. We use waves 1 and 3 of the Children of Immigrant Longitudinal Survey in Four European Countries (CILS4EU) that is conducted in England, Germany, the Netherlands, and Sweden, which amounts to a total of 18,058 observations in 867 classrooms (Kalter et al., 2017). We operationalize the ethnic classroom composition as the attitudes in students' parents country of origin that students acquire through primary socialization. To do so, we make use of the World Values Survey (Inglehart et al., 2020) and the European Values Survey (Gedeshi et al., 2020), in which a representative sample of respondents in 115 countries report their attitudes towards homosexuality. We match this score (stratified by education level) with the country of origin and education level of students' parents for our measure of their cultural background.

We find that students in more conservative classrooms hold more conservative attitudes towards homosexuality at wave 1. However, we find no relationship between ethnic classroom composition and changes in attitudes towards homosexuality between wave 1 and wave 3. We also consider whether the effect of ethnic classroom composition differs according to individual-level characteristics, specifically (i) the cultural distance between one's own culture and that of the classroom (ii) the share of co-ethnics in the classroom and (iii) the ethno-religious group of the student (ethnic majority, non-Muslim minority, and Muslim minority), but we find very few significant results, which are also inconsistent across the countries that we study. From this, we conclude that the classroom is an important socializing context in the formation of attitudes towards homosexuality, and that its influence is relatively uniform across groups.

1.4.2 Chapter 3

How do personal opinions relate to online expressions? An experimental study among Muslim minority groups in the Netherlands

In Chapter 3, we study to what extent, and under which conditions, the opinions that Muslim minorities hold converge with the opinions that they express online. To study this, we build an online discussion platform where 188 second-generation Turkish and Moroccan Dutch participate in discussions on homosexuality, abortion, and sex before marriage. We examine how the personal opinions of the participants, and the congruency of these opinions with the online norm, influence the extent to which

Table 1.1: Overview of the chapters

Chapter	Research question(s)	Sample	Main findings
2	<ul style="list-style-type: none"> - What is the role of ethnic classroom composition in the development of attitudes towards homosexuality among ethnic majority and ethnic minority adolescents? 	<p>18,058 students in 867 classrooms in Germany, England, the Netherlands and Sweden.</p>	<ul style="list-style-type: none"> - The classroom plays an important role in shaping attitudes towards homosexuality. - The classroom influence is relatively uniform across groups.
3	<ul style="list-style-type: none"> - To what extent do the opinions that Muslim minorities hold relate to the opinions that they express online? - How is this relationship influenced by the congruency of the online norm with the opinions of individuals? 	<p>450 online discussion pages completed by 188 second-generation Moroccan-Dutch and Turkish-Dutch participants.</p>	<ul style="list-style-type: none"> - Conservatives (but not progressives) are less likely to express/more likely to deviate from their opinion in incongruent discussions.
4	<ul style="list-style-type: none"> - How is the relationship between personal opinions and online expressions influenced by exposure to ingroup and outgroup norms? - How does this relationship differ between Muslim minorities and ethnic majority participants. 	<p>958 online discussion pages completed by 531 Moroccan-Dutch, Turkish-Dutch and ethnic majority participants.</p>	<ul style="list-style-type: none"> - Muslim minority users are less likely to express/more likely to deviate from their opinion in incongruent discussions among the ethnic majority. - Ethnic majority users are more likely to express/less likely to deviate from their opinion in incongruent discussions among the Muslim minority.
5	<ul style="list-style-type: none"> - What social network properties explain misperceptions of opinions about homosexuality of students? - How do misperceptions of opinions about homosexuality affect students' willingness to share their personal opinion? 	<p>877 student dyads (219 student egos and 220 student alters) among Muslim minority, non-Muslim minorities, and ethnic majority students in 26 classrooms in the Netherlands.</p>	<ul style="list-style-type: none"> - Students misperceive friends and ethno-religious ingroup members less than non-friends and ethno-religious outgroup members and are more willing to share opinions with them. - Correcting misperceptions does not substantially change willingness to share opinions with (non-) friends and ethno-religious in- and outgroup members.

participants (i) express their opinion or not and (ii) express an opinion that aligns with their personal opinion or not.

We find that the opinions that participants hold are generally consistent with the opinions that they express online. However, participants are less likely to express their personal opinion, and more likely to deviate from their personal opinion, in an online environment that is (partially) incongruent with their own personal opinions than in a congruent environment. The convergence between personal opinions and online expressions is stronger for progressive participants than for conservative participants. Compared to progressives, conservatives are generally less likely to express their opinions and more likely to deviate from their opinions. Also, for conservatives (but not progressives) the discrepancy between personal opinions and online expressions is larger in incongruent settings compared to congruent settings.

1.4.3 Chapter 4

The influence of group membership on online expressions and polarization on a discussion platform: an experimental study.

In Chapter 4, we extend the previous chapter by studying the role of group membership in the relationship between personal opinions and online expressions. On a similar online discussion platform, 280 ethnic majority Dutch participants and 251 ethnic minority Dutch participants (Turkish-Dutch and Moroccan-Dutch) participate in discussions about homosexuality and abortion among either their ethnic ingroup or outgroup. We examine how (i) the congruence of the online norm with the participants' personal opinions and (ii) the similarity in ethnicity with the other participants in the discussion influence the relationship between personal opinions and online expressions.

We find that when ethnic minority users are exposed to (partially) incongruent discussions among the ethnic majority (i.e., the outgroup), they are less likely to express their opinions and more likely to deviate from their personal opinions. For ethnic majority users, we find the opposite: when they are exposed to a discussion among the ethnic minority with which they disagree, they are more likely to express their opinions and less likely to deviate from their opinions.

1.4.4 Chapter 5

Misperception and the Spiral of Silence in full classroom networks: the case of attitudes towards homosexuality

In Chapter 5, we study the extent to which students misperceive their classmates' opinions about homosexuality, and how this misperception affects students' willingness to share their own opinions with them. To this end, we collected complete network data at a large institution for post-secondary vocational education (see Section 1.3.3). First, we study how social network properties (friendship ties and group membership) affect students' misperception of their classmates' attitudes towards homosexuality. Then, we compare students' current willingness to share their opinions with their classmates (which may be based on a misperception of their classmates' views) with a counterfactual situation in which there is no misperception of classmates' views.

We find that misperceptions of opinions about homosexuality are widespread: students generally underestimate the progressiveness of others' opinions, and overestimate the similarity between their own opinions and those of others. Students are more willing to share their opinions with others whom they perceive to have similar opinions, and with classmates whom they perceive have progressive opinions. Therefore, when we corrected these misperceptions in our counterfactual analysis, we find that students become more willing to share opinions with others whom they originally believed to hold very different views. Also, students become less willing to share opinions with classmates whom they originally perceived to hold progressive opinions (because many of these classmates are in fact more conservative).

We find that the degree of misperception is lower for friends (versus non-friends) and for ethnic ingroup members (versus ethnic outgroup members). When we correct misperceptions, we find only a small decrease in the willingness to share opinions with friends (versus non-friends), and a small increase in the willingness to share opinions with ethnic ingroup members (versus ethnic outgroup members). These changes are so small because students are more willing to share their opinions with friends and ethno-religious ingroup members regardless of differences in opinion.

1.5 Discussion and conclusion

In this dissertation, we study to what extent, and under which conditions, (i) ethnic minorities and ethnic majorities publicly express support for sexual liberalization, (ii) these public expressions reflect their personal preferences, and (iii) whether the discrepancy between personal preferences and public expressions affects others' (mis)perceptions of their personal preferences. In four empirical chapters, we find that the social context has a substantial influence on both the personal opinions of ethnic majority

and ethnic minority members, and whether they express these personal opinions in public. Also, part of their (un)willingness to share their opinions with others can be explained by the misperception of others' views, although the relationship between misperceptions and public expressions is complicated. In this section, we discuss the most important findings of our chapters.

1.5.1 General discussion

1.5.1.1 Acculturation in social contexts

Much previous research on the acculturation of ethnic minorities has relied on assimilation theory (Alba & Nee, 1997, 2003; Gordon, 1964; Park, 1950), which does not make concrete predictions about the conditions under which cultural change does or does not occur. To contribute to this field, in Chapter 2 we study which characteristics of an individuals' social environment predict cultural change, focusing specifically on the characteristics of the classroom context of ethnic minority and ethnic majority adolescents. We find that individuals in more progressive classrooms, on average, hold more progressive attitudes towards homosexuality (which are characteristic of the national majority culture in Western European societies). These results suggest that the national majority culture is not a universal force that affects all ethnic minority groups equally, as is suggested by proponents of assimilation theory (e.g. Alba, 1999). Instead, the degree to which cultural change occurs also depends on the social context in which individuals are embedded *within* society.

We also find that the effect of the classroom does not differ according to individual-level characteristics, such as (i) the cultural distance between one's own culture and that of the classroom (ii) the share of co-ethnics in the classroom, and (iii) the ethno-religious group of the student (ethnic majority, non-Muslim minority, and Muslim minority). These results are not consistent with the proposition of Esser's (2004, 2010) Model of Intergenerational Integration, which argues that individuals may have less incentive to acculturate when cultural differences are large or when there are many others who share their ethnic background. Instead, we find that the classroom can be an important vehicle for acculturation for all individuals if the cultural mainstream in the classroom represents the cultural mainstream of the society as a whole. In contrast, when individuals are situated in very conservative classroom contexts, they may develop values that are at odds with those of mainstream society.

1.5.1.2 Social norms, personal preferences and public expressions

The social context of individuals may not only influence their attitudes, but also whether they publicly express these attitudes to others. For example, even if ethnic minorities acquire more progressive views through socialization in the receiving

society, they may not always feel free to publicly express these views when others in their social environment do not share these values. In Chapters 3, 4, and 5, we show that individuals conform their public expressions to the norm in their social environment, even if this means that their public expressions do not reflect their personal preferences. Specifically, in line with the Spiral of Silence theory (Noelle-Neumann, 1974), we find in Chapters 3, 4, and 5 that both ethnic majority and Muslim minority individuals are less likely to express their personal opinions when the norm in their (online) social environment does match their personal opinions. In addition, as described in studies on *preference falsification* (Kuran, 1995), we find that Muslim minorities (Chapters 3 and 4) and ethnic majorities (Chapter 4) are more likely to publicly express opinions that are opposite to their personal opinions when their personal opinions do not match the norm.

In Chapters 3 and 4, we find that the social norm affects the public expressions of some groups more than others. Specifically, we find that the incongruence between personal preferences and public expressions is most pronounced among conservative ethnic minorities (Chapter 3) and ethnic minorities who are exposed to an ethnic majority norm (Chapter 4). In contrast, we find no evidence that progressive ethnic minorities conform to norms of conservative ethnic minorities, nor do we find evidence that (progressive) ethnic majorities conform to the norms of (conservative) ethnic minorities. We can explain this asymmetry using the social identity approach (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). According to this theory, individuals derive an important part of their identity from the social groups to which they feel they belong. Therefore, when group identities are salient in the social environment, individuals' behavior becomes more aligned with group norms because they internalize the prototypical position of the group that they identify with or because this results in a more positive evaluation by other group members (for an overview, see Spears, 2021). Important here is that many Muslim minorities identify with both the (conservative) ethnic minority and the (progressive) ethnic majority, whereas the ethnic majority does not (Huijnk & Andriessen, 2016).

How these different group identifications affect the behavior of (conservative) ethnic minorities and (progressive) ethnic majorities differently, depends on how these identities become salient in the social environment. Consistent with Oakes' (1987) proposition, our results show that this can occur in two ways. First, according to *comparative fit*, group identities can become salient because of the relationships between different groups in a social setting (e.g., ethnic minorities versus ethnic majorities). Individuals make sense of their position in an intergroup setting by emphasizing differences between groups while neglecting differences within groups during social comparison (Tajfel & Turner, 1986). In Chapter 4, observing a discussion among Dutch Muslims likely highlighted the ethnic majority Dutch's identity, causing

them to behave in ways that were contrary to the online norm in order to maximize the contrast between their own ethnic group and the outgroup. In contrast, the distinction between the ethnic ingroup and the ethnic outgroup may have been less salient for many Turkish-Dutch and Moroccan-Dutch participants due to their dual identification. As a result, the ethnic outgroup condition may not have been as much of an outgroup condition in their perception, and their online expressions may therefore have been equally influenced by both groups.

Second, according to *normative fit*, group identities may become salient because of the extent to which a norm reflects the prototypical characteristics of different groups (e.g., conservative versus progressive norms) (Oakes, 1987). Although both the conservative and progressive online norms were endorsed by ethnic ingroup members in Chapter 3, we found that conservative ethnic minorities conformed more strongly to the progressive online norm than the other way around. This may be because, unlike the conservative online norm, the progressive online norm resonates with the progressive societal norm of the ethnic majority in the Netherlands, with which they also identify.

These findings provide a new perspective on the current public and political debate about the consequences of ethnic diversity for the cohesion of Western European societies. Much of the debate revolves around concerns that the conservative values of ethnic minority groups threaten the dominant progressive norms in Western European societies, for example with regard to sexual liberalization (Bracke, 2012; Puar, 2007; Zanghellini, 2010). However, our studies show that these cultural differences between ethnic groups do not necessarily translate into behavioral differences. Specifically, conservative ethnic minorities conform their public expressions to progressive ethnic majority norms, even to the extent that their conservative personal preferences do not translate into conservative public expressions. In contrast, progressive ethnic minority and majority individuals do not conform their public expressions to conservative ethnic minority norms. Thus, it appears that focussing solely on the cultural differences between ethnic groups limits our understanding of the impact of ethnic diversity on the cohesion of Western European societies. The potential influence of conservative ethnic minority values on the secular and progressive national majority culture in Western European societies is likely overstated: conservative ethnic minorities are often reluctant to express their conservative values in public, while progressive ethnic minorities are not.

1.5.1.3 Norm misperception

In Chapters 3 and 4, we argued that the discrepancy between personal preferences and public opinion can lead to a misperception of the social norm. In Chapter 5, we study this relationship explicitly. Using data from students in diverse classrooms, we find two contrasting results. On the one hand, we find that students are less willing to share their opinions with others who they perceive to hold opposing views, even though the

difference in opinion is often smaller than students perceive (i.e., misperceptions and public expressions are related). On the other hand, students are more willing to share their opinion with friends and ethno-religious ingroup members, even when their opinions are very different (i.e., misperceptions and public expressions are unrelated)³. In short, in Chapter 5 we do not find convincing support for the self-perpetuating cycle between the misalignment of personal preferences and public expressions on the one hand, and norm misperceptions on the other, that we proposed in Chapters 3 and 4. This is simply because individuals do not always align their public expressions with their (mis)perceptions of the social norm.

These competing findings present an interesting nuance to the arguments put forward by the Spiral of Silence theory (Noelle-Neumann, 1974). On the one hand, our results are consistent with the main proposition of this theory that (perceived) disagreement leads to a lower willingness to share opinions. However, we also find that individuals may also feel comfortable to express their disagreement with others they feel close to, such as friends and ingroup members (see also Cowan & Baldassarri, 2018). It is possible that ‘fear of isolation’, the main mechanism in explaining the Spiral of Silence, operates differently depending on who you share your opinion with: stronger ties may be much more resilient to disagreement than weaker ties, and therefore disagreements may also be much easier voiced in stronger ties. However, studies on the Spiral of Silence often fail to account for the role of the social environment (Eilders, Gerads, Scherer, & Scheper, 2022). An alternative explanation for the inconsistent findings is that in Chapter 5 individuals were presented with a hypothetical scenario in which they had to indicate whether they ‘felt free to share their opinion about homosexuality’ with their classmates, whereas in Chapters 3 and 4 we measure public expressions explicitly. We know from previous research that hypothetical scenarios can lead to an underestimation of the Spiral of Silence effect because individuals may exaggerate their level of consistency and authenticity out of self-presentation concerns (Scheufele et al., 2001).

1.5.1.4 Online versus offline social norms

Chapters 3, 4, and 5 share an important finding, namely that individuals are generally less likely to express their own opinions when others’ opinions do not match their own. However, in contrast to Chapters 3 and 4, we find an important difference in Chapter 5, namely that opinion differences do not substantially affect individuals’ willingness to share their opinions with ethno-religious ingroup members and friends. The difference in the effects of group norms between Chapters 3 and 4 on the one hand, and Chapter

3 We were unable to study differences between Muslim minority, non-Muslim minority and ethnic majority students due to the small sample size.

5 on the other, may be due to the context in which these studies were conducted. While Chapters 3 and 4 deal with online norms and computer-mediated communication, Chapter 5 deals with offline norms and face-to-face communication. Initially, it was thought that the visual anonymity of computer-mediated communication would reduce social influence processes compared to face-to-face communication, because less social contextual information is available (see for example the ‘reduced social cues’ approach) (Kiesler, Siegel, & McGuire, 1984). As a result, public expressions would be less directed at social norms. However, studies show that the visual anonymity of computer-mediated communication actually intensifies the social process compared to face-to-face communication when a social identity is salient⁴ (for an overview, see Spears, 2021). The SIDE model (Reicher, Spears, & Postmes, 1995) provides an explanation for this: anonymity leads to a homogeneous perception of the ingroup because anonymity hinders the perception of possible intragroup differences. Thus, when a social identity is salient, individuals show a greater conformity in computer-mediated communication than in face-to-face communication.

The predictions of the SIDE model, together with our findings in Chapters 3, 4, and 5, suggest that the relationship between social norms, personal preferences, and public expressions differs substantially between offline and online contexts. Consistent with the SIDE model, we find that individuals are more likely to conform to group norms in online settings (Chapters 3 and 4) than in offline settings (Chapter 5). It is therefore likely that online settings are much more conducive to norm misperceptions than offline settings. This is because norm misperceptions persist as long as individuals conform their public expressions to the dominant norm out of fear of social sanctions by others for revealing their personal preferences (Bicchieri & Fukui, 1999). This is more likely to occur in online than in offline settings.

1.5.2 Limitations

The studies in this dissertation have a number of limitations. First, in Chapters 3 and 4 we argue that changes in public expressions due to social norms occur because individuals deviate from their personal preferences. However, it is also possible that changes in public expressions simply reflect changes in personal preferences (see Lee, Atkinson, & Sung, 2022). In our studies, we do not explicitly measure whether the opinions of individuals change after exposure to the online norm. This is because many individuals would strive to be consistent with the answers they gave just before

4 In contrast, when a social identity not salient, behavior promoting the uniqueness of the person will be more likely to occur in an anonymous online setting compared to a non-anonymous group offline setting. In this case, individuals will be less likely to follow a norm in online settings compared to offline settings.

the experiment, which would reduce the validity of our results (Guadagno & Cialdini, 2010). However, there are many reasons to believe that the effects that we find are related to the discrepancy between personal opinions and public expressions, rather than to a change in personal preferences. For example, previous research has found that personal opinions that are easily accessible in memory are less likely to be influenced than personal opinions that are not (Blankenship, Wegener, & Murray, 2015; Hodges & Wilson, 1993). Given the strong progressive norm of sexual liberalization in the Netherlands (Adamczyk & Liao, 2019), and the importance of sexual conservatism in Islamic teachings (Dialmy, 2010), individuals were most likely familiar with the issues that were discussed. As a result, their opinions were unlikely to change after the brief exposure to the online norm. Also, in these chapters, we compare the public expressions of individuals who hold very conservative or very progressive opinions about the issues that were discussed. It is highly unlikely that an individual who holds very conservative opinions would suddenly have very progressive personal opinions after exposure to one online discussion, especially since they were most likely familiar with the issue.

Second, in Chapters 3 and 4, we examine the discrepancy between personal opinions and public expressions by comparing participants' responses in a survey to their online expressions on a discussion platform. If there is a discrepancy between the two, our interpretation is that participants strategically adjust their online expression on the discussion platform out of self-presentation concerns. However, an alternative explanation could be that participants did not feel free to express their personal opinions in the survey instead. In contrast to the online discussion platform, the survey clearly signaled to the participants that the study was conducted by Utrecht University. Participants were explicitly informed of this fact prior to starting the survey, and they completed the survey in an online environment designed by Utrecht University, featuring the university's colors and logo, for example. It is possible that participants associate Utrecht University with a secular and liberal orientation, leading them to report more progressive personal opinions than they would otherwise (Krumpal, 2013; van de Werfhorst, 2020). This is not necessarily problematic for our studies, as we are not interested in individuals' personal opinions per se, but in how the expressions of these opinions differ across social contexts. This focus notwithstanding, we find that participants who reported conservative personal opinions in the survey adapted their public expressions to the progressive norm of the online discussion platform (but not vice versa). In other words, participants felt free to express conservative personal opinions in the Utrecht University environment, but not in the online discussion environment, suggesting to us that there are few social desirability concerns.

Third, in Chapters 3, 4, and 5, we discuss how the discrepancy between personal opinions and public expressions can accumulate into a self-perpetuating misperception of the social norm. Unfortunately, due to the experimental design of Chapters 3 and

4, and the cross-sectional nature of Chapter 5, we cannot examine this relationship explicitly. This is a common criticism of research on the Spiral of Silence, which often fails to examine how the congruence between personal preferences and public expressions changes over time and how this change relates to (mis)perceptions of the social norm (Matthes, 2015). After almost 50 years of research on the Spiral of Silence, the micro-level explanations for the willingness to express opinions are well-established, but the macro-level consequences of this individual behavior are not (Porten-Cheé & Eilders, 2015). Future studies could therefore focus more on the conditions under which the Spiral of Silence does or does not persist over time. For example, previous studies suggests that when a minority opinion reaches a critical mass, individuals may no longer feel pressured to remain silent or express opinions they do not privately endorse (Centola, Becker, Brackbill, & Baronchelli, 2018; Granovetter, 1978). Some believe that this is sufficient to break the ‘illusion’ of norm misperceptions (Bicchieri & Fukui, 1999). Others, however, argue that this may not be enough, as individuals may also enforce a norm by sanctioning those who express deviant opinions in order to signal their commitment to the group. This may occur even when they do not privately endorse the norm themselves (Centola et al., 2005; Willer et al., 2009). How this process unfolds over time is still largely unknown: for a theory that focuses so strongly on the self-reinforcing interaction between individual expressions and social norms, very few studies actually examine how these two variables affect each other over time (Matthes, 2015).

Fourth, in Chapters 3, 4, and 5, we focus specifically on opinion expression as one way in which individuals publicly endorse social norms. However, social norms affect a broader range of behaviors than we examine in this dissertation, which may also have different types of downstream consequences than we observe here. For example, studies on homophobic behavior have shown that individuals may engage in bullying or harassment as a way of demonstrating their support for anti-gay norms, even if they do not endorse those norms themselves (Buijs, Hekma, & Duyvendak, 2011; Denison et al., 2021; Phoenix et al., 2003). Although the mechanisms behind opinion expression and victimization appear similar, the latter has comparatively more severe consequences for the well-being of its targets than the former (D’augelli, 2002; Poteat, Mereish, DiGiovanni, & Koenig, 2011). Therefore, in order to gain a comprehensive understanding of how individuals endorse social norms, and how this in turn affects society, future research should also examine behaviors beyond the realm of opinion expression.

1.5.3 Directions for future research

The results of this dissertation, combined with previous research, suggest that future research could place more emphasis on the social contexts in which the personal preferences of ethnic majority and ethnic minority individuals are embedded and expressed. Currently, research on the acculturation of ethnic minority groups often views the personal preferences of ethnic minorities as relatively stable dispositions that change only gradually over time (Alba & Nee, 1997, 2003; Gordon, 1964; Park, 1950). However, previous research shows that the extent to which ethnic minorities identify with the ethnic minority or the national majority culture is highly dependent on the social environment in which they find themselves (Benet-Martínez et al., 2002; Noels & Clément, 2015; Zhang & Noels, 2013). Moreover, the results of this dissertation clearly show that the extent to which personal preferences are translated into public expressions is also highly dependent on the social environment (see also Howarth et al., 2014; Stuart & Ward, 2011; Ward et al., 2018; West et al., 2017). Therefore, if we are truly interested in how ethnic diversity affects the cohesion of Western European societies, it is not necessarily interesting to understand what ethnic groups think. Instead, future research could advance the public and political debate about the consequences of ethnic diversity by focusing on how the social contexts affect (i) the extent to which ethnic groups identify with the ethnic minority and national majority cultures, and (ii) the extent to which cultural differences between groups translate into behavioral differences, as this is a much better indicator of how cultural differences materialize in practice.

Not only do the cultural differences between ethnic groups tell us little about (the consequences of) ethnic diversity, but understanding these cultural differences is also a comparatively inefficient strategy to promote social change. Even if we were to think of individuals' personal preferences as stable dispositions that are somehow detached from their social environment, the flexibility of these views is likely to be limited because they are the result of an extensive socialization process by parents, peers, and religious institutions, and may be closely linked to personal experiences and ethno-religious identity (Kalmijn & Kraaykamp, 2007; Kretschmer, 2018; Maliepaard & Alba, 2016; Maliepaard & Phalet, 2012; Röder, 2014, 2015; Röder & Spierings, 2021). Furthermore, conservative (Muslim) ethnic minorities may be particularly resistant to attitudinal change towards the cultural mainstream because they often occupy more marginal positions in society and are more culturally distinct (Berry, 1980, 1997; Portes & Rumbaut, 2001; Röder & Spierings, 2021; Skrobanek, 2009). This is another reason why studies on the personal preferences of ethnic minority and ethnic majority groups are comparatively uninformative for policy and practice: they are often relatively unmalleable when they are considered out of their social context. In contrast, interventions that target (mis)perceptions of social norms have repeatedly been shown to be highly effective in targeting undesirable norms and behaviors

(Tankard & Paluck, 2016). This clearly demonstrates that, to promote social change, it is not necessary to lean about, and influence, how individuals view a particular issue, but rather to target how they perceive that others think about that issue.

Besides this shift in thematic focus in the study of ethnic diversity, the findings of this dissertation also suggest a methodological improvement for studying the relationship between social norms, personal preferences, and public expressions (in the context of ethnic diversity). Previous research in this field has mostly relied on self-reports of behavior, even though such methods are likely to produce biased results due to respondents' self-presentation concerns (Howarth et al., 2014; Stuart & Ward, 2011; Ward et al., 2018; West et al., 2017). For this reason, future studies could use methods that explicitly measure both personal preferences and public behavior (such as public expressions), rather than individuals' self-reflections about this relationship. For example, in Chapters 3 and 4, we demonstrate how online discussion experiments can be a good medium to study this issue. However, studies using this method must take into account that the influence of group norms on behavior may be stronger in online than in offline settings, because ingroup perceptions are more homogenous (and thus more influential) in online environments (Reicher et al., 1995).

1.5.4 Conclusion

In current public and political debates, the cultural differences between ethnic majorities and ethnic minorities are often framed and perceived as a threat to the cohesion of Western European societies. This dissertation shows that, while cultural differences between ethnic groups may be large, the extent to which these cultural differences translate into behavioral differences depends strongly on the social context. Individuals are more likely to publicly endorse social norms that they perceive that others endorse, even if these social norms do not match their own personal preferences. In other words, by measuring the cultural differences between ethnic groups, without taking into account the social contexts in which these opinions are embedded and expressed, we learn little about how ethnic diversity affects contemporary multicultural societies. If anything, the cultural differences found in these studies may only contribute to the marginalization of ethnic minority groups by suggesting that ethnic minority groups are unlikely or unwilling to adjust to the national majority culture of the host society. In this dissertation, however, we find just the opposite: while conservative ethnic minorities conform to progressive ethnic minority and majority norms, progressive ethnic minorities and majorities do not conform to conservative ethnic minority norms. In conclusion, this dissertation emphasizes the need for a more nuanced understanding of the impact of cultural differences on societal cohesion, by highlighting the crucial role that the social context plays in shaping the behavioral outcomes of ethnic minority and majority groups.

Chapter 2

Attitudes towards homosexuality among ethnic majority and minority adolescents in Western Europe: The role of ethnic classroom composition¹

¹ A slightly different version of this chapter is published as: Wuestenenk, N., van Tubergen, F., Stark, T.H. (2022). Attitudes towards homosexuality among ethnic majority and minority adolescents in Western Europe: the role of ethnic classroom composition. *International Journal of Intercultural Relations*, 88, 133-147. Wuestenenk wrote the main part of the manuscript and conducted the analyses. Van Tubergen and Stark made substantial contributions to the manuscript. This chapter was presented at the 'Dag van de Sociologie 2021' in Utrecht, at the ICS Spring Day 2020 (online), and at the Migration and Social Stratification Seminar in Utrecht. The authors would like to thank all audiences for their valuable questions and comments.

Abstract

Ethnic minorities from more traditional countries tend to hold more conservative views towards homosexuality compared to the ethnic majority population in Western Europe. Assimilation theory predicts that this difference diminishes over time because of exposure and contact between these groups. The role of ethnic classroom composition in this process of cultural assimilation is poorly understood. Therefore, this article examines the role of the country of origin of adolescents and their classroom peers in the assimilation of attitudes towards homosexuality. Using two-wave panel data on 18,058 students in 867 classrooms in England, Germany, the Netherlands, and Sweden, we find that the attitudes towards homosexuality in classroom peers' country of origin are positively associated with attitudes towards homosexuality of respondents in the first wave but have no effect on subsequent changes in these attitudes over a two-year period. We find some variations in this association according to individual-level characteristics, but these results are not consistent across the countries that we study. Together, these results suggest that the classroom is an important socializing context in the formation of cultural values, and that its influence is relatively uniform across groups.

2.1 Introduction

Since the late 20th century, the large inflow of immigrants has significantly reshaped the cultural landscape of Western Europe. At the turn of the millennium, this demographic shift has sparked public and political debate on the threat these cultural differences pose to the cohesion of Western European societies (Fleischmann & Phalet, 2012; Kogan, Fong, & Reitz, 2019). The influx of ethnic minorities is regarded by part of the majority population to threaten liberal Western European culture and values, a perception which has given rise to ethnic prejudice and discrimination (McLaren & Johnson, 2007; Schlüter & Scheepers, 2010). As a result, the cultural distance between the majority and minority population impedes the social integration (Binder et al., 2009) and socio-economic integration of these groups (Larsen & Di Stasio, 2019; Thijssen, Lancee, Veit, & Yemane, 2019). Hence, through the perceived irreconcilability of ethnic majorities' and minorities' values, ethnicity has become a salient boundary which draws a divide in contemporary Western European societies.

Therefore, examining how ethnic minorities' cultural values develop and differ from those of ethnic majorities can improve our understanding of the changing fabric of Western European societies. The current article focuses on one attitude for which there is a particularly large difference between Western European receiving societies and most sending societies from other regions, namely attitudes towards homosexuality (Adamczyk & Liao, 2019). Attitudes towards homosexuality are relatively progressive in Western European societies, as is exemplified (and also caused by) by legal recognition of same-sex marriages over the last two decades (Abou-Chadi & Finnigan, 2019). In contrast, societies in non-Western regions report relatively high levels of prejudice against homosexuality, as is clearly demonstrated by the criminalization of homosexual acts in many of these countries (Asal, Sommer, & Harwood, 2013).

Accordingly, ethnic minorities originating from these more traditional countries have been found to hold more conservative views towards homosexuality compared to the ethnic majority population in Western Europe (Röder, 2015; Soehl, 2017a). These cultural differences are also found among younger generations: in her study in England, the Netherlands, Sweden, and Germany, Kogan (2018) finds that the attitudes towards homosexuality of ethnic minority youth from the Middle East, Northern Africa and South Asia are much more conservative compared to their ethnic majority counterparts. Similarly, studies on sexual prejudice among youth in Belgium find that non-Western ethnic minorities hold considerably more conservative attitudes towards homosexuality compared to their ethnic majority peers (Roggemans, Spruyt, Droogenbroeck, & Keppens, 2015; Teney & Subramanian, 2010).

As is argued by Inglehart and Norris (2003), how a society views homosexuality speaks volumes about its commitment to equality. The more intolerant attitudes towards homosexuality of migrants from conservative countries challenge the principle of tolerance and egalitarianism that Western-European societies strive to uphold. Therefore, understanding what factors shape attitudes towards homosexuality of ethnic minorities in Western Europe can inform policy makers how to maintain the principle of non-discrimination that is anchored in Western-European legislation (Gerhards, 2010).

In line with classic assimilation theory (Gordon, 1964), previous studies find that the difference in the level of approval of homosexuality between ethnic groups decreases over time (e.g., Röder, 2015; Soehl, 2017a). Most of these studies, however, focus only on changes that occur for the adult ethnic minority and majority population. Instead, in this study we focus on changes that occur for ethnic majority and minority youth. As adolescence marks a period in which cultural values are especially susceptible to social influence (Krosnick & Alwin, 1989), studying the socializing context at this life phase can increase our understanding of the mechanisms underlying cultural assimilation. In particular, we examine the influence of a potentially important socializing context that is often overlooked in studies on cultural assimilation, namely that of classroom peers (Ali & Fokkema, 2015). The classroom is a unique socializing context: in almost no other situation are individuals required to be in direct contact with others for such a long period of time (Jackson, 1990). On top of this, classroom socialization occurs in a phase of individual's lives when peer relations are especially intense and important (Brechwald & Prinstein, 2011). Consequently, the attitudes of classroom peers has been found to play an important role in the development of cultural values in adolescence, such as attitudes towards homosexuality (Poteat, 2007; Poteat & Spanierman, 2010).

This article examines the role of ethnic classroom composition in the development of attitudes towards homosexuality among ethnic majority and ethnic minority youth. We use wave 1 and 3 of the Children of Immigrant Longitudinal Survey in Four European Countries (CILS4EU) conducted in England, Germany, the Netherlands, and Sweden, collected between 2010 and 2013 (Kalter et al., 2017). This unique, large-scale survey supplies full network data of the classroom in secondary school, oversampling schools with a higher share of students with an immigrant background. In addition, using the World Values Survey (Inglehart et al., 2020) and the European Values Study (Gedeshi et al., 2020), we include attitudes towards homosexuality in a total of 115 countries of origin.

2.2 Theory and hypotheses

2.2.1 Cultural assimilation

According to early formulations of assimilation theory, immigrants' distinctive cultural characteristics relative to the majority population are seen as burdensome to their full participation into mainstream Western societies. In order to rise up from their marginal positions in society, immigrants become increasingly similar to the ethnic majority population in terms of language, lifestyle and worldview (Gordon, 1964). In contrast, more recent strands of assimilation theory considers the role of both the immigrants and the natives in the maintenance and erosion of cultural differences (Alba & Nee, 2003). Nowadays, scholars consider assimilation a 'mutual process of convergence' in which "immigrants come to resemble natives over time and vice versa" (Drouhot & Nee, 2019, p. 179). Still, the core idea remains the same: the overall cultural difference between the ethnic majority and minorities diminishes over time.

This paper focuses on one socializing context which may play an important role in the process of cultural assimilation, namely the ethnic composition of the classroom. As attitudes towards homosexuality vary substantially between ethnic minority groups (Adamczyk & Liao, 2019), we do not simply distinguish between the share of ethnic majority and minority classroom peers (see Ali & Fokkema, 2015; Kretschmer, 2018). Instead, we improve upon earlier research by using a more fine-grained method to measure the cultural mainstream in the classroom: the attitudes towards homosexuality in the countries of origin of students' parents.

The attitudes that prevail in the country of origin of the parents manifest themselves primarily through childhood socialization. Parents are widely considered to be the primary socializing agent, as they provide the norms of acceptable behavior to their children from an early age (Bandura, 1977). As a result, the cultural values of parents have been found to be strongly associated with the cultural values of their children, as has also been found for attitudes towards homosexuality (Jaspers, Lubbers, & de Vries, 2008). The country of origin of the parents plays an important role in this process: if the parents are born in a country with more conservative attitudes towards homosexuality, they are likely to hold more conservative attitudes themselves (Röder, 2015; Soehl, 2017a). Subsequently, they pass these values on to their children. Hence, rather than simply using the ethnic majority/minority dichotomy, we give substantive meaning to ethnic categories by looking at the variation in attitudes towards homosexuality across countries of origin of students' parents. This approach allows us to quantify the differences that exist between ethnic groups.

In tandem with developing emotional autonomy from their parents, the intensity and importance of peer relationships increases rapidly during adolescence (Brechtwald & Prinstein, 2011). During this life phase, social contexts such as the classroom

or school become more important in the formation of cultural values (Raabe & Beelmann, 2011). Hence, whereas the parents provide their children with the initial framework of cultural values from the country of origin during childhood, these cultural schemes interact and transform drastically in adolescent peer networks. According to assimilation theory, if the expression of cultural values is socially inappropriate at the group level, the intent to maintain such values is reduced (Alba & Nee, 1997). Following our previous reasoning, the ‘cultural mainstream’ of the classroom is affected by the attitudes toward homosexuality that the students’ parents transfer to their children. Hence, the more students’ parents originate from progressive countries, the more progressive attitudes towards homosexuality are accepted in that classroom. Assimilation theory then predicts that students are likely to assimilate to this cultural mainstream. From this point forward, we refer to this cultural mainstream as *classroom AHCO* (classroom Attitude towards Homosexuality in the Countries of Origin).

Besides better quantifying the ethnic differences between students, using the attitudes towards homosexuality in the country of origin of students’ parents has an additional advantage: studies on peer influence often suffer from causality issues when individual (change in) attitudes is explained by (changes in) these attitudes at the group level. This is because it is difficult to exclude the alternative possibility that the changes at the group level occur because of the characteristics of the individual in that group. Using the attitudes in the country of origin of students’ parents circumvents this problem. As this variable is exogenous (students cannot influence the attitudes in the country of origin of classmates’ parents), we can more accurately measure the extent to which the classroom context influences individual (changes in) attitudes towards homosexuality.

In our analyses, we make a distinction between the attitudes towards homosexuality in early adolescence (wave 1), and the changes in the attitudes towards homosexuality over a two-year period (between wave 1 and wave 3). Because students had already been in the same classroom for at least a year before wave 1, the association between the classroom composition variable and attitudes at wave 1 capture the change that has occurred prior to this wave. In line with assimilation theory, the overall expectation is that – net of their own cultural background – individuals with a more progressive classroom AHCO hold more progressive attitudes towards homosexuality (at wave 1) relative to individuals with a more conservative AHCO. On top of this, we expect that the change in attitudes towards homosexuality between wave 1 and wave 3 is more progressive for individuals with a more progressive classroom AHCO compared to students with a more conservative classroom AHCO. To summarize:

H1: The more progressive the classroom AHCO (a) the more progressive the attitude towards homosexuality at wave 1, and (b) the more progressive the change in attitude towards homosexuality between wave 1 and wave 3.

2.2.2 Differences in cultural assimilation

Research suggests that the degree of assimilation varies substantially within and between groups (Alba & Nee, 1997, 2003). However, the various strands of assimilation theory provide little information about the underlying mechanisms that explain these divergent patterns. As a result, the conditions under which assimilation does or does not occur – and for whom – remain unclear. In response to this shortcoming, Esser (2004, 2010) developed his Model of Intergenerational Integration, which proposes that assimilation behaviours are determined by “situationally reasonable reactions of the involved actors to the respectively given societal conditions” (Esser, 2004, p. 1127). He argued that individuals adjust their assimilation behaviours according to the structural conditions of the social context to maximize their expected social or economic well-being. The two structural conditions which predict the expected returns of assimilation in this theory are group size and ethnic boundary making.

First, Esser (2004, 2010) proposed that the expected benefits of assimilation varies according to the size of the ethnic group. He stated that the probability of intra-ethnic interactions depend on the contact opportunity structure in the social environment (see also Blau, 1977, 1994), which in turn shape the expected returns of investing in assimilative behaviours. If your ethnic group increases in size, the chances of intra-ethnic contacts increase, which increases the expected payoffs of investing in the values of your ethnic group. In contrast, if your ethnic group decreases in size, the pressure and chances of interethnic contacts increases, which increases the expected payoffs of investing in assimilative behaviours. Indeed, previous studies on peer networks in schools show that adolescents prefer to befriend peers with the same ethnicity, and that this is a function of co-ethnic group size (Smith, Maas, & van Tubergen, 2014; Smith, McFarland, Tubergen, Maas, et al., 2016). In turn, contact with same-ethnic peers reinforces the attachment to the country of origin (Jugert, Leszczensky, & Pink, 2019). In other words, as individuals interact primarily with others who are already cultural similar, the higher the share of co-ethnics, the less assimilation is expected to occur. We expect that this relationship holds for both ethnic minority and majority groups.

H2: The larger the share of co-ethnics in the classroom, the larger the positive effect of classroom AHCO on (a) attitude towards homosexuality at wave 1, and (b) change in attitude towards homosexuality between wave 1 and wave 3.

Second, Esser (2010) suggests that the expected returns of assimilative behaviour is determined by ethnic boundary making. He states that the larger the cultural distance between the individual and the cultural mainstream of the group, the more restricted the opportunities for successful assimilation are. Large cultural differences not only require more extensive cultural shedding and learning (i.e., higher investments), but may also lead to more negative intergroup attitudes (i.e., lower expected payoffs) (see also Berry, 1997). Individuals who are culturally similar are more likely to interact with each other, and consequently become even more similar over time. In contrast, individuals with little cultural similarity are unlikely to interact with each other and are therefore not likely to grow closer to each other (see also Axelrod, 1997). Consequently, if the difference in cultural values between the individual and the cultural mainstream is too large, this may result in a strong orientation away from the cultural mainstream, and consequently, a smaller investment in assimilative behaviors. In other words, we expect that the larger the difference in the cultural background between a student and his/her classroom peers is, the smaller the influence of the classroom on the cultural values of the student will be. More precisely, we contrast the Attitudes towards Homosexuality in the Country of Origin of the student's parents (*student AHCO*) with that of the classroom.

H3: The larger the distance between student AHCO and classroom AHCO, the smaller the positive effect of classroom AHCO on (a) attitude towards homosexuality at wave 1, and (b) change in attitude towards homosexuality between wave 1 and wave 3.

In Western European societies, religion marks a strong division between the ethnic majority and minority population (Foner & Alba, 2008). More precisely, ethnic minorities differ from ethnic majorities in two important ways: firstly, many ethnic minorities are affiliated with a religion other than Christianity, namely Islam. Secondly, the level of religiosity and religious participation of ethnic minorities is generally higher compared to that of the ethnic majority population (Simsek, Fleischmann, & van Tubergen, 2019; Van Tubergen & Sindradóttir, 2011). Homosexuality is forbidden in Islam and is punished in many Islamic countries as it contradicts the purpose of sexuality to procreate and challenges the importance of traditional marriage and family life (Asal et al., 2013; Gerhards, 2010). Accordingly, Muslims have been found to hold more conservative attitudes towards homosexuality compared to other religious denominations (Hooghe, Claes, Harell, Quintelier, & Dejaeghere, 2010; Van Den Akker, Van Der Ploeg, & Scheepers, 2013). We therefore expect that the expected benefits of assimilating to the cultural mainstream of the classroom are lower for Muslims compared to non-Muslims, which would make them less likely to invest in these behaviours.

H4: The positive effect of classroom AHCO on (a) attitude towards homosexuality at wave 1, and (b) change in attitude towards homosexuality between wave 1 and wave 3 is smaller for Muslims compared to non-Muslims.

2.3 Data and methods

2.3.1 Sample

To test the hypotheses, we will make use of the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU) (Kalter et al., 2017). CILS4EU is a large, cross-national panel survey that focuses on the intergenerational integration of second-generation migrant youth in West-European host societies. This project comprises three waves conducted in Germany, the Netherlands, England and Sweden (2010-2013). We will only use the data of wave 1 and 3, as the dependent variable is only measured in these waves.

The target population in wave 1 consisted of students attending the school grade in which most of the students are (or will become) 14 years old². To achieve this, CILS4EU employed a stratified three-stage sample design: first, schools were randomly sampled from national school lists, oversampling schools with a higher share of students with an immigrant background. When a school refused to participate, a matching strategy was employed to include a new school with similar characteristics, based on region, school type and proportion of students with an immigrant background. Second, two ninth-grade school classes were selected at random when there were more than two classes available in that school. Third, all students within the selected classrooms were included in the sample. Most respondents changed school or entered the labour market after wave 2, which meant that they could no longer be surveyed in the classroom. Therefore, in wave 3 the target population was approached using telephone, postal and web surveys. In other words, when we estimate the change in attitudes towards homosexuality between wave 1 and wave 3, this refers to the change that happens partially after the students have left the classroom context³. The average time lag between wave 1 and wave 3 was 26 months ($SD = 2.2$ months)⁴.

2 The first wave of the survey was conducted in the 3rd grade of secondary schools in the Netherlands, the 8th grade in Sweden, the 9th grade in Germany, and the 10th grade in the United Kingdom.

3 We conducted an additional analysis that included only students who were attending secondary education in both wave 1 and wave 3 (see Appendix A.5). The pattern of results is not different from the main analysis.

4 In Appendix A.6, we present more detailed information about the time between wave 1 and wave 3 per country.

To ensure an adequate representation of the classroom context, we exclude classrooms in which fewer than 10 students participated ($n_{\text{classrooms}} = 66$ and $n_{\text{students}} = 468$). After applying this restriction, the total number of observations in wave 1 and 3 of the CILS4EU data contains 18,058 students nested in 867 classrooms.

2.3.2 Measures

The dependent variable of this study is *attitude towards homosexuality*. Respondents were asked to indicate the extent to which they believed that homosexuality was ok on a scale of 0 (never ok) to 3 (always ok). In our analyses, we make a distinction between the attitude towards homosexuality at wave 1, and the change in attitudes towards homosexuality between wave 1 and wave 3 as our dependent variable.

To measure *student Attitudes Towards Homosexuality in the Country of Origin* (*student AHCO*), we take the mean attitude towards homosexuality in the country of birth of both parents (15.1% of the students are children of mixed marriage⁵). To generate this variable, we make use of round 3 (1995-1998) to round 7 (2017-2021) of the World Values Survey (WVS) (Inglehart et al., 2020) and the European Values Study (EVS) (Gedeshi et al., 2020). In these surveys, respondents in 115 countries were asked whether they believed homosexuality is justifiable (1 = never justifiable and 10 = always justifiable). Per country, we stratify the scores according to the highest level of education completed by the respondents: primary school (lower-educated), secondary school (middle-educated) and university (higher-educated)⁶. Then, we match this score with the country of origin and education level of students' parents in the CILS4EU data.

We stratify the scores according to education for two reasons: first, as education level has proven to be one of the most important predictors of attitudes towards homosexuality (la Roi & Mandemakers, 2018; Ohlander, Batalova, & Treas, 2005), this takes within-country differences in attitudes towards homosexuality into account. Second, we hereby minimize the risk that our results are biased by positive self-selection of immigrants on socio-economic status (see also Dinesen, 2013). Given that higher-educated individuals generally hold more progressive attitudes towards homosexuality, and that higher-educated individuals are more likely to migrate, assigning a general country score would underestimate their progressive attitude (Röder & Lubbers, 2015).

5 In Appendix A.7, we show the results when we take only the country of origin of the father or the country of origin of the mother. In Appendix A.8 we show the results when we remove all students whose parents do not have the same country of origin. The results are very similar to the results in our main analysis.

6 These are the three categories of parental education that were asked in the CILS4EU questionnaire.

By matching immigrants by education level, we account for the fact that migrants are generally not a random sample from their country of origin.

Preliminary analyses have shown that there is little between-country variation in how attitudes towards homosexuality develop around the world (see Appendix A.1). In other words, attitudes towards homosexuality tend to become more progressive at a comparable rate in different countries. Therefore, we standardize these country/education scores per wave to retrieve a score that can be compared across waves. This score indicates how progressive attitudes towards homosexuality are in comparison to other country/education groups at that particular wave. If a country/education group has multiple observations over the waves, we take the mean of these scores. If the country of origin of the parents in the CILS4EU data is not included in the EVS and WVS data, we take the mean score of the education group in the region of that country. For respondents whose parents' level of education is missing, we assign the average score for the country (see Appendix A.2 for an overview of the scores).

To measure the *classroom Attitudes Towards Homosexuality in the Countries of Origin (classroom AHCO)*, we take the mean score of student AHCO in the classroom in wave 1. For the variable *student-classroom AHCO difference* we then take the absolute difference between the classroom AHCO and student AHCO as measured in wave 1.

The *share of co-ethnic classmates* is measured as the share of classmates with the same country of origin as the respondent. To measure the country of origin, we use the country of birth of the parents of the respondent. If at least one of the parents is born outside the survey country, we use this country as the respondent's country of origin. If the parents are born in different countries outside the survey country, we use the country of birth of the mother. If the country of birth of both parents is not known, we use the country of birth of the respondent.

We also examine differences in the effect of classroom peers according to *religious affiliation*. We first distinguish between two categories, namely Muslims and non-Muslims. However, as the vast majority of Muslims in the dataset are also ethnic minorities, there is a strong association between being Muslim and being an ethnic minority. To still be able to distinguish the effects of being Muslim from being a member of an ethnic minority, we further categorize this variable according to *country of origin*. Accordingly, we distinguish between three categories: ethnic majorities, ethnic minority non-Muslims and ethnic minority Muslims.

We control for *gender* (0 = female and 1 = male), as boys generally hold more conservative attitudes towards homosexuality than girls (Adamczyk & Pitt, 2009; Roggemans et al., 2015).

Table 2.1: Descriptive statistics of the dependent, independent and control variables.

	<i>N</i>	<i>M/%</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Dependent variable</i>					
Attitude towards homosexuality (W1)	15,413	1.79	1.25	0	3
Attitude towards homosexuality (W3)	9,669	2.25	1.10	0	3
<i>Independent variables</i>					
Student AHCO	18,001	1.11	1.20	-1.18	2.79
Classroom AHCO	18,058	1.10	.79	-.92	2.45
Student-classroom AHCO difference	18,001	.68	.59	0	3.36
Share co-ethnic classmates	18,007	.48	.35	0	1
Native	18,007	61%	-	0	1
Ethnic minority non-Muslim,	17,502	21%	-	0	1
Ethnic minority Muslim	17,502	16%	-	0	1
<i>Control variables</i>					
Male	18,044	50%	-	0	1

2.3.3 Analytical strategy

To deal with item non-response, we employed multiple imputation using Bayesian analysis in Mplus 7 (Muthén & Muthén, 2012). We used all variables in the analyses and two auxiliary variables (religiosity, values about marriage and sexuality) to create ten multiple imputed datasets. We conducted analyses for each of these datasets separately and combined the coefficients and standard errors (clustered at the classroom level) to come to our results (Rubin, 1996).

We estimate the attitude towards homosexuality at wave 1 and change in attitudes towards homosexuality between wave 1 and wave 3 using multilevel structural equation modelling (MSEM) in Mplus 7 (Muthén & Muthén, 2012). We use a two-level design to take the clustering of students into classrooms into account. All continuous predictors are centred around the grand mean. To account for non-normally distributed data, we make use of a maximum likelihood estimator with robust standard errors (MLR). As the results differ substantially between Germany, England, the Netherlands and Sweden, we employ a multi-group model (fully interacted model) according to survey country.

As changes in a characteristic are often correlated with the initial level of a characteristic, simply using the difference in a score between two timepoints as a dependent variable can exhibit poor reliability (Edwards, 1994). Therefore, we make use of a latent change score model (McArdle, 2001) to estimate the change in attitude towards homosexuality. A latent change score model represents growth by a latent factor that consists of two additive components: constant and proportional growth. First,

constant growth refers to the general increase or decrease of scores over time. For example, there may be a general trend towards more conservative or progressive attitudes towards homosexuality between wave 1 and wave 3. Second, proportional growth captures the extent to which a score at one timepoint is related to the change in this score at the next timepoint. For example, it is conceivable that the change in attitudes towards homosexuality between wave 1 and wave 3 depends on the attitude an individual has at wave 1. For a more elaborate description of the model, see Appendix A.3.

The main focus of this study are the effects *net* of these general trends. Therefore, controlling for the constant and proportional growth, we add student and classroom level predictors to assess to what extent this latent change score between wave 1 and wave 3 and the attitude at wave 1 varies according to these covariates (Model 1). Next, to assess to what extent the effect of the classroom context (classroom AHCO) varies by student-level characteristics, we add random slopes of the student-level variables and include cross-level interactions between these random slopes and this classroom characteristic (Model 2)⁷.

2.4 Results

2.4.1 Descriptive results

Table 2.2 shows the pathways of attitudes towards homosexuality between waves 1 and waves 3, stratified by ethno-religious group and survey country. In all countries, the attitude towards homosexuality at wave 1 and wave 3 is most progressive for ethnic majorities, followed by minority non-Muslims and minority Muslims, respectively. The average attitude towards homosexuality becomes more progressive over the two-year period for all groups in all countries to a comparable extent. The majority of students show no change in their attitudes towards homosexuality. If their attitudes do change, this is most likely to be in a progressive direction. Minority Muslim students generally show the highest degree of change in a conservative direction, followed by minority non-Muslims and ethnic majorities, respectively.

⁷ In an additional multilevel multinomial regression model, we found that the predictors affect each step-change in attitudes towards homosexuality in a similar way: for most variables, an increase of 1 in the predictor is associated with an approximately similar increase or decrease in the likelihood of answering each subsequent answer category (versus ‘never ok’) (see Appendix A.9).

Table 2.2: Mean attitude towards homosexuality and rate of change in attitudes towards homosexuality for native, minority non-Muslim and minority Muslim respondents. Results stratified by country.

Country	Ethnicity/religion	Attitude (W1)	Attitude (W3)	t (W1 – W3)	% Negative change	% No change	% Positive change
England ($n = 1,735$)	Native	2.1	2.5	14.9***	7.3	65.2	34.8
	Minority non-Muslim	1.6	2.1	8.5***	9.0	53.0	38.0
	Minority Muslim	0.7	1.0	3.0**	12.9	60.0	27.1
	Overall	1.8	2.3	17.3***	8.1	57.2	34.7
Germany ($n = 2,692$)	Native	2.0	2.5	19.7***	5.7	58.8	35.6
	Minority non-Muslim	1.5	2.1	11.3***	8.7	49.9	41.3
	Minority Muslim	0.6	1.1	9.7***	10.3	50.2	39.5
	Overall	1.7	2.1	24.4***	7.3	54.9	37.8
Netherlands ($n = 2,046$)	Native	2.2	2.5	13.8***	10.2	59.1	30.7
	Minority non-Muslim	2.0	2.3	5.7***	8.1	63.6	28.4
	Minority Muslim	0.8	1.1	3.8***	13.4	52.9	33.8
	Overall	2.1	2.4	15.3***	10.2	59.2	30.6
Sweden ($n = 2,080$)	Native	2.5	2.7	9.8***	6.5	72.2	21.3
	Minority non-Muslim	2.1	2.4	5.9***	11.9	62.1	26.0
	Minority Muslim	1.6	1.8	2.2*	16.9	57.3	25.8
	Overall	2.3	2.5	11.1***	9.2	67.7	23.1
Overall ($n = 8,553$)	Native	2.2	2.6	29.3***	7.5	61.8	30.7
	Minority non-Muslim	1.8	2.2	16.1***	9.6	65.5	34.5
	Minority Muslim	0.9	1.2	10.2***	12.7	53.7	33.6
	Overall	1.9	2.3	34.6***	8.6	59.5	31.8

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Only respondents with non-missing values for both wave 1 and wave 3. Answers range from 0 (never okay) to 3 (always okay).

Figure 2.1 shows the (a) mean student attitudes towards homosexuality at wave 1 by student AHCO and (b) mean classroom attitude towards homosexuality at wave 1 by classroom AHCO. The solid lines are the linear fitted regression lines and the dashed lines are the quadratic fitted regression lines. Figure 2.1a shows that the more progressive the student AHCO, the more progressive the attitudes towards homosexuality at wave 1. In Figure 2.1b, each dot represents one classroom with more than 5 students with non-missing values for attitudes towards homosexuality in wave 1 and wave 3 before imputation. The figure shows that the more progressive the classroom AHCO, the more progressive the mean attitudes towards homosexuality at wave 1 between the classrooms. Figure 2.1b shows a slight curvilinear relationship, which seems to be driven primarily by Sweden (see Appendix D). In our multi-group model, including the quadratic term of

classroom AHCO and student AHCO did not improve model fit, so we will not include it in our analyses to ease the interpretation of the results. Together, these figures show that the attitudes in the country of origin of students' parents transfer to the attitudes of the students. As a result, the country of origin of classmates' parents plays an important role in forming the cultural mainstream of the classroom. In the following section we will examine to what extent this classroom context influences the (change in) attitudes towards homosexuality of students in the classroom.

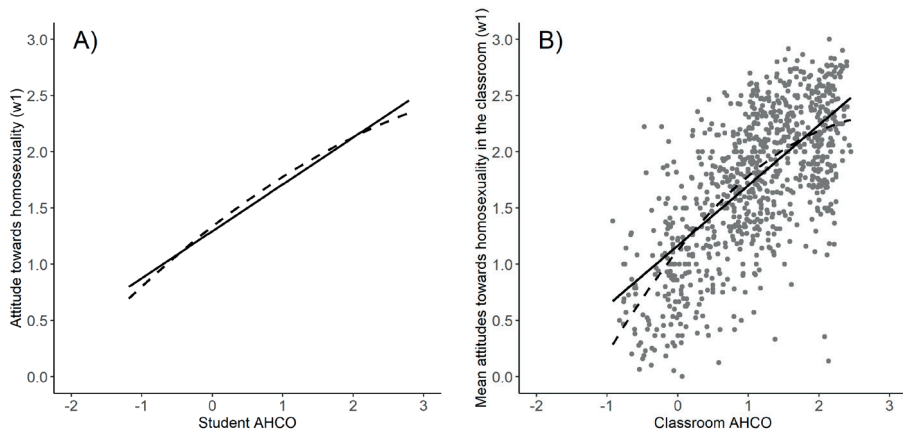


Figure 2.1: (a) attitudes towards homosexuality at wave 1 by student AHCO and (b) mean attitudes towards homosexuality in the classroom at wave 1 by classroom AHCO. *Note:* The solid lines are the linear fitted regression lines and the dashed lines are the quadratic fitted regression lines. Figure 2.1b includes only classrooms with more than 5 students with non-missing values for both wave 1 and wave 3 ($n_{\text{classrooms}} = 692$).

2.4.2 Multivariate results

An intercept-only model (not presented here) showed that the intraclass correlation coefficient (*ICC*) for attitudes towards homosexuality at wave 1 varies between .15 in Sweden and .23 in the Netherlands. This means that the classroom accounts for 15% and 23% of the total variance in attitudes at wave 1 in Sweden and the Netherlands, respectively, while student characteristics account for the remaining 85% and 77%. The *ICC* for changes in attitudes towards homosexuality between wave 1 and wave 3 varies between .03 in Germany and .06 in Sweden.

The multivariate results for Model 1 are presented in Table 2.3. The constant growth score is captured by the constant of the change score between wave 1 and wave 3. In Model 1, we find a general trend towards a more progressive attitude about homosexuality between wave 1 and wave 3 in all countries. In line with the descriptive

results of Table 2.2, this trend is weakest positive in Sweden ($b = .14$; $p = .007$) and the Netherlands ($b = .18$; $p = .001$) and strongest in Germany ($b = .47$; $p < .001$). The proportional growth score is captured by the regression coefficient of the change score between wave 1 and 3 on the score of wave 1. In all countries to a similar extent, we find that the more progressive the attitudes towards homosexuality in wave 1, the less positive the growth in attitudes towards homosexuality between wave 1 and wave 3. This is most likely due to floor and ceiling effects: students who hold very progressive attitudes towards homosexuality at wave 1 cannot move any further in a progressive direction.

In Model 1 (W1), we find that classroom AHCO is positively associated with attitudes towards homosexuality at wave 1 for students in England ($b = .35$; $p < .001$), Germany ($b = .35$; $p < .001$), the Netherlands ($b = .16$; $p < .001$) and Sweden ($b = .21$; $p < .001$). We therefore find support for Hypothesis 1A, that the more progressive the classroom AHCO, the more progressive the attitudes towards homosexuality at wave 1. In contrast, in Model 1 (W1-W3) we find no significant association between classroom AHCO and the change in attitudes towards homosexuality between wave 1 and wave 3 in all countries. We thus find no support for Hypothesis 1B, that a more progressive classroom AHCO leads to a more progressive change in attitudes towards homosexuality.

Model 2 (Table 2.4) presents results for the interaction hypotheses. We find that the positive association between classroom AHCO and attitudes towards homosexuality at wave 1 becomes weaker with an increasing share of co-ethnic classmates in the Netherlands ($b = -.40$; $p = .02$, Model 2, W1). Given that we only find this effect in one country, we find little support for Hypothesis 2A. In addition, the share of co-ethnic classmates does not significantly influence the association between classroom AHCO and the change in attitudes towards homosexuality between wave 1 and wave 3 in all countries (Model 2; W1-W3). We therefore find no support for Hypothesis 2B, that the positive effect of classroom AHCO on changes in attitudes between wave 1 and wave 3 is weaker for students with more co-ethnic classmates⁸.

We find no support for Hypothesis 3A, which predicted that the positive effect of classroom AHCO would decrease with increasing cultural distance. Instead, we even find that the association between classroom AHCO and attitudes towards homosexuality at wave 1 becomes significantly stronger with increasing student AHCO distance in Sweden ($b = .09$; $p = .04$). Also, student AHCO distance does not significantly influence the association between classroom AHCO and changes in attitudes towards homosexuality in all countries (Model 2; W1-W3). We therefore find no support for Hypothesis 3B.

8 We also run the analyses separately for native, minority non-Muslims and minority Muslims (not shown here) and we find no significant differences between these groups in the influence of the share of co-ethnic classmates on the association between classroom AHCO and the (change) in attitudes towards homosexuality.

Table 2.3: Multilevel latent change score model (fixed effects only) to explain attitude towards homosexuality at wave 1 (W1) and change in attitude towards homosexuality between wave 1 and wave 3 (W1-W3) by respondent and classroom characteristics in each country.

Model 1																
England			Germany			The Netherlands			Sweden							
W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3							
Fixed part																
Constant	2.16 ***	(.04)	.31 ***	(.05)	1.94 ***	(.05)	.47 ***	(.06)	2.41 ***	(.05)	.18 **	(.06)	2.55 ***	(.06)	.14 **	(.05)
<i>Student level</i>																
Attitude wave 1																
Share co-ethnics	-1.3	(.10)	-1.2	(.11)	.08	(.12)	-1.1	(.12)	-.59 ***	(.16)	.04	(.19)	-.72 ***	(.18)	.01	(.14)
Student AHCO	.26 ***	(.04)	.07	(.04)	.23 ***	(.04)	.10 **	(.04)	.17 ***	(.04)	.11 **	(.04)	.23 ***	(.03)	.09 **	(.03)
Student AHCO distance	-.07	(.04)	-.08	(.05)	-.01	(.05)	-.04	(.04)	-.12 *	(.05)	.02	(.06)	-.06	(.04)	.02	(.03)
Minority non-Muslim	-.18 *	(.08)	-.11	(.09)	-.02	(.10)	-.12	(.10)	-.45 **	(.13)	.04	(.16)	-.28 *	(.13)	-.01	(.09)
Minority Muslim	-.64 ***	(.10)	-.48 ***	(.10)	-.49 ***	(.11)	-.44 ***	(.10)	-1.02 ***	(.15)	-.27	(.17)	-.53 ***	(.14)	-.27 **	(.10)
Male	-.77 ***	(.04)	-.09 *	(.04)	-.77 ***	(.04)	-.19 ***	(.03)	-.84 ***	(.04)	-.24 ***	(.03)	-.80 ***	(.04)	-.15 ***	(.04)
<i>Classroom level</i>																
Classroom AHCO	.35 ***	(.07)	.00	(.07)	.35 ***	(.05)	-.08	(.05)	.16 ***	(.04)	-.03	(.04)	.21 ***	(.04)	-.05	(.04)
Random part																
Var(students)	1.09	(.03)	.67	(.02)	1.05	(.02)	.70	(.02)	.86	(.03)	.58	(.02)	1.01	(.03)	.62	(.02)
Var(classrooms)	.07	(.01)	.04	(.01)	.09	(.01)	.03	(.01)	.12	(.03)	.04	(.01)	.09	(.01)	.05	(.01)
Fit statistics																
Parameter	<i>df</i>															
Deviance	95876	88														
AIC	96052															
n_{students}	4,180	4,788	4,176	4,914												
$n_{\text{classrooms}}$	192	239	198	238												

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table 2.4: Multilevel latent change score model (cross-level interactions) to explain attitude towards homosexuality at wave 1 (W1) and change in attitude towards homosexuality between wave 1 and wave 3 (W1-W3) by respondent and classroom characteristics in each country.

	Model 2										
	England			Germany			The Netherlands			Sweden	
	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3	
Fixed part											
Constant	2.22**	(.06) .26***	(.05) 1.95***	(.06) .46***	(.06) 2.50***	(.07) .13*	(.06) 2.59***	(.06) .12*	(.06) .12*	(.06) .12*	(.06) .12*
<i>Student level</i>											
Attitude wave 1		-53***	(.02)	-55***	(.02)	-56***	(.02)	-53***	(.02)	-53***	(.02)
Share co-ethnics	-25	(.20) .00	(.13) -2.2	(.16) -0.6	(.14) -53	(.29) .16	(.21) -80**	(.24) .13	(.24) .13	(.24) .13	(.19) .13
Student AHCO	.26***	(.04) .07*	(.04) .23***	(.04) .10**	(.04) .14**	(.05) .12**	(.04) .26***	(.03) .10**	(.03) .10**	(.03) .10**	(.03) .10**
Student AHCO distance	-.05	(.05) -.08	(.05) .06	(.06) -.04	(.05) -.13**	(.05) .02	(.06) -.03	(.04) .02	(.04) .02	(.04) .02	(.03) .02
Minority non-Muslim	-.29*	(.14) -.04	(.10) -.13	(.11) -.09	(.10) -.49*	(.22) .12	(.16) -.34*	(.15) .05	(.15) .05	(.15) .05	(.11) .05
Minority Muslim	-.83***	(.17) -.40**	(.13) -.67***	(.12) -.40**	(.12) -1.16***	(.25) -.19	(.20) -.62***	(.17) -.19	(.17) -.19	(.17) -.19	(.13) -.19
Male	-.78***	(.04) -.09*	(.04) -.78***	(.04) -.19***	(.03) -.84***	(.04) -.24***	(.03) -.80***	(.04) -.16***	(.04) -.16***	(.04) -.16***	(.04) -.16***
<i>Classroom level</i>											
Classroom AHCO	.38**	(.14) -.09	(.11) .61***	(.11) -.26*	(.12) .07	(.12) -.03	(.11) .24*	(.10) -.13	(.10) -.13	(.10) -.13	(.08) -.13
* Share co-ethnics	-.32	(.28) .06	(.20) -.22	(.18) .03	(.16) -.40*	(.17) -.06	(.17) -.08	(.15) -.01	(.15) -.01	(.15) -.01	(.14) -.01
* Student AHCO distance	.11	(.12) .01	(.09) -.12	(.08) .02	(.06) -.01	(.05) .01	(.06) .09*	(.04) .04	(.04) .04	(.04) .04	(.04) .04
* Minority non-Muslim	-.10	(.20) .12	(.17) -.29	(.16) .02	(.16) .04	(.19) .05	(.16) -.07	(.14) .06	(.14) .06	(.14) .06	(.10) .06
* Minority Muslim	-.26	(.20) .12	(.20) -.57***	(.17) .06	(.15) -.05	(.20) .06	(.15) -.10	(.15) .09	(.15) .09	(.15) .09	(.12) .09
Random part											
Var(students)	1.09	(.03) .66	(.02) 1.03	(.03) .69	(.02) .85	(.03) .57	(.02) .99	(.03) .60	(.03) .60	(.03) .60	(.02) .60
Var(classrooms)	.06	(.02) .03	(.01) .10	(.02) .02	(.02) .12	(.04) .03	(.02) .08	(.02) .04	(.02) .04	(.02) .04	(.02) .04

Table 2.4 (continued): Multilevel latent change score model (cross-level interactions) to explain attitude towards homosexuality at wave 1 (W1) and change in attitude towards homosexuality between wave 1 and wave 3 (W1-W3) by respondent and classroom characteristics in each country.

		Model 2							
		England		Germany		The Netherlands		Sweden	
		W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3
Fit statistics	Parameter								
	Deviance	95668	184						
	AIC	96036							
	n_{students}	4,180	4,788	4,176		4,914			
	$n_{\text{classrooms}}$	192	239	198		238			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

We find that, relative to ethnic majorities, minority Muslims hold much more conservative attitudes towards homosexuality at wave 1 in England ($b = -.83$; $p < .001$), Germany ($b = -.67$; $p < .001$) the Netherlands ($b = -1.16$; $p < .001$) and Sweden ($b = -.62$; $p < .001$, Model 2, W1). This is also significantly more negative compared to minority non-Muslims in England (Wald $\chi^2(1) = 26.91$; $p < .001$), Germany (Wald $\chi^2(1) = 72.78$; $p < .001$), the Netherlands (Wald $\chi^2(1) = 11.13$; $p < .001$) and Sweden (Wald $\chi^2(1) = 35.53$; $p < .001$). Relative to ethnic majorities, the association between classroom AHCO and attitudes towards homosexuality at wave 1 is significantly less positive for minority Muslims in Germany ($b = -.57$; $p = .001$), but not in the other countries. In Germany, the association between classroom AHCO and attitudes at wave 1 is also significantly weaker for minority Muslims compared to minority non-Muslims (Wald $\chi^2(1) = 7.38$; $p = .006$). As we do not find these differences in the other countries, we find little support for Hypothesis 4A, that the positive effect of classroom AHCO on attitudes towards homosexuality at wave 1 is weaker for Muslims compared to non-Muslims.

With regards to changes in attitudes towards homosexuality (Model 2, W1-W3), minority Muslims show a significantly less positive trend compared to ethnic majorities in in England ($b = -.40$; $p = .002$) and Germany ($b = -.40$; $p = .001$). The trend of minority Muslims is significantly less positive compared to minority non-Muslims in all countries (England (Wald $\chi^2(1) = 14.37$; $p < .001$), Germany (Wald $\chi^2(1) = 26.09$; $p < .001$), Sweden (Wald $\chi^2(1) = 6.46$; $p = .01$), the Netherlands (Wald $\chi^2(1) = 8.00$; $p = .005$). This means that, even though Muslims, on average, become more progressive (see Table 2.2), this trend is not as strong as for ethnic majorities (in England and Germany) and minority non-Muslims (in all countries). Relative to ethnic majorities, the association between classroom AHCO and changes in attitudes towards homosexuality is not significantly different for minority Muslims in all countries. We also find no differences between minority Muslims and minority non-Muslims in this association. All in all, we find no support for Hypothesis 4B, that the positive effect of classroom AHCO on change in attitudes between wave 1 and wave 3 is weaker for Muslims compared to non-Muslims.

2.4.3 Illustrating the results

To illustrate the significant results, we use Model 1 in Table 2.3 to compute the predicted attitudes towards homosexuality at wave 1 for students with varying classroom compositions. More specifically, for each country, we show the predicted attitudes towards homosexuality at wave 1 for classrooms ranging from consisting of only native students to classrooms with an increasing share of students from two of the largest sending countries. One of these sending countries is the most progressive

of the large sending countries (black line) and the other is the most conservative of the large sending countries (grey line) in the EVS and WVS data. Additionally, we split the results according to the country scores of lower-educated (dashed line) and higher-educated (solid line) in the EVS and WVS data. In other words, the solid line shows the predicted attitudes towards homosexuality for a classroom containing only ethnic majorities and ethnic minorities with higher-educated parents, while the dashed line shows the same trend for students with lower-educated parents.

Figure 2.2 shows the predicted attitude towards homosexuality at wave 1 for various classroom compositions. As all largest sending countries have lower scores for attitudes towards homosexuality compared to the survey countries in the EVS and WVS data, a higher share of students from these sending countries results in a more conservative classroom AHCO. This, in turn, results in a more conservative predicted attitude towards homosexuality at wave 1, as we have seen in Table 2.3. The larger the difference in the EVS and WVS score between the survey country and the sending country, the larger the difference in predicted attitudes towards homosexuality according to the classroom composition. For example, the comparatively high standardized scores for Sweden and the Netherlands, compared to Germany and England, contribute to the higher intercept of these countries. Therefore, the contrast with the largest conservative sending countries is larger, which contributes to a steeper slope for these sending countries. This, of course, also depends on the strength of the effect of classroom AHCO on attitudes towards homosexuality at wave 1 in these countries, which in turn is stronger in Germany and England compared to the Netherlands and Sweden.

As can be seen in Figure 2.2, the difference in the predicted attitude towards homosexuality between ethnic majorities and minorities is somewhat larger for the higher-educated category than the lower-educated category. This is because, in the EVS and WVS data, the contrast in attitudes towards homosexuality in the country of origin of ethnic majorities and minorities is generally larger for higher-educated than for lower-educated individuals. For example, the difference in attitudes towards homosexuality of higher-educated English and Pakistani individuals (2.04) is much larger compared to that of lower-educated English and Pakistani individuals (1.57).

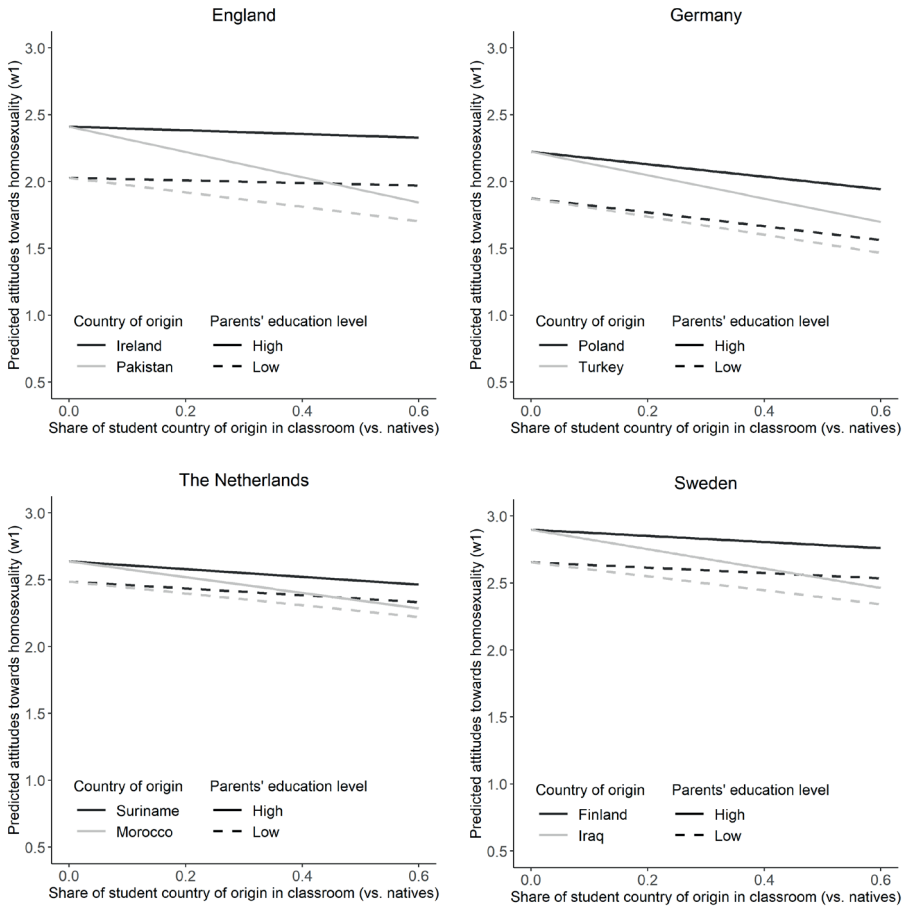


Figure 2.2: Predicted attitudes towards homosexuality at wave 1 for students in classrooms consisting of only natives (zero point on x-axis) and an increasing share of students from either the largest progressive sending country (black line) or the largest conservative sending country (grey line) in the CILS4EU dataset. Results split by country scores of higher-educated (solid line) and lower-educated (dashed line). *Note:* results based on Model 1 of the main analysis (see Table 2.3).

2.5 Discussion and conclusion

In this paper, we examined to what extent the ethnic composition of the classroom explains (changes in) attitudes towards homosexuality among native and ethnic minority youth in Western Europe. Using two-wave panel data of 18,058 students in 867 classrooms in England, Germany, the Netherlands, and Sweden, this study makes a number of contributions to the current literature on cultural assimilation. First, our results stress the importance of a social context which has often been ignored in this

line of research, namely the classroom. In all countries, there is a strong association between ethnic classroom composition and attitudes towards homosexuality at wave 1, though we find no positive association between the composition of the classroom and subsequent changes in these attitudes between wave 1 and wave 3. It could be that we find no effects on the change in attitudes towards homosexuality because the first wave of the survey was not administered in the first year of secondary school (McArdle, 2009). If the classroom has exerted most influence on attitudes towards homosexuality prior to when the first wave was conducted, we capture this only in the effect at wave 1.

Second, our results show that the assimilation process is relatively uniform. In all countries, we find a strong association between ethnic classroom composition and attitudes towards homosexuality, with only a few inconsistent differences according to individual characteristics (e.g. Muslims, share of co-ethnics and cultural distance). The finding that the composition of the classroom plays an important role in all four countries, underscores the importance of the classroom in the formation of cultural values. However, as all four countries are Western European, our data allow no conclusion on whether these results may generalize to other contexts.

Besides the association between classroom AHCO and attitudes towards homosexuality at wave 1, our results also show one other robust finding: in all countries, minority Muslims hold more conservative attitudes towards homosexuality at wave 1, and develop less strongly toward more progressive values between wave 1 and wave 3 relative to ethnic majorities. As we do not find differences between Muslims and non-Muslims in the effect of classroom composition, it is likely that other socializing contexts are more important in explaining differences between these ethno-religious groups. Indeed, a recent study suggests that the more conservative attitudes towards homosexuality among European Muslims is due to socialization in conservative religious communities and hostility from host-country populations (Röder & Spierings, 2021). When migrants move to a context that is very different from their country of origin (and sometimes even hostile), this may strengthen the feeling that their culture is under threat, which increases their determination to transfer their ethno-religious culture to others in their community (Kelley & De Graaf, 1997; Spierings, 2015). Given the high degree of anti-Muslim hostility in Western-Europe (Savelkoul, Scheepers, van der Veld, & Hagendoorn, 2012), religious socialization is likely more important than the school classroom for the formation of young Muslims' attitudes towards homosexuality.

Our research has a number of limitations: first, both for the dependent and independent variable, attitudes towards homosexuality are measured using a single item. However, some researchers have suggested that attitudes towards homosexuality are multi-dimensional, depending on for example the context or the target (Adolfson,

Iedema, & Keuzenkamp, 2010; Steffens, 2005). Even though these important nuances are not captured by using one single item, using this measure is still a relatively efficient and reliable way to retrieve general attitudes towards homosexuality among a large sample. The results produced by single self-report measures and other multi-item measures have been found to be highly correlated (Herek, 2009).⁹

Second, there is a relatively high degree of attrition between wave 1 and wave 3, which results in a substantial number of missing values for the dependent variable in the latter wave (46% at wave 3 compared to 14,7% at wave 1). If these values are not missing at random, multiple imputation and the subsequent analyses may render biased results, especially when the number of missing values is so high. In additional analyses (not shown here), we found that missing values on this variable were more likely to be among Muslim minority students (54%) and non-Muslim minority students (47%) compared to native students (43%). By taking this variable, and correlates such as religiosity, values about marriage and sexuality and attitudes at wave 1 into account when imputing the dataset, multiple imputation produces less biased results compared to alternatives such as listwise deletion (van Ginkel, Linting, Rippe, & van der Voort, 2020).

Third, when students are self-selected into schools with peers of similar origin, for example due to residential segregation, this undermines the exogeneity of our main independent variable. However, residential segregation is not as pronounced in Western Europe as in for example the United states, be it in terms of ethnicity or social class (Musterd, 2005). In the Western-European context, the distance between the home and the school is by far the most important determinant for school choice, as studies in the Netherlands (Koning & van der Wiel, 2013) and England (Burgess, Greaves, Vignoles, & Wilson, 2015) have shown. This means that residential segregation translates strongly to educational segregation (Boterman, 2019; Burgess, Greaves, Vignoles, & Wilson, 2011). In turn, socio-economic status is often coined as a driving force behind (ethnic) residential segregation (Musterd & Van Kempen, 2009). Therefore, by stratifying attitudes towards homosexuality in the country of origin according to the socio-economic status (education) of the parents, we take into account possible self-selection of students.

Fourth, while we ascribe the changes that we find to the process of cultural assimilation, it should be noted the change may also be the result of developmental processes that this age group experiences. Adolescence is a period in which individuals

9 When we correlate 'attitudes towards homosexuality' with other cultural values in the dataset, namely 'living together without being married', 'divorce' and 'abortion' we find that these correlations are moderate (see Appendix A.10). From this we can conclude that attitudes towards homosexuality do not reflect conservative values in general, but that respondents treat this item as distinct from other items that consider sexual liberalization.

undergo a process of cognitive sophistication, which can change how they understand items and how they feel about others, which in turn can lead to more progressive attitudes towards homosexuality (Ohlander et al., 2005). When assimilation and this cognitive development coincide, it is not always possible to determine what factor drives the change in values. To address this issue, future research could compare ethnic minority and majority subgroups with varying ages and lengths of residence to disentangle these two effects (see Michel, Titzmann, & Silbereisen, 2012; Titzmann & Silbereisen, 2012).

Last, we operationalize attitudes towards homosexuality in the country of origin of student's parents using EVS and WVS data that stems from the period 1995-2021. Most likely, the student's parents have moved to the destination country before this period. Accordingly, the data might not reflect the culture the parents (and indirectly their children) were socialized in. However, additional analyses (see Appendix A.1) show that there is an overall trajectory towards more progressive attitudes towards homosexuality over time for the countries in this data, that does not vary substantially between the countries. Therefore, by using standardized country scores, we get a good indication of the degree to which student's parents originate from a conservative or a progressive country, even though this was most likely measured after they have migrated.

The cultural distance between the majority and minority population has been the subject of public and political discussion for decades in Western European societies. It is therefore important to understand to what extent the cultural values are indeed different between ethnic groups and what processes can reconcile these differences. The results of this paper suggest that the classroom is an important social context in the process of cultural assimilation. Focussing on attitudes towards homosexuality, we find that students in more progressive classrooms hold more progressive attitudes towards homosexuality compared to students in more conservative classrooms, net of their own cultural background. To bridge the social and cultural divide between ethnic groups in Western Europe, policy makers should therefore aim to facilitate opportunities for these groups to interact. For example, as school tracking has been found to increase the degree of ethnic segregation in schools in Germany and the Netherlands (Karsten et al., 2006; Kruse, 2019), our results suggest that such policies can in turn also exacerbate cultural cleavages between ethnic groups. Reducing the degree of school tracking could allow adolescents to fully profit from the integrative potential of the classroom.

Chapter 3

How do personal opinions relate to online expressions? An experimental study among Muslim minority groups in the Netherlands¹

1 Nick Wuestenenk is the first author of this chapter, but the chapter presents joint work with Frank van Tubergen, Tobias Stark, and Naomi Ellemers. A slightly different version of this chapter is currently under review at an international peer-reviewed journal. Wuestenenk wrote the main part of the manuscript, built the online discussion platform, coordinated the data collection, and conducted the analysis. Stark, Van Tubergen, and Ellemers made substantial contributions to the manuscript. The authors jointly developed the idea and the design of the study. This chapter was presented at the Annual Conference of Experimental Sociology 2022 in Utrecht, at the Analytical Sociology Colloquium at the European University Institute in Florence, at the 'Dag van de Sociologie 2022' in Groningen, and at the Integration Research Group in Utrecht. The authors would like to thank all audiences for their valuable questions and comments. The authors would also like to thank Hendrik Jan Meerveld and the other members of the HTS App Development Team of the Faculty of Social and Behavioral Sciences at Utrecht University for their help in building the website. The authors are also very grateful to Amina op de Weegh for her help in writing the discussions for the website, and to Koen Veldman and Marthe Blaak for coding the comments of all the (fictitious) users.

Abstract

There has been much debate about how cultural differences between ethnic groups may affect the cohesion of multicultural societies. Still, we know little about the extent to which cultural differences between groups also translate into behavioral differences, especially in online settings. To study this, we conducted an experiment in which second-generation Moroccan and Turkish Dutch participants first indicated their personal opinion on sexual liberalization, and then participated in discussions on this topic on an online platform. On the discussion platform, participants were randomly assigned to either a progressive, conservative or mixed online discussion. Overall, we found that the convergence between personal opinions and online expressions was stronger for progressive than for conservative participants. Additionally, conservatives (but not progressives) were less likely to express their personal opinions, and more likely to deviate from their personal opinions, when they were exposed to an incongruent versus congruent online environment.

3.1 Introduction

Due to the large inflow of immigrants, the cultural landscape has changed substantially in Western European societies in recent decades. In contrast to the increasingly secular ethnic majority, many ethnic minorities are Muslim (Simsek et al., 2019; Van Tubergen & Sindradóttir, 2011; Voas & Fleischmann, 2012). Relatedly, whereas the ethnic majority population is becoming increasingly progressive, Muslim ethnic minorities have comparatively conservative views on issues such as sexual liberalization and gender egalitarianism (Kalmijn & Kraaykamp, 2018; Kogan, 2018; Maliepaard & Alba, 2016). Part of the ethnic majority population perceives the conservative values of Muslim minority groups as a threat to their liberal secular culture, which triggers intergroup prejudice and discrimination (McLaren & Johnson, 2007; Schlüter & Scheepers, 2010). As a result, these cultural differences have sparked public debate and scientific research about the consequences of ethnic diversity for the cohesion of Western European societies (Fleischmann & Phalet, 2012; Foner & Alba, 2008; Kogan et al., 2019).

However, by focusing so strongly on the cultural differences between ethnic groups, previous research provides only a limited understanding of how ethnic diversity affects current multicultural societies in practice (Ward, 2013; West et al., 2017). Even though cultural differences between groups may be substantial, this does not necessarily mean that behavioral differences are as well: many studies find that ethnic minorities align their behavior with either the ethnic majority or ethnic minority culture depending on what they perceive as appropriate in their social environment (Howarth et al., 2014; Stuart & Ward, 2011; Ward et al., 2018; West et al., 2017). For example, some studies find that ethnic minorities are more likely to endorse the ethnic majority culture in the public domain, and to maintain the ethnic minority culture in the private domain (Arends-Tóth & van de Vijver, 2004, 2003; Noels & Clément, 2015; Zhang & Noels, 2013). Therefore, to gain a better understanding of the consequences of ethnic diversity and cultural differences, research could not only emphasize the degree to which ethnic groups differ in their personal preferences, but also how and when these preferences materialize in their public behavior.

Previous research on the relationship between personal preferences and public behavior of ethnic minorities focusses almost exclusively on offline contexts. However, in recent years, social media have become ubiquitous in the public debate, and these platforms are increasingly used by ethnic minorities to engage with – and learn about – the groups that they associate with (Croucher, 2011; Neubaum & Krämer, 2017). Even though the content that we find on these platforms is popularly believed to reflect public opinion in society at large (Anstead & O’Loughlin, 2015), previous research suggests that this is not the case. For example, as predicted by the Spiral of Silence theory (Noelle-Neumann, 1974), some studies find that individuals are more likely

to express their personal opinion online when they anticipate that others will agree with them (Chen, 2018; Gearhart & Zhang, 2014, 2015, 2018; Matthes et al., 2018; Ordoñez & Nekmat, 2019; Wu & Atkin, 2018). Other studies find that individuals adjust the opinion they express online so that it aligns closely with that of others (Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020).

Given the important role of social media in our perception of public opinion, and for the cultural adaptation and acculturation of ethnic minority groups, it is important to understand how the opinions that ethnic minorities hold relate to the opinions that they express online. For example, if ethnic minorities strategically adjust their online behavior to match those of other users, we may observe very homogenous or even extreme discussions in online environments, while people's personal opinions are comparatively heterogeneous (Noelle-Neumann, 1974). As a result, ethnic minorities may misperceive support for ethno-religious norms among their ethnic group, and strategically adjust their own online behavior in response. Such self-reinforcing processes may inflate our perception of differences between groups (Lerman et al., 2016), and the perceived irreconcilability of these differences may in turn drive salient boundaries between groups in society (Pasek et al., 2022).

Previous research on the relationship between personal opinions and online expressions does not focus on (Muslim) ethnic minority samples. Furthermore, the evidence on this relationship remains inconclusive, primarily due to methodological limitations. First, many studies use retrospective self-report surveys, even though individuals are generally not very good at recollecting their social media activities – and may not report this truthfully even if they do (Vraga et al., 2016; Vraga & Tully, 2020). Second, other studies use hypothetical (scenarios of) online environments, of which it is doubtful whether they are realistic enough to draw valid conclusions about actual online behavior (Hayes, Uldall, & Glynn, 2010; Scheufele, Shanahan, & Lee, 2001). Third, many studies that do examine actual behavior in realistic online environments do not measure the personal opinions of the participants (Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020).

Additionally, most of the studies that examine the relationship between personal opinions and online expressions share the same theoretical limitation, namely that they rely on the Spiral of Silence theory (Noelle-Neumann, 1974) to study when individuals express their opinions. In contrast, relatively few studies examine whether the opinions that individuals express online actually align with their personal opinions (but see McDevitt et al., 2003). It is a well-known finding in offline studies that individuals may deviate from their personal opinion in order to conform to the behavior of others in their direct environment (Smith & Terry, 2003; Walker et al., 2015; Willer et al., 2009). As a result, the norm that individuals observe through the behavior of others may not be an accurate reflection of the opinions that these individuals actually hold

(Centola et al., 2005; Lerman et al., 2016). Therefore, besides the willingness to speak out, it is also important to understand whether and when individuals deviate from their personal opinion when they participate in online discussions.

To address these methodological and theoretical limitations, we built a complete online discussion platform to examine whether and when the opinions that ethnic minorities express online converge with the opinions that they express in private. We will focus our study on a population for whom the perception of public opinion on social media is especially pertinent, namely second-generation Moroccan and Turkish Dutch citizens in the Netherlands. Turks and Moroccans are two of the largest ethnic minority groups in the Netherlands, of which the large majority is Muslim (Huijnk, 2018). Due to their socialization in largely Islamic ethnic minority communities, second-generation Turkish and Moroccan Dutch on average hold more conservative values on issues such as sexual liberalization compared to the predominantly secular ethnic majority (Huijnk & Andriessen, 2016; Kalmijn & Kraaykamp, 2018). However, having also grown up in a progressive Western European country, their attitudes are not as conservative as those of the first generation (Eskelinen & Verkuyten, 2020; Huijnk & Andriessen, 2016; Röder, 2015). This makes this group an interesting group to study the relationship between personal opinions and online behavior: by manipulating the norm on the online platform, we can examine whether this group is more likely to strategically adjust their behavior to a conservative norm (that is widely shared in their ethno-religious community) or a progressive norm (that is widely shared in society).

3.2 Theory and hypotheses

3.2.1 Expressing opinions

Norms are commonly described as behaviors and attitudes that are common (descriptive norms) or expected (injunctive norms) in a given social environment (Deutsch & Gerard, 1955). Norms exert a strong influence on individuals' behavior, for example because they provide individuals with an accurate interpretation of reality (informational influence) or because following norms results in the social approval of others (normative influence) (Cialdini & Goldstein, 2004; Deutsch & Gerard, 1955). Although it is often difficult to distinguish between informational and normative influence in practice, they differ (among other things) with respect to the relationship between personal opinions and behavior: whereas informational influence posits that individuals change their behavior because they accept the norm as valid (i.e. opinions and behaviors align), normative influence argues that individuals do so in order to gain social rewards or avoid disapproval (i.e. opinions and behavior do not align) (Deutsch & Gerard, 1955; Price, Nir, & Cappella, 2006). In this paper, we argue that online norms can lead to

a discrepancy between personal opinions and online expressions, hence we focus on normative influence as the main mechanism behind individuals' online behavior.

Many studies in the field of media and communication rely on the normative account of the Spiral of Silence theory (Noelle-Neumann, 1974) to assess the degree to which individuals express their personal opinion online. According to this theory, individuals refrain from expressing their personal opinions when they are faced with an incongruent norm out of fear of social isolation (i.e. a social motivation). This process can become self-reinforcing: when individuals adjust the expression of their personal opinion to the norm in their environment, the majority online opinion is more likely to be expressed than the minority online opinion. This, in turn, moves the perceived norm further in the direction of the majority opinion, thereby decreasing the likelihood that minority opinions are expressed even more. As people are exposed to only a biased selection of opinions, the Spiral of Silence can lead to incorrect inferences about collective support for a particular norm, as is well documented in social perception biases such as false consensus (Ross, Green, & House, 1977) and pluralistic ignorance (Katz & Allport, 1931).

Studies in online settings have found support for this theory: the more someone experiences an online norm that is incongruent with their own personal opinion, the less likely they are to post a comment (Gearhart & Zhang, 2015; Ordoñez & Nekmat, 2019; Wu & Atkin, 2018). Similarly, studies on (dis)likes in hypothetical online environments also find that individuals are more likely to express their personal opinions when the norm is congruent with their own personal opinion (by liking) compared to when this is not the case (by disliking) (Ordoñez & Nekmat, 2019; Pang et al., 2016; Wu, Oeldorf-Hirsch, & Atkin, 2020). We therefore expect that participants are more likely to express their personal opinion in an online environment when the dominant norm is congruent with their personal opinion compared to an environment that is (partially) incongruent.

In this study, participants can express their opinion in two ways, namely by (dis)liking comments and posting their own comments. We assume that they are expressions of the same underlying opinion(s). There are differences, however, in terms of cognitive load and frequency. (Dis)liking is often considered a 'lightweight' expression an opinion on social media compared to commenting (Hayes, Carr, & Wohn, 2016). Given the comparatively lower effort that (dis)liking requires, this type of behavior is generally exercised more frequently than commenting (Khobzi, Lau, & Cheung, 2018; Ordoñez & Nekmat, 2019). Still, like for commenting, studies have found that users actively reflect on this behavior, both when sending and receiving (dis)likes (Carr et al., 2016; Hayes et al., 2016; Sherman et al., 2018). We therefore expect a similar relationship between norm congruency and opinion expression for (dis)liking as for commenting.

H1: Second-generation Moroccan and Turkish Dutch participants are more likely to express their personal opinion in a congruent online norm condition than in a mixed and incongruent online norm condition by posting (a) (dis)likes and (b) comments.

3.2.2 Expressing deviating opinions

Besides the decision whether or not to participate in online discussions, which is the focus of the Spiral of Silence theory, individuals may also adjust the kind of opinion that they express to the online norm (McDevitt et al., 2003). For example, previous studies on online prejudiced behavior find that individuals express more prejudiced opinions when they are exposed to more prejudiced content by other users (Álvarez-Benjumea & Winter, 2018; Hsueh, Yogeewaran, & Malinen, 2015). Inversely, other studies find that individuals express less prejudiced opinions when the norm in the digital environment opposes such viewpoints (Munger, 2017; Siegel & Badaan, 2020).

Because of the socially beneficial reasons to align public behavior with the dominant norm, individuals may even publicly endorse a norm when they do not support it privately (Barreto & Ellemers, 2003). Research on this discrepancy between personal opinions and expressed opinions is sparse in online settings, but studies in offline settings suggest that it is very prevalent (Smith & Terry, 2003; Walker et al., 2015; Willer et al., 2009). To illustrate, studies on delinquency (Megens & Weerman, 2010) and drinking behavior (Terry, Hogg, & McKimmie, 2000), find that individuals who are exposed to a norm that is incongruent with their personal opinions are more likely to display behavior that does not align with their own personal opinions compared to individuals that were exposed to an opinion-congruent norm. We therefore hypothesize the following:

H2a: Second-generation Moroccan and Turkish Dutch participants are less likely to deviate from their personal opinion in their online expressions in a congruent online norm condition than in a mixed or incongruent online norm condition by posting (dis)likes.

Besides (dis)likes, we also examine the extent to which participants deviate from their personal opinions by the comments that they post on the forum. Because the number of comments in the mixed norm condition was low ($n = 10$), we compare only the incongruent with the congruent norm condition. Just like for (dis)likes, we expect participants to deviate more from their personal opinion when the norm condition is incongruent with their personal opinions versus when it is congruent. In practice, this means that we expect participants with a conservative opinion on the topic to

post more progressive comments when they find themselves in a progressive online environment, and vice versa. We therefore hypothesize the following:

H2b: Second-generation Moroccan and Turkish Dutch participants with a conservative opinion post more progressive comments and those with a progressive opinion post more conservative comments in the incongruent norm condition than in the congruent norm condition.

Finally, as predicted by social identity theory, group members might conform their behavior to their perception of a prototypical group member, not out of any majority pressure or because they are persuaded by the substance of the arguments, but rather because they are enacting their understood roles as group members.

3.3 Data and methods

3.3.1 Data collection

Participants were recruited using a Facebook ad campaign that was online between 14 October 2021 and 25 October 2021, which targeted Dutch residents aged 18-64 who liked pages related to Morocco, Turkey and Islam². The participants were informed that Utrecht University was conducting a study about the opinions of Turkish and Moroccan Dutch on a number of societal issues, and how they share these opinions with others. The recruitment process is summarized in Figure 3.1. After providing informed consent, the participants were directed to a survey, which asked their personal opinions regarding five societal issues (homosexuality, divorce, abortion, sex before marriage and veiling)³.

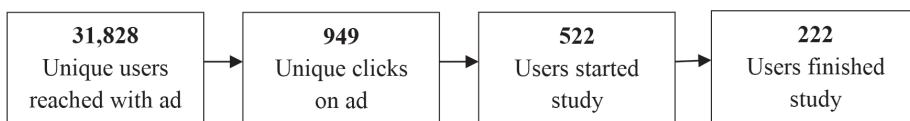


Figure 3.1: Summary of the recruitment process with the Facebook ad.

2 The study was approved by the Ethics Committee of the Faculty of Social and Behavioral Sciences of Utrecht (approval number 21-0389).

3 After browsing online discussions among the Moroccan Dutch community on www.marokko.nl, we discovered that these five issues regarding sexual liberalization were frequently discussed. To align with the experiences of these groups, we chose these topics for our study.

3.3.2 Online forum

After they completed the survey, the participants were directed to an online discussion forum, which was designed specifically for the purpose of this study.⁴ Here, the participants were informed that they were going to read the comments of others about several societal issues, which they could respond to by commenting, liking and disliking. The participants were then asked to think of a username they would like to use on the discussion forum. This username would be displayed on the screen when they posted a comment, replied to other comments or (dis)liked comments and posts by other users. The participants were then directed to the discussions on the forum.

The discussion forum consisted of five pages, each page covering one societal issue that was asked about in the survey. The content of the discussions on the forum (e.g. posts, comments, users and (dis)likes) had all been uploaded by the researchers prior to the start of the experiment⁵. This means that, aside from the experimental treatment that the participants were assigned to (see section ‘experimental treatment’), the content of the forum was the same for all participants. The participants could not interact with each other and could not see what other participants commented or (dis)liked. In other words, they only responded to the input of ‘fictitious’ users that had been uploaded by the researchers prior to the start of the experiment.

To maximize the realism of the discussions, all posts and comments were taken from the forum of www.marokko.nl, a large online forum with an active Moroccan-Dutch community. The researchers only made minor changes to these comments to make the discussions more realistic and easier to follow. Some comments were adjusted to make them align better with other comments in the discussions, other comments were shortened, and some typically Moroccan phrases and terms were translated to Turkish, so that half of the comments on the forum could have also been from a Turkish user. Other than this, we made no changes to the argumentation and spelling of the comments, so that the discussions resembled an actual online discussion among Turkish and Moroccan Dutch users as accurately as possible. To further add to the realism of the online platform, all fictitious users had usernames that signaled a Turkish or Moroccan ethnicity, that was displayed directly above their comment.

On each page, the topic was introduced by a post of a fictitious user, in which they presented their personal opinion about an online article (see Figure 3.2, Panel A). The thumbnail image and title of this article (including a hyperlink to the article) was also displayed in the post, as is very common on other social media platforms. This post was followed by six to eight comments by other fictitious users (see Figure 3.2,

4 The code of a similar discussion platform that we used for Chapter 4 is available open source at <https://github.com/nhwuestenenk/discussion-forum-2-public>

5 The discussions that we used in the experiment can be found in Appendix B.1 (translated from Dutch to English).

Panel B). The participant could perform four actions on the forum: reply to comments, like comments and posts, dislike comments and posts, and post a comment at the bottom of the page. The participant was not prompted to perform any of these actions). All actions of the participant were immediately updated on the screen (and comments were timestamped) to simulate the discussion experience as accurately as possible. For example, after liking a comment, the username of the participant was shown among the users who liked a comment.

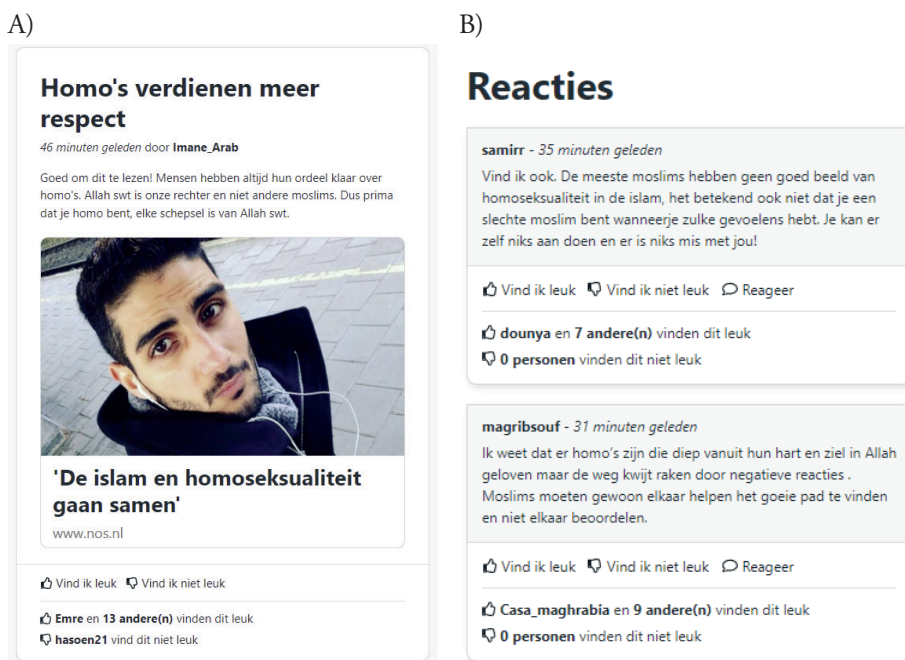


Figure 3.2: Impression of a forum page (in Dutch). A post on homosexuality in (Panel A) and an excerpt of the comments displayed below the post (Panel B).

After going through all discussions, the participants completed an attention check and were then debriefed about the purpose of this study. Lastly, they could enter their email address to receive a €10 gift voucher, or they could choose a charity to which they would like the €10 to be donated.

3.3.3 Experimental treatment

The study employed a between-subjects design, in which the participants were randomly assigned to one of three norm conditions, namely a conservative, progressive

or a mixed online norm (see Figure 3.3 for a flowchart). In the conservative norm condition, the post introducing the topic and all comments expressed a conservative stance on the topic that is discussed, whereas in the progressive norm condition the initial post and all comments were progressive. In the mixed condition, the initial post was neutral (i.e., the user was not sure what they thought on the issue⁶) and 50% of the comments were conservative and 50% of the comments were progressive.

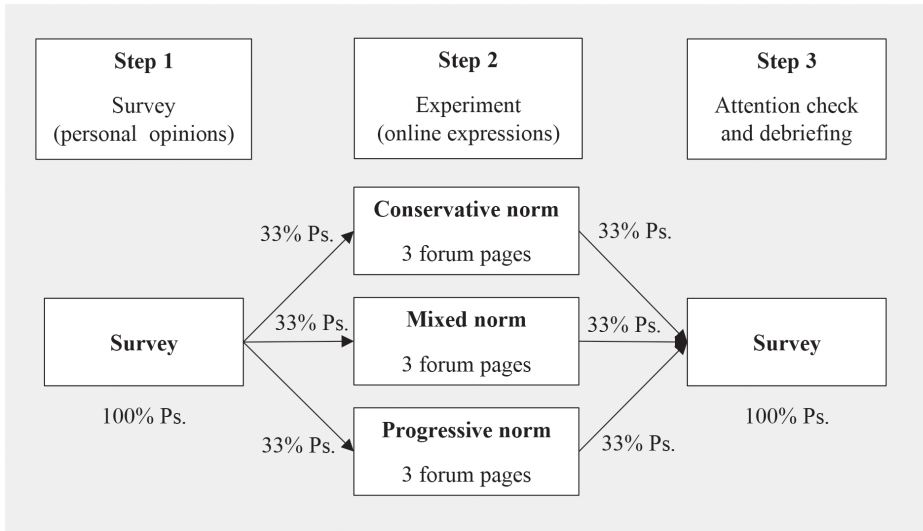


Figure 3.3: Flowchart of the implementation of the experiment. *Note:* Ps. = participants.

To create these experimental conditions, two research assistants independently coded all the comments by the fictitious users on a scale of 0 (very conservative) to 10 (very progressive) prior to the start of the experiment. The independent coders were instructed that conservative opinions expressed support for a conservative ethno-religious norm (e.g., veiling) or opposition to a progressive secular norm (e.g., homosexuality, divorce, sex before marriage and abortion), and the opposite for progressive comments. Based on the finding that individuals generally have an intuitive understanding of the valence of online comments (Chung, 2019; Wu & Atkin, 2018), we did not provide coders with additional criteria for coding the comments. The results showed acceptable internal consistency (Krippendorff's $\alpha = .68$), so we took the mean of these two scores as the score for each comment. The comments assigned to the

⁶ Because the posts in the mixed norm condition did not express a conservative or progressive view, we did not include the (dis)likes for these posts in the analyses.

conservative condition received significantly lower average scores ($M = 1.80$; $SD = 0.86$) compared to the mixed condition ($M = 3.98$; $SD = 2.16$) ($t = 6.28$; $p < .001$), which in turn received significantly lower average scores than the progressive condition ($M = 5.87$; $SD = 1.51$) ($t = 4.80$; $p < .001$)⁷.

All comments in the conservative and progressive norm condition had between seven to twelve likes and between zero to two dislikes by other fictitious users (with most comments receiving zero dislikes). In the mixed condition, the progressive and conservative comments on average received an equal amount of likes and dislikes from fictitious users, with each comment receiving between seven to twelve likes and dislikes.

3.3.4 Selections

In a preliminary analysis, we found that personal opinions about ‘divorce’ and ‘not veiling’ were very positively skewed, meaning that most participants had progressive personal opinions about these topics (see Appendix B.3 for the distribution of personal opinions for all topics). As a result, only very few participants with a conservative opinion could be assigned to the experimental treatments for these topics. We therefore decided to conduct our analysis only for the other three topics, namely ‘homosexuality’, ‘abortion’ and ‘sex before marriage’.

Of the 222 participants who finished the study, 174 participants were born in the Netherlands with at least one parent born in Turkey or Morocco (the second generation). We also included 32 participants who were born in Turkey and Morocco, but moved to the Netherlands before the age of 10, the so-called 1.5 generation. Having spent many of their formative years in the Netherlands, this group has also been socialized in both the ethno-religious community and the broader secular society, just like the second generation. We excluded 16 participants who did not meet these criteria. For each of the remaining 206 participants, we had three observations, one for each of the three topics that were discussed on the online forum.

We also excluded 157 observations by 101 participants with moderate personal opinions about a topic that was discussed on the forum (see the section ‘measures’ for further explanation on the opinion measure). We did this because, in contrast to conservative and progressive opinions, it is not possible for these observations to identify a congruent versus an incongruent norm condition.

Lastly, we excluded 11 observations that completed the discussion on a particular topic but had missing values for the associated personal opinions. With these selections, the total sample contained 188 participants with a total of 450 observations.

⁷ In Appendix B.2, we show the distribution of comment scores by topic and norm condition. Here, it can be seen that the average scores differ between the experimental conditions and there is no overlap between experimental conditions in the scores that comments receive.

3.3.5 Measures

We focus on three outcomes, namely *likes*, *dislikes* and *comment scores*. (Dis)likes were measured using a dichotomous variable (0 = no (dis)like on a page and 1 = one or more (dis)likes on a page). Overall, participants were more likely to post a like ($M = 60\%$) than a dislike ($M = 44\%$) on a page ($z = 4.94$; $p < .001$). In our study, participants can express their opinion using (dis)likes by liking comments that align with their personal opinions and disliking comments that do not. Also, participants can deviate from their personal opinions by liking comments that do not align with their personal opinions and disliking opinions that do (see analytical strategy). Overall, participants were more likely to express their opinion on a page ($M = 60\%$) than to deviate from their opinion on a page ($M = 35\%$) ($z = 7.48$; $p < .001$). To measure the comment scores of the participants, two independent research assistants coded all the comments by the participants on a scale of 0 (very conservative) to 10 (very progressive). The results showed acceptable internal consistency (Krippendorff's $\alpha = .79$), so we took the mean of these two scores as the score for each comment ($N_{\text{comments}} = 57$; $M = 4.51$; $SD = 2.17$).

We examined how these three outcomes were influenced by (the combination of) personal opinions and norm incongruency. To measure *personal opinions*, the participants indicated in the survey before the experiment whether they thought that each of the following issues were wrong on a scale of 0 (always wrong) to 10 (never wrong), namely homosexuality, abortion and sex before marriage. We only included observations that could be categorized as conservative (score 0-3, $n_{\text{observations}} = 259$) or progressive (score 7-10, $n_{\text{observations}} = 191$). See Appendix B.3 for the distribution of personal opinions for all topics.

To measure *norm incongruency*, we looked at the combination of the personal opinions of the participant and the experimental condition that they were assigned to. The participants were randomly assigned to a conservative ($n_{\text{observations}} = 163$), mixed ($n_{\text{observations}} = 154$) or progressive norm condition ($n_{\text{observations}} = 133$). This norm condition is then congruent ($n_{\text{observations}} = 158$), partially congruent (the mixed condition; $n_{\text{observations}} = 154$) or incongruent ($n_{\text{observations}} = 138$) with their personal opinions. See Appendix B.4 for the distribution of the personal opinions of participants over the norm conditions.

3.3.6 Analytical strategy

In the experiment, the congruent norm condition contains only congruent comments, the mixed norm condition contains 50% congruent and 50% incongruent comments, and the incongruent norm condition contains only incongruent comments. Therefore, participants can express their opinion using (dis)likes by liking congruent comments in the congruent and mixed norm conditions, and disliking incongruent comments in the mixed and incongruent norm conditions. Alternatively, participants can deviate

from their opinion by disliking congruent comments in the congruent and mixed norm conditions, and liking incongruent comments in the mixed and incongruent comments. In the following analyses, we will compare the probability that participants perform these actions between the congruent, mixed and incongruent norm condition to test out hypotheses concerning (dis)likes.

For our analyses concerning the probability of posting (dis)likes and comments, we used a logistic regression. As the three discussions are not independent observations, we used a two-level design to take the clustering of discussions into participants into account. To ease the interpretation of the results of the logistic regression, we compared the predicted probability of posting a comment and (dis)like in our results, rather than the coefficients of the model, which we show in Appendices D and G. We used a multilevel linear regression to examine the results for the comment scores.

3.4 Results

3.4.1 Descriptive results

Before we test our hypotheses, we first examine participants' baseline tendencies on the online platform. Figure 3.4 shows the average probability of posting a like (Panel A) and dislike (Panel B) by norm congruency. This illustrates how expressions of (dis)approval differ between norm conditions, but not yet whether participants are more or less likely to express their opinion or deviate from their opinion. As can be seen in Panel A, the probability of posting a like decreases with norm incongruency. Overall, the participants are significantly less likely to post a like in the incongruent norm condition (43%) compared to the mixed (64%) ($z = 3.56$; $p < .001$) and congruent norm condition (70%) ($z = 4.65$; $p < .001$). If we split the results by congruency, we observe that participants are more likely to like congruent comments in the congruent norm condition (70%) compared to the mixed norm condition (53%) ($z = 3.09$; $p = .002$), and that they are more likely to like incongruent comments in the incongruent norm condition (43%) compared to the mixed norm condition (31%) ($z = 2.18$; $p = .030$). On the whole, participants are more likely to like congruent (62%) than incongruent comments (37%) ($z = 6.11$; $p < .001$).

In Panel B, we observe that the probability of posting a dislike on a page increases with norm incongruency. Compared to the congruent norm condition (27%), participants are more likely to post a dislike on a page in the mixed (50%) ($z = 4.14$; $p < .001$) and incongruent norm condition (55%) ($z = 4.88$; $p < .001$). If we split the results by comment congruency, we find that participants are significantly more likely to dislike incongruent comments in the incongruent norm condition (55%) compared to the mixed norm condition (41%) ($z = 2.42$; $p = .016$). Overall, participants are

more likely to dislike an incongruent comment on a page (48%) than a congruent comment (24%) ($z = 6.14$; $p < .001$). When we compare the average comment scores participants with a conservative and progressive opinion about the topic, we find that participants with a progressive opinion on average post substantially more progressive comments ($M = 5.88$; $SD = 1.98$) compared to participants with conservative opinion ($M = 3.14$; $SD = 1.58$) ($t = 5.04$; $p < .001$).

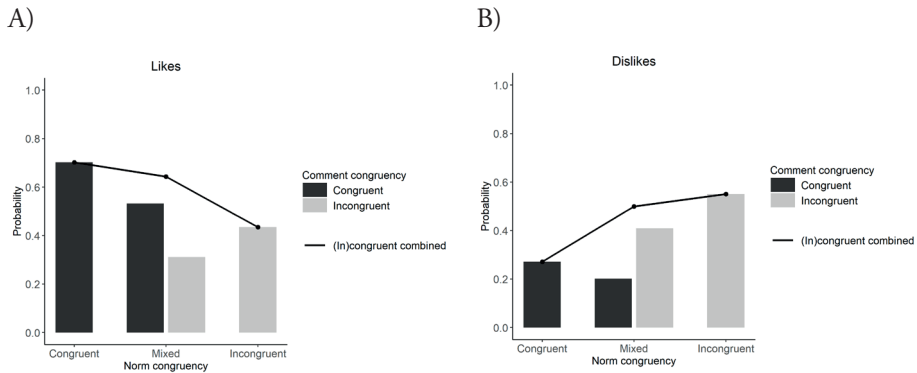


Figure 3.4: average probability of (a) liking and (b) disliking (in)congruent comments on a page by norm congruency. The line graph shows the average probability of posting a like or a dislike on a page. 450 discussions nested in 188 participants.

These results indicate that there is a strong convergence between personal opinions and expressed opinions on the discussion platform: participants are more likely to like congruent comments, and they are more likely to dislike incongruent comments. However, there are still many instances in which participants express opinions online that do not align with their personal opinions by liking incongruent comments and disliking congruent comments.

3.4.2 Expressing opinions

We now look at how the congruency of the online norm with personal opinions affects the probability of expressing an opinion online. Figure 3.5 (Panel A) shows that the predicted probability of expressing an opinion online using (dis)likes decreases steadily with increasing norm incongruency (see Appendix B.5 for the model). Specifically, we find that the probability decreases from 72% in the congruent norm condition (liking a congruent comment) to 55% in the mixed condition (liking a congruent comment or disliking an incongruent comment) and 52% in the incongruent norm condition (disliking an incongruent comment). The difference in the probability of expressing

an opinion using (dis)likes between the congruent and the mixed ($z = 2.48$; $p = .013$) and the incongruent norm condition ($z = 3.12$; $p = .002$) is significant. The difference between the mixed and the incongruent norm condition, on the other hand, is not significant. Hence, in line with Hypothesis 1a, participants are significantly more likely to express a personal opinion online using (dis)likes in the congruent norm condition compared to the mixed and incongruent norm condition.^{8,9}

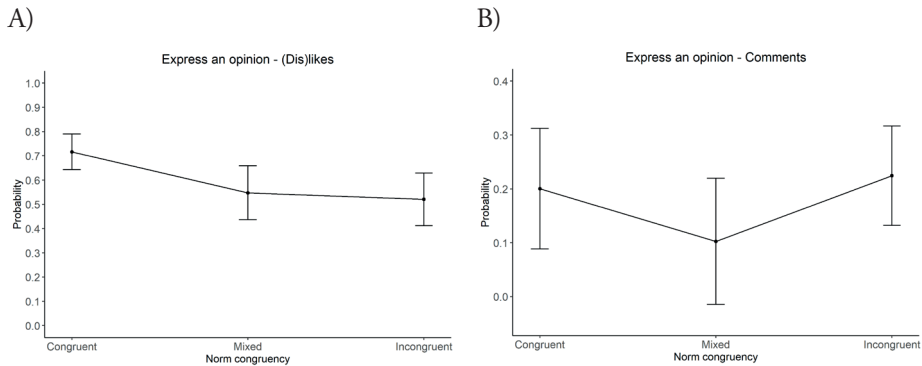


Figure 3.5: (a) the predicted probability of expressing a personal opinion through (dis)likes by norm congruency and (b) the predicted probability of posting a comment on a page by norm congruency. 450 discussions nested in 188 participants.

Figure 3.5 (Panel B) shows the predicted probability of expressing a personal opinion by posting a comment on a page (see Appendix B.5 for the model). The probability is lowest in the mixed norm condition (10%), which is substantially lower compared to both the congruent (20%) and the incongruent norm condition (22%). However, in contrast to Hypothesis 1b, the differences between the norm conditions are not significant.¹⁰

8 In Appendix B.6, we show the results of Figure 5a per topic. Apart from some minor differences, the results are similar for each topic.

9 By comparing the probability to which participants with a conservative and progressive opinion (dis)like comments in each norm condition, we assume that the kind of comments that both groups like in each norm condition is similar (i.e., equally conservative or progressive). In Appendix B.7, we test this assumption and show that this is the case.

10 Due to the already low probability of posting a comment for all topics combined, we do not show the results of Figure 3.5b per topic in the appendix.

3.4.3 Expressing deviating opinions

We now examine how the congruency of the online norm with the personal opinion affects the probability of expressing an opinion online that deviates from the personal opinion. Figure 3.6 (Panel A) shows the predicted probability of deviating from a personal opinion using (dis)likes by norm congruency (see Appendix B.8 for the model). The predicted probability to do so increases steadily with norm incongruency. Specifically, we find that probability increases from 28% in the congruent norm condition (disliking a congruent comment), to 36% in the mixed norm condition (liking an incongruent comment or disliking a congruent comment) and 45% in the incongruent norm condition (liking an incongruent comment). In line with Hypothesis 2a, the difference between the congruent and the incongruent norm condition is significant ($z = 2.75$; $p = 0.006$), although we do not find a significant difference between the congruent and mixed norm condition. Hypothesis 2a is thus partially supported.¹¹

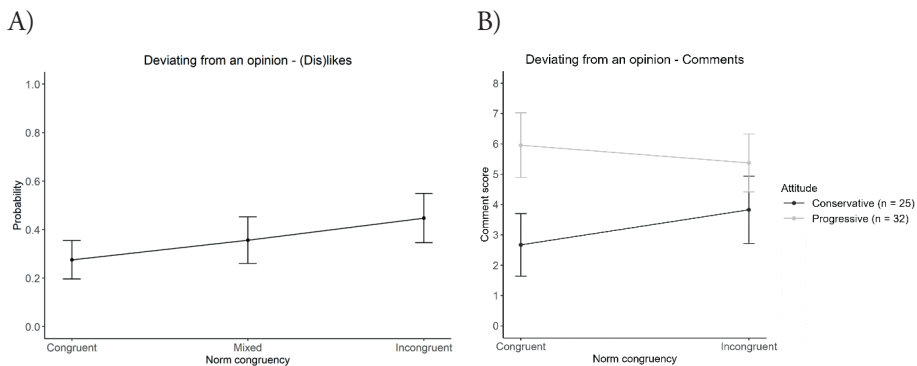


Figure 3.6: (a) the predicted probability of deviating from a personal opinion through (dis)likes by norm congruency. 450 discussions nested in 188 participants. (b) the predicted progressiveness of a comment by norm congruency. 57 comments nested in 29 participants. Separate lines for participants with a conservative opinion (black) and participants with a progressive opinion (grey).

Figure 3.6 (Panel B) shows the predicted comment score by norm congruency for participants with a conservative and progressive opinion about the topic (see Appendix B.10 for the model). Participants with a progressive opinion post slightly more progressive comments in the congruent progressive norm condition (5.96) compared to the incongruent conservative norm condition (5.37), but this difference is not significant. Participants with a conservative personal opinion about the topic, on the other hand, post more progressive comments in the incongruent progressive norm condition (3.83)

¹¹ In Appendix B.9, we show the results of Figure 3.6a per topic. Apart from some minor differences, the results are similar for each topic.

compared to the congruent conservative norm condition (2.67), but this difference is also not significant. Hence, we find no support for Hypothesis H2b, that participants with a conservative and progressive opinion post more progressive and conservative comments, respectively, in the incongruent norm condition than in the congruent norm condition.¹² This is possibly due to the low number of comments ($N_{\text{comments}} = 57$).

3.4.4 Ethnic minority and majority norms

In this section, we examine whether second-generation Moroccan and Turkish Dutch are more likely to strategically adjust their behavior to a conservative norm (that is widely shared in their ethno-religious community) or a progressive norm (that is widely shared in society). We examine this by comparing the degree to which participants with a conservative and a progressive opinion adjust their online expressions to the online norm. First, with regards to baseline tendencies, we find that the convergence between personal opinions and opinions that are expressed online is stronger for participants with a progressive opinion about the topic compared to participants with a conservative opinion (see Appendix B.11). Participants with a conservative opinion are approximately as likely to like congruent comments in the congruent norm condition (60%), as they are to like incongruent comments in the incongruent norm condition (55%). For participants with a progressive opinion, on the other hand, this difference is significant (85% versus 31%, $z = 6.21$; $p < .001$). Similarly, participants with a conservative opinion are as likely to dislike congruent comments in the congruent norm condition (34%) as they are to dislike incongruent comments in the incongruent norm condition (37%). Again, for participants with a progressive opinion, we do find a significant difference (16% versus 75%, $z = 6.66$; $p < .001$). Looking at the baseline tendencies, it thus seems as if the congruency between personal opinions and online expressions is stronger for participants with progressive opinions about the topic than for participants with a conservative opinion.

When we look at the influence of norm congruency on the probability of expressing a personal opinion online using (dis)likes, we find that participants with a conservative and progressive opinion about the topic follow a somewhat different trend (see Appendix B.5 for the model)¹³. Compared to the congruent norm condition

12 Due to the low number of comments ($N_{\text{comments}} = 57$), we do not show the results of Figure 6b per topic in the appendix.

13 In Appendix B.12, we examine whether there are compositional differences between participants with a conservative and a progressive personal opinion (sex, education and issue importance) and whether these differences can explain the differences that we find between (i) norm conditions and (ii) participants with a conservative or progressive personal opinion. We find minor compositional differences between groups, but these differences do not explain the results that we find.

(86%), participants with a progressive opinion are significantly less likely to express their personal opinion in the mixed norm condition (61%) ($z = 2.64$; $p = .008$), but not the incongruent norm condition (71%). For participants with a conservative opinion, the probability decreases steadily with norm incongruency, but only the difference between the congruent (64%) and incongruent norm condition (34%) is significant ($z = 3.51$; $p < .001$). Compared to participants with a conservative opinion, participants with a progressive opinion are substantially more likely to express an opinion online in both the congruent ($z = 2.65$; $p = .008$) and incongruent norm condition ($z = 4.21$; $p < .001$).¹⁴ For the probability of posting a comment, we do not find differences between participants with a conservative and a progressive opinion about the topic.¹⁵ To summarize, participants with a progressive opinion are generally more likely to express their opinion using (dis)likes than participants with a conservative opinion. Furthermore, the degree to which participants with a conservative opinion express their opinion is significantly lower in the incongruent setting compared to the congruent setting, which is not the case for participants with a progressive opinion.

When we look at the probability of deviating from a personal opinion using (dis)likes, we find that the probability hereof increases with norm incongruency for both participants with a conservative and progressive opinion about the topic (see Appendix B.8 for the model). However, we only find a significant difference for participants with a conservative opinion: compared to the congruent norm condition (33%), this group is significantly more likely to deviate from their opinion in the incongruent norm condition (54%) ($z = 2.34$; $p = .019$). In all norm conditions, participants with a conservative opinion tend to deviate from their personal opinion more than participants with a progressive opinion, but this difference is only significant in the incongruent norm condition ($z = 2.02$; $p = .043$). To summarize, we find that participants with a conservative opinion are more likely to deviate from their opinion than participants with a progressive opinion, but only significantly so in the incongruent norm condition. Furthermore, relative to the congruent norm condition, the degree to which participants with a conservative opinion deviate from their opinion is higher in the incongruent norm condition, whereas for participants with a progressive opinion we do not find any significant differences.¹⁶

14 In Appendix B.13 we show the results for the topics combined, and per topic separately. Apart from some minor differences, the results are similar for each topic.

15 In Appendix B.13 we show the results for the topics combined. Due to the already low probability of posting a comment for all topics combined, we do not show the results for each topic separately in the appendix.

16 In Appendix B.14 we show the results for the topics combined, and per topic separately. Apart from some minor differences, the results are similar for each topic.

3.5 Discussion and conclusion

While social media play an important role in our perception of public opinion, and in the cultural adaptation and acculturation of ethnic minority groups, it is unclear how the opinions that ethnic minorities express online relate to their offline opinions. By designing an online discussion platform that closely resembles actual social media platforms, this study uses an innovative design to study this issue among second-generation Moroccan and Turkish Dutch citizens. The results of this study show that the opinions that participants hold generally converge with the opinions they express online. However, the participants are overall less likely to express personal opinion, and more likely to deviate from their personal opinion, in an online environment that is (partially) incongruent with their own personal opinions, compared to a congruent environment. Further analyses unveil that the convergence between personal opinions and online expressions is stronger for participants with a progressive opinion about the topic compared to participants with a conservative opinion. Compared to participants with a progressive opinion, participants with a conservative opinion are less likely to express their opinion (in both congruent and incongruent settings), and more likely to deviate from their opinion (in incongruent settings). Furthermore, for participants with a conservative opinion the discrepancy between personal opinions and online expressions is larger in incongruent settings compared to congruent settings, while for participants with a progressive opinion we do not find this difference.

These findings have a number of implications. First, with regards to public opinion research, our findings suggest that the online opinion climate is likely not an accurate reflection of the opinions that individuals hold. When individuals encounter online discussions that do not align with their personal opinions, they strategically adjust their behavior to align more with that of others. In contrast to popular belief (Anstead & O'Loughlin, 2015), this result suggests that we cannot gauge the opinion of the general population using the opinions that individuals express on social media. As described by the Spiral of Silence (Noelle-Neumann, 1974), even when online discussions are homogenous and extreme, the opinions of individuals may still be diverse.

Second, with regards to the integration of (Muslim) ethnic minorities in Western European societies, our findings stress that this process is very context-dependent: the degree to which they adjust their behavior to the progressive values of the ethnic majority depends on the degree to which others in their direct environment also publicly endorse such values. In other words, the more conservative views towards sexual liberalization of second-generation Moroccan and Turkish Dutch citizens in survey research (Huijnk & Andriessen, 2016; Kalmijn & Kraaykamp, 2018) are not necessarily the values that they express in public. Thus, by focusing so strongly on the differences in personal opinions of ethnic groups, previous research limits our understanding of how ethnic diversity

affects the cohesion of multicultural societies in practice. To advance our knowledge on this process, future research could put more emphasis on the process through which ethnic minorities perceive and integrate ethnic minority and ethnic majority culture in their daily lives (see Ward, 2013; West et al., 2017).

Third, the different results for participants with a conservative and progressive opinion suggest that online norms do not exist in isolation, but rather interact with offline norms. Specifically, we find that the online norm has a stronger effect on online behavior when it resonates with the societal norm, in this case that of sexual liberalization in the Netherlands. Previous research has found that societal norms influences the motivations to use social media (e.g. Kim, Sohn, & Choi, 2011), or the disclosure of personal information (e.g. Rui & Stefanone, 2013). We contribute hereto by arguing that, together with online norms, offline norms could also influence the opinions that individuals express in online environments.

How can our results inform policy and practice that aim to reduce negative intergroup relationships between ethnic groups? First, even though the cultural differences between ethnic groups do not necessarily translate into behavioral differences, the perceived irreconcilability of opposing values may nonetheless drive salient boundaries in society (Pasek et al., 2022). Correcting these misperceptions through public information campaigns may be effective in reducing societal divides. For example, some studies have found that correcting for misperceptions of others' extremity (first-order beliefs) reduces individuals' own extremity (Ahler, 2014; Ahler & Sood, 2018). Moreover, correcting for incorrect perceptions of how 'others' see 'you' (second-order beliefs) also reduces intergroup hostility (Kteily, Hodson, & Bruneau, 2016; Lees & Cikara, 2020).

Second, promoting the online expression of minority opinions may be a fruitful avenue through which individuals may acquire a more accurate perception of other groups and public opinion. For example, previous studies find that minority voices may more likely to be expressed in civil discussions in which individuals do not perceive a risk to be personally attacked (Han & Brazeal, 2015; Neubaum & Krämer, 2018; Pang et al., 2016). Hence, one way in which social media platforms can promote the expression of minority voices is by providing ample opportunity to report uncivil behavior by other users.

This study has a number of limitations: first, we interpret our findings in terms of a discrepancy between personal opinions and expressed opinions. However, it could also be that our results do not show a discrepancy between personal opinions and behavior, but rather a change in personal opinions (see Lee et al., 2022). However, previous studies have suggested that personal opinions that are easily accessible in memory are less prone to be influenced than personal opinions that are not (Blankenship et al., 2015; Hodges & Wilson, 1993). Given the prominence of sexual conservatism in Islamic teachings

(Dialmy, 2010), we argue that personal opinions surrounding sexual liberalization are unlikely to change for this group in response to the brief exposure to the online environment of this study. Therefore, we believe that the effects that we find are a good indication of the relationship between personal opinions and expressed expressions.¹⁷

Second, due to our focus on second-generation Moroccan and Turkish Dutch citizens, we cannot tell whether these effects are specific to this ethnic minority group or could also be observed among the ethnic majority population. Moroccan and Turkish culture is characterized by a high degree of collectivism, which means that the transgression of group norms is not tolerated to the same degree as in the more individualistic, Dutch culture (Stamkou et al., 2019). In addition to this, due to the high degree of hostility towards (Muslim) ethnic majority groups in Western Europe, Moroccan and Turkish Dutch citizens may feel that their culture is under threat, which in turn may increase their determination to maintain the ethno-religious culture in their community (Röder & Spierings, 2021; Spierings, 2015). Together, these arguments suggest that ingroup norms have a larger influence on the behavior of second-generation Moroccan and Turkish Dutch citizens compared to the ethnic majority Dutch population, but we cannot test this using this data.

Third, previous research has shown that online behavior may differ between social media platforms because of the affordances that they provide, such as anonymity, visibility and persistence (Evans, Pearce, Vitak, & Treem, 2017). As a result, the relationship between personal opinions and online expressions may differ between social media platforms based on the affordances that they provide. It is therefore difficult to establish to what extent the relationship between personal opinions and online expressions that we find here is due to the specific characteristics of our platform, or whether it could also be found elsewhere. Nonetheless, we decided to build our own discussion platform, rather than simulating a particular or representative social media, because social media platforms have a lot of characteristics that were not of interest to this particular study, such as sharing content, befriending or blocking other users and setting up a personal profile. By building our own discussion platform that focusses specifically on commenting and (dis)liking, we focus our data collection more specifically on the behaviors that are of interest to this study.

This study provides a number of avenues for future research: for example, future studies could examine the boundary conditions for the effects we find here. Previous studies have found that people are more likely to behave in line with the online norm when they find themselves among ingroup members, compared to when they are amongst outgroup members (Rains, Kenski, Coe, & Harwood, 2017; Sassenberg &

17 Asking the attitudes after the experiment could also be a solution to this issue. However, many individuals would strive to be consistent with the answers they gave just a couple of minutes earlier, which would reduce the validity of our results (Guadagno & Cialdini, 2010).

Postmes, 2002). Furthermore, as adhering to identity-relevant norms is considered important to earn ingroup respect (Pagliaro, Ellemers, & Barreto, 2011), it is likely that the relationship between personal opinions and expressed expressions is stronger for more general norms (e.g. opposition to stealing) that are not tied to a specific group identity.

To conclude, in current public and political debates, the cultural differences between progressive ethnic majority and conservative Muslim minority groups are often perceived as a potential threat to the cohesion of Western European societies. Our study suggests that this is not necessarily the case, as cultural differences do not necessarily translate into behavioral differences: in the presence of progressive ethnic majority norms, ethnic minorities may be less willing to express conservative personal opinions. Therefore, rather than inflating differences between ethnic groups by focusing on their cultural differences, future scholarly and political attention could emphasize that behavioral differences may in fact be much smaller.

Chapter 4

The influence of group membership on online expressions and polarization on a discussion platform: An experimental study¹

¹ A slightly different version of this chapter is published as Wuestenenk, N., Van Tubergen, F. and Stark, T.H. (2023). The influence of group membership on online expressions and polarization on a discussion platform: an experimental study. *New Media & Society*. Wuestenenk wrote the main part of the manuscript, built the online discussion platform, coordinated the data collection, and conducted the analysis. Stark and Van Tubergen contributed substantially to the manuscript. The authors jointly developed the idea and the design of the study. This chapter was presented at the Analytical Sociology Colloquium at the European University Institute in Florence, and at the ICS Forum Day 2022 in Groningen. The authors thank all audiences for their valuable questions and comments. The authors want to thank Naomi Ellemers for her help in developing the idea and the design of the study. The authors would also like to thank Hendrik Jan Meerveld and the other members of the HTS App Development Team of the Faculty of Social and Behavioral Sciences at Utrecht University for their help in building the website. The authors are also very grateful to Amina op de Weegh for her help in writing the discussions for the website, and to Koen Veldman and Marthe Blaak for coding the comments of all the (fictitious) users.

Abstract

Despite much attention for group polarization in online environments, little is known about how group membership affects online behavior. We designed an online platform where ethnic minority and majority users in the Netherlands participated in discussions about controversial topics (homosexuality and abortion). Participants were randomly assigned to either progressive, conservative, or mixed discussions on these topics, which were ostensibly held among ethnic minority or majority users. We find that when ethnic minority users are exposed to discussions among the ethnic majority (i.e., outgroup) with which they disagree, they are less likely to express their opinions and more likely to deviate from their personal opinions. Among ethnic majority users, we find the opposite: when confronted with a discussion among the ethnic minority with which they disagree, they are more likely to voice their opinion and less likely to deviate from their personal opinions. This shows that group membership can affect online polarization.

4.1 Introduction

At the turn of the millennium, the democratization of the internet was perceived by some to carry immense democratic potential. The internet was believed to promote an open exchange of ideas and opinions among people of different backgrounds, who may not be as likely to meet offline. Some argued that it was an instrument that could break down the boundaries that existed and persisted between groups in society (Papacharissi, 2002). Scientific evidence, however, paints a different image: rather than connecting different social groups, individuals mostly interact with similar others online, be it as a result of their personal preference or algorithmic biases of online platforms (Bakshy et al., 2015; Santos et al., 2021). This, in turn, leads to a greater difference in opinions between groups along political lines (*ideological polarization*) (Sunstein, 2018; Terren & Borge, 2021) and more hostile intergroup relations (*affective polarization*) (Törnberg, 2022). As a result, rather than bridging societal divides, the internet – and its associated technologies such as social media – are now popularly believed to amplify such cleavages (Haidt, 2022).

Despite these alarming findings, it remains unclear how online interactions with ingroup or outgroup members affect individuals' expression of their opinions, and consequently, the online ideological polarization that we observe between groups. Whereas many studies examine how the online opinion climate affects individuals' willingness to participate in online discussions (i.e. the Spiral of Silence) (e.g. Ordoñez & Nekmat, 2019; Wu & Atkin, 2018) or the content of their online expressions (e.g. Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020), how group membership affects this relationship remains unknown. This is a caveat in current research, given that individuals encounter both in- and outgroup members on social media (despite their ingroup bias) and attitudes within groups are heterogeneous. In the United States, for example, Democrats and Republicans frequently encounter (content by) members of the opposite party online (Eady, Nagler, Guess, Zilinsky, & Tucker, 2019; Shin, 2020), and the difference in attitudes between both groups are smaller than people generally think (Fernbach & Van Boven, 2022; Westfall, Van Boven, Chambers, & Judd, 2015). Still, it remains unclear whether interacting with ingroup members who hold similar or dissimilar views affects the online expression of own opinions differently than interacting with outgroup members who hold similar or dissimilar views.

By studying the role of group membership in online expressions of opinions, this study sheds new light on the mechanisms that may explain the degree of online ideological polarization that we observe between groups. Studies on offline behavior suggest that, in order to maintain the approval of their social group, individuals are more likely to conform to the behavior of ingroup members compared to outgroup

members, even when it does not align with their personal preferences (Barreto & Ellemers, 2000, 2003). Hence, if individuals are more likely to connect to ingroup than outgroup members, and they are also more likely to strategically conform to the behavior of ingroup than outgroup members, the observed differences in expressed opinions between online groups become larger over time. Furthermore, this would mean that the degree of ideological polarization that we observe between groups in online environments is most likely not an accurate reflection of the degree of ideological polarization in opinions that these groups actually hold.

We test this proposition using online discussions between ethno-religious groups in the Netherlands, focusing specifically on Muslim ethnic minority groups. Like political and racial groups in the United States, ethno-religious cleavages are ‘bright lines’ in contemporary Dutch society (Alba, 2005). People of Moroccan and Turkish descent are two of the largest ethnic minority groups in the Netherlands, whom, in contrast to the increasingly secular ethnic majority population, are predominantly Muslim (de Hart, van Houwelingen, & Huijnk, 2022; Huijnk, 2018). Relatedly, Turkish-Dutch and Moroccan-Dutch on average hold comparatively conservative cultural values compared to the ethnic majority Dutch population, for example with regards to sexual liberalization (Huijnk & Andriessen, 2016; Kalmijn & Kraaykamp, 2018). Due to these cultural differences, the Turkish and Moroccan ethnic minority is perceived by part of the ethnic majority Dutch population to threaten the liberal Dutch culture, which aggravates interethnic relations (González, Verkuyten, Weesie, & Poppe, 2008; Savelkoul, Scheepers, Tolsma, & Hagendoorn, 2011).

We designed an online discussion platform where Turkish-Dutch and Moroccan-Dutch (ethnic minority) and ethnic majority Dutch were invited to participate in a discussion on homosexuality and abortion. In the experiment, participants were randomly assigned to conservative, mixed, or progressive online discussions, which took place among either Turkish-Dutch and Moroccan-Dutch users or ethnic majority Dutch users. Based on the attitudes and ethnicity that the participants indicated before entering the online discussion platform, these discussions were incongruent, mixed or congruent with participants’ own views and held among ethnic ingroup or outgroup members. We study how these experimental conditions influence the relationship between individuals’ personal opinions and their online expressed opinions through the likes and dislikes that participants post.

4.2 Theory and hypotheses

4.2.1 Opinion climate

Studies find that individuals conform their online expressions to that of others in online environments. These studies generally analyze one of two relationships: First, studies in the tradition of the Spiral of Silence theory (Noelle-Neumann, 1974) find that individuals are less willing to express their personal opinion when the opinion climate is incongruent with their own views (e.g. Ordoñez & Nekmat, 2019; Wu & Atkin, 2018). Second, other studies find that individuals adjust the content of their online expression to align with that of others (e.g. Álvarez-Benjumea & Winter, 2018; Munger, 2017; Siegel & Badaan, 2020), even to the extent that it no longer reflects their own beliefs (McDevitt et al., 2003). Although these research lines are empirically distinct, the underlying mechanism is the same: individuals strive for social acceptance, even in online settings, and an important way to achieve this is through aligning their behavior (opinion expression) with that of others (Cialdini & Goldstein, 2004). They can do this either by only expressing their opinion when this aligns with that of others, or voicing an opinion that aligns with that of others, even when this does not align with their own personal opinion.

In online discussions, users can employ many opinion expression (avoidance) strategies, such as unfriending other users, hiding posts they do not agree with, or sharing posts they do endorse (Wu, Xu, & Atkin, 2020). In this paper, however, we focus on one specific strategy, namely (dis)liking posts of other users. Together with commenting and sharing, (dis)liking is one of the three most common ways to express opinions on social media platforms. Compared to commenting and sharing, (dis)liking requires relatively little cognitive effort as it can be completed in a single click (Kim & Yang, 2017). Nonetheless, users actively reflect on this kind of ‘click-speech’ in online discussions and engage in (dis)liking for a large variety of reasons, one of which is expressing support for the content they encounter online² (Hayes et al., 2016). In doing so, individuals not only consider the specific content they (dis)like, but also the broader opinion climate of the discussion in which the content is embedded. For example, individuals are less likely to express their views using (dis)likes when online discussions are uncivil or when they hold the minority opinion (Ordoñez & Nekmat, 2019; Pang et al., 2016; Wu, Oeldorf-Hirsch, et al., 2020). However, the extent to which these (dis)likes accurately reflect the personal opinions of individuals is not examined in these studies.

2 In Appendix C.1, we show the probability that individuals (dis)like comments that do (not) align with their opinion. The appendix shows that individuals are more likely to like content that aligns with their personal opinion, and dislike content that does not align with their personal opinion. We believe that it is therefore safe to say that the (dis)likes in this study are an expression of support for online content.

In this study, we examine how the congruency of the online opinion climate with participants' personal opinions affects the (dis)likes they post in two ways. First, we study the probability that participants express their personal opinion on the discussion platform using (dis)likes. Participants can do this by liking comments that align with their personal opinions (congruent comments) and disliking comments that do not align with their personal opinions (incongruent comments). Second, we study the probability that participants deviate from their personal opinion using (dis)likes, that is, express opinions that *do not* align with their personal opinions. Participants can do this by disliking congruent comments or liking incongruent comments. We expect the following:

H1: Participants are less likely to express their personal opinion using (dis)likes in a mixed or incongruent online opinion climate than in a congruent online opinion climate (*expression effect*)

H2: Participants are more likely deviate from their personal opinion using (dis)likes in a mixed or incongruent online opinion climate than in a congruent online opinion climate (*deviation effect*)

4.2.2 Intergroup dynamics

The social identity approach posits that individuals derive an important part of their identity from the social groups to which they feel they belong (Tajfel & Turner, 1979; Turner et al., 1987). Individuals strive for a positive social identity, which they derive both from the status of the group that they identify with, and their status within that group. An important way to acquire this positive social identity is through behavior that is visible to others (Pagliaro et al., 2011). Individuals that behave in accordance with the group norm, that is, display behavior that is prescribed or common for the group (Deutsch & Gerard, 1955), are evaluated more positively than deviant group members (Marques, Abrams, Paez, & Martinez-Taboada, 1998; Travaglino, Abrams, Randsley de Moura, Marques, & Pinto, 2014). Individuals are therefore more likely to behave in accordance with a norm when this is promoted by ingroup members, even when the behavior does not align with the personal opinion of the individual (Barreto & Ellemers, 2000, 2003). When the norm is promoted by outgroup members, on the other hand, individuals do not have the same motivation to fulfil these social goals, which is why outgroup norms are less influential than ingroup norms in shaping individuals' behavior (Ellemers, Doosje, & Spears, 2004; Smith & Louis, 2008; Smith, Terry, & Hogg, 2007). These findings are not limited to offline settings. In fact, studies show that, compared to face-to-face offline settings, the influence of the ingroup norm is even stronger in visually anonymous online settings (Huang & Li, 2016; Spears, 2021).

Despite the strong theoretical and empirical basis to expect a substantial influence of group norms on online expressions, this is often overlooked in current research. Studies on the Spiral of Silence examine how so-called ‘reference groups’ affect individual’s willingness to express their opinion. However, these reference groups refer to the sources from which individuals perceive the dominant opinion climate (e.g. the government, friends or neighbors), not the group to which individuals express their personal opinions (Matthes et al., 2018). Research on group dynamics is also scarce in studies that examine the content of online expressions, although some studies have found that individuals are less likely to post prejudiced content when they are discouraged to do so by ingroup members than outgroup members (Munger, 2017; Siegel & Badaan, 2020). However, these observational studies do not have information on the personal opinions of the participants. They therefore cannot determine the influence of opinion congruency on online expressions, nor can they verify whether online expressions align with personal opinions.

To examine the role of in- and outgroup norms, participants in our experiment were randomly assigned to a discussion platform where discussions were held among Turkish-Dutch and Moroccan-Dutch users or ethnic majority Dutch users. Consequently, participants were exposed to either online discussions among ethnic ingroup members (ingroup condition) or to discussions among ethnic outgroup members (outgroup condition). Even though Turkish-Dutch and Moroccan-Dutch are two different ethnic groups, they share one important cultural property, namely their religion, as 86% of Turkish-Dutch and 94% of Moroccan-Dutch are Muslim. On top of this, 89% of the Turkish-Dutch Muslims and 96% of the Moroccan-Dutch Muslims consider their religion an important part of who they are (Huijnk, 2018). Therefore, given their shared religious identification, we consider the Turkish-Dutch and Moroccan-Dutch as one group in this study. Following previous research on the influence of ingroup norms versus outgroup norms on individual behavior, we hypothesize the following:

H3: The expression effect (H1) and deviation effect (H2) are stronger in the ingroup condition than in the outgroup condition (*ingroup effect*).

4.2.3 Group differences

Previous research suggests that the degree to which ingroup and outgroup norms influence individual behavior may vary between groups based on their cultural and social properties. With regards to cultural properties, cross-cultural psychology finds that ‘tight’ cultures are characterized by more pervasive and stricter social norms than ‘loose’ cultures (Gelfand et al., 2011; Triandis, 1989). Compared to the Dutch

culture, the Turkish and Moroccan cultures are relatively tight (Uz, 2015), which could mean that this group is more strongly influenced by the norm of their ingroup (versus outgroup) compared to ethnic majority Dutch participants.

However, an opposite prediction can be made based on the social properties of the groups. The social identity approach argues that degree to which individuals conform to in- and outgroup norms depends on (i) the degree to which they identify with the groups, and (ii) the relative status of the groups (Tajfel & Turner, 1979). Whereas ethnic majority Dutch identify only with the ethnic majority, many Turkish-Dutch and Moroccan-Dutch identify with both the ethnic minority and ethnic majority population (Huijnk & Andriessen, 2016). Additionally, because of the comparatively lower social status of the Moroccan-Dutch and Turkish-Dutch (Hagendoorn, 1995), members of these groups might be inclined to conform to the norm of the higher-status majority group to improve their social identity (Tajfel & Turner, 1979). This would suggest that the influence of ingroup norms (versus outgroup norms) is *weaker* for Moroccan-Dutch and Turkish-Dutch participants than for ethnic majority Dutch participants. Given these contrasting predictions, we will examine possible differences between ethnic groups exploratively.³

4.3 Data and methods

4.3.1 Data collection

Participants were recruited using a Facebook ad campaign that was online between 27 June 2022 and 26 July 2022⁴. In the ad, the Facebook users were informed that Utrecht University was conducting a study on how ethnic majority Dutch, Turkish-Dutch and Moroccan-Dutch thought about societal issues, and how they share their opinions with others. After providing informed consent, the participants were directed to a survey which asked their personal opinions regarding two issues (homosexuality and abortion) along with a number of demographic variables. After they completed the survey, the participants were directed to the online discussion forum. See Figure 4.1 for a summary of the data collection.

3 In a previous version of the manuscript, we hypothesized that the ingroup effect would be stronger for Turkish-Dutch and Moroccan-Dutch participants compared to ethnic majority Dutch participants based on their cultural properties. We thank the anonymous reviewers for pointing out that the opposite could be expected on the basis of the social properties of the groups. We therefore removed the hypothesis on group differences in our revision and explored differences between groups exploratively.

4 The study was approved by the Ethics Committee of the Faculty of Social and Behavioral Sciences of Utrecht (approval number 22-0268).

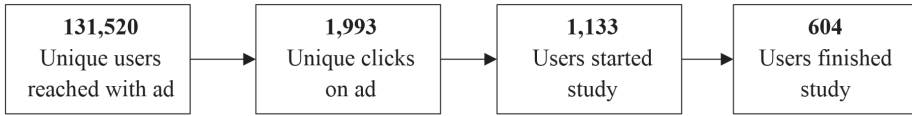


Figure 4.1: Summary of data collection

4.3.2 Online discussion forum

The discussion forum consisted of two pages, the first for a discussion on homosexuality and the second for a discussion on abortion⁵. On each page, the topic was introduced by a post of a fictitious user, in which they presented their personal opinion about an online article. This was followed by a discussion of six to eight comments by other fictitious users. Figure 4.2 presents an example of a post on the forum (left panel) and a small excerpt of the comments (right panel). Each participant was exposed to the exact same content on the discussion forum based on the experimental treatment that they were assigned to (see ‘experimental treatment’). The participants could not see what other participants had posted on the website, nor could they interact with other participants. The participants could respond to the content of the forum by (dis)liking comments and posts, and posting a comment themselves in reply to another comment or the post.⁶ The participant was not prompted to perform any of these actions, as this would interfere with the measurement of our dependent variable.

4.3.3 Experimental treatment

This experiment uses a 2 (ethnic composition) x 3 (online opinion climate) between-subjects experimental design (see Appendix C.3 for a flow diagram). For the ethnic composition treatment, participants were randomly assigned to a discussion forum where all other fictitious users were either Turkish-Dutch and Moroccan-Dutch or ethnic majority Dutch. For the online opinion climate treatment, participants were also randomly assigned to a discussion forum where both discussions represented either a *conservative*, *progressive* or a *mixed* online opinion climate set by the comments and likes left by fictitious users. For the ethnic majority Dutch forum, we extracted all

⁵ The code of the discussion platform is available open source at <https://github.com/nhwuestenenk/discussion-forum-2-public>

⁶ Due to the low number of valid comments that the participants have posted on the platform ($N = 143$), we cannot test all our hypotheses using this dependent variable. However, we present an analysis of the effect of opinion congruency on the progressiveness of the comments that participants have posted in Appendix C.2.

comments and usernames from www.nu.nl, a popular Dutch news site that allows users to respond to all news articles. For the Turkish-Dutch and Moroccan-Dutch forum, all comments and usernames were taken from the forum of www.marokko.nl, a large online forum with an active Moroccan-Dutch community (some Moroccan phrases were translated to Turkish)⁷. See Appendix C.4 for the translated discussions.

To create the different opinion climates, two research assistants who were blind to the experimental conditions independently coded all the comments by the fictitious users on a scale of 0 (very conservative) to 10 (very progressive) prior to the start of the experiment. The results showed high internal consistency (Krippendorff's $\alpha = .87$), so we took the mean of these two scores as the score for each comment. In the conservative opinion climate condition, the post and all comments expressed a conservative stance on the topic ($M = 1.52$; $SD = .78$), whereas in the progressive opinion climate the post and all comments were progressive ($M = 6.88$; $SD = 2.17$). In the mixed condition, the post was neutral (i.e., the fictitious user who posted the initial post was not sure what they thought about the issue) and 50% of the comments were conservative and 50% of the comments were progressive ($M = 4.38$; $SD = 2.78$).⁹ To underline the dominant norm, all comments in the conservative and progressive opinion climate condition received between 7-11 likes and 0-1 dislikes (with most receiving 0). In the mixed opinion climate condition, all comments received between 7-11 likes and dislikes.

7 Because the use of language and argumentation is very different between Turkish/Moroccan-Dutch and ethnic majority Dutch, we could not simply change the usernames of the fictitious users, but had to change the content of the posts and comments as well. For example, Turkish- and Moroccan-Dutch often include elements of Arabic and Turkish in their Dutch online writing, which native Dutch do not (Dorleijn & Nortier, 2008). Also, given the prominence of sexual conservatism in Islam (Dialmy, 2010; Kligerman, 2007), Moroccan- and Turkish-Dutch are very likely to refer to their religion when they discuss it, whereas native Dutch are not. For the discussions to bear any sense of realism, these differences must be reflected in the content of the online discussions.

8 The translated discussions can be found in Appendix C.4.

9 In both the ethnic minority and majority forum, the conservative, mixed and progressive opinion climates were significantly different at $p < .001$ (see Appendix C.5 for the distribution of comment scores). When we compared the opinion climates between the ethnic composition conditions, we found that the mean comment scores in the progressive opinion climate were significantly higher in the ethnic majority Dutch forum ($M = 8.67$; $SD = 1.25$) than in the Turkish-Dutch and Moroccan-Dutch forum ($M = 5.10$; $SD = 1.17$) ($t = 8.08$; $p < .001$). We found no significant difference between the other opinion climates. An additional analysis (not shown here) in which we control for the average comment score of the page showed very little difference to our main results.

A)

Abortus is moord
30 minuten geleden door **Kees567**

Ik walg echt van abortus. Mensen moeten eerst eens gaan nadenken voordat ze met elkaar het bed in duiken. Medische redenen en verkrachting vind ik ook de enige reden voor abortus. Dan is de kans op het nemen van een verkeerde beslissing minimaal.



Discussie over abortuswet laat weer op, 36 jaar na de invoering ervan
www.rtinieuws.nl

Vind ik leuk Vind ik niet leuk

Edith71 en 15 andere(n) vinden dit leuk
Nel_amersfoort en anita_de_vries vinden dit niet leuk

B)

Reacties

Roosje52 - 25 minuten geleden
hier kan ik het alleen maar mee eens zijn. Het kan toch niet zo zijn dat onschuldige levende mensen die niets verkeerd gedaan hebben, zomaar opgeruimd mogen worden zonder zich daartegen te kunnen verdedigen in de rechtbank.

Vind ik leuk Vind ik niet leuk Reageer

RobertJJ en 8 andere(n) vinden dit leuk
0 personen vinden dit niet leuk

Irma - 23 minuten geleden
Ik ben tegen abortus. Baas in eigen buik en je mag daarmee je eigen kind vermoorden begrijp ik echt niet

Vind ik leuk Vind ik niet leuk Reageer

Yannick_J en 6 andere(n) vinden dit leuk
0 personen vinden dit niet leuk

Nederlandseburger - 20 minuten geleden
Ja, en u maakt tevens ook een keuze op leven en dood voor een klein kindje dat zelf geen keuze daarin kan maken

Vind ik leuk Vind ik niet leuk Reageer

netje_nelemans en 10 andere(n) vinden dit leuk
Marja_vind dit niet leuk

Figure 4.2: Impression of a forum page (in Dutch). A post on abortion in (Panel A) and an excerpt of the comments displayed below the post (Panel B). See Appendix C.4 for the translated discussions.

4.3.4 Selections

Six hundred and four participants completed the study. Each participant completed two forum pages on the discussion forum, meaning that the total number of observations was 1,208 before selections. After the study, participants completed attention and manipulation checks. We excluded 33 participants who did not correctly identify the topics that were discussed on the forum, and those who did not correctly indicate the online opinion climate and ethnic composition of the forum they were assigned to¹⁰. After this, we excluded 183 observations by 143 participants with moderate personal opinions about a topic that was discussed in the forum (see the section ‘measures’ for further explanation of the opinion measure). This was because we could not distinguish between a congruent and an incongruent opinion climate for moderate participants. Lastly, we excluded 1 observation that completed the discussion on a

¹⁰ We excluded participants who indicated that most or all fictitious users on the forum belonged to the wrong ethnic group (e.g., ethnic majority Dutch when they actually were Turkish-Dutch and Moroccan-Dutch).

particular topic but had missing values for the associated personal opinion. After these selections, the total sample contained 531 participants with a total of 958 observations.

Turkish-Dutch and Moroccan-Dutch participants were significantly younger, more likely to be female and more likely to be conservative than ethnic majority Dutch participants (see Table 4.1). To account for these compositional differences, we control for these variables in the analyses in which we compare the effects between ethnic majority Dutch and Moroccan-Dutch and Turkish-Dutch participants.¹¹

Table 4.1: Descriptive statistics of the sample.

	Ethnic majority Dutch ($n_{\text{participants}} = 280$)		Turkish/Moroccan-Dutch ($n_{\text{participants}} = 251$)		Difference
	%/M	SD	%/M	SD	
Progressive attitude	92%	-	63%	-	$z = 10.97; p < .001$
Female	53%	-	72%	-	$z = 6.18; p < .001$
Education	4.75	1.20	4.78	1.14	$t = -.36; p = .72$
Age	31.17	14.79	26.19	8.76	$t = 6.17; p < .001$

4.3.5 Measures

This study focusses on two outcomes, namely *likes* and *dislikes*. We operationalize these measures as a dichotomous variable (0 = no (dis)like on a page and 1 = one or more (dis)likes on a page). The average probability that participants post one or more likes on a page (55%) is significantly higher than the probability that they post one or more dislikes (47%) ($z = 3.25; p = .001$).

We examine how these outcomes are influenced by (the combination of) *opinion congruency* and *ethnic in- and outgroup condition*. We measure opinion congruency by comparing the personal opinion of the participants and the opinion climate that they are assigned to. To measure personal opinions, participants indicated both for homosexuality and abortion whether they thought it was wrong on a scale of 0 (always wrong) to 10 (never wrong) in the survey prior to the experiment. We only included conservative (score 0-3, $n_{\text{observations}} = 205$) and progressive observations (score 7-10, $n_{\text{observations}} = 753$). In the experiment, the participants were then randomly assigned

¹¹ In preliminary analyses (not shown here), we also found compositional differences between the congruent, mixed and incongruent opinion climate. As the majority of participants in this study are progressive, the incongruent opinion climate was more likely to be the conservative environment, and the congruent opinion climate the progressive environment. Additional analyses (not shown here) indicated that controlling for the opinion climate (conservative, mixed and progressive) did not change our results.

to a *conservative* ($n_{\text{observations}} = 331$), *mixed* ($n_{\text{observations}} = 331$) or *progressive* opinion climate ($n_{\text{observations}} = 296$). Based on their personal opinion, this opinion climate is then congruent ($n_{\text{observations}} = 298$), partially congruent (the mixed condition; $n_{\text{observations}} = 331$) or incongruent ($n_{\text{observations}} = 329$) with their opinion.

To study the ingroup effect, we compare the ethnicity of the participant and the group condition that they were assigned to. In the survey prior to the experiment, the participants indicated their country of birth and the country of birth of their parents. If the participant or at least one of the parents was born in Turkey or Morocco, the participant belonged to the combined Turkish-Dutch ($n_{\text{observations}} = 195$) and Moroccan-Dutch ($n_{\text{observations}} = 238$) ethnic minority group. If both the participant and the parents were born in the Netherlands, we consider the participant ethnic majority Dutch ($n_{\text{observations}} = 525$). In the experiment, the participants were randomly assigned to a Turkish-Dutch and Moroccan-Dutch ethnic minority forum ($n_{\text{observations}} = 468$) or an ethnic majority Dutch forum ($n_{\text{observations}} = 490$). Based on their own ethnicity, participants were exposed to either ethnic outgroup ($n_{\text{observations}} = 475$) or ingroup members ($n_{\text{observations}} = 483$).

4.3.6 Analytical strategy

In the experiment, participants can express their personal opinion by liking congruent comments in the congruent and mixed opinion climate, and by disliking incongruent comments in the mixed and incongruent opinion climate. Alternatively, they can deviate from their personal opinion by disliking congruent comments in the congruent and mixed opinion climate, and by liking incongruent comments in the mixed and incongruent opinion climates. Because each participant completes two forum pages, the observations are not independent, which violates a key assumption of logistic regression. Therefore, we use a multilevel logistic regression model account for the correlation of observations. This model includes residual components on the level of the forum page (level 1, fixed at $\pi^2/3$) and the participant (level 2) (Hox, Moerbeek, & van de Schoot, 2017). The level-2 variance captures the variability in the outcome variable across participants. In our analysis, we include both predictors that may differ between forum pages for a participant (level-1 predictors: opinion congruency) and that do not differ between forum pages, only between participants (level-2 predictors: ethnicity, ingroup/outgroup and demographic variables). To ease the interpretation of the results, we compared the predicted probability that participants express their personal opinion and deviate from their personal opinion.

4.4 Results

4.4.1 Opinion climate

Figure 4.3 shows the predicted probability that participants express their personal opinion (Panel A) and deviate from their personal opinion (Panel B) using (dis)likes by opinion congruency (see Model 1 in Appendix C.6 and C.7 for the regression results).¹² In Hypothesis 1, we expect that participants are less likely to express their personal opinion using (dis)likes in a mixed or incongruent online opinion climate than in a congruent online opinion climate. In contrast to this expectation, we find no significant differences between the three opinion climates. In line with Hypothesis 2, however, we find that participants are significantly more likely to deviate from their opinion using (dis)likes in the mixed (+11 percentage points (hereafter *p.p.*); $p = .002$) and incongruent opinion climate (+12 *p.p.*; $p < .001$) compared to the congruent opinion climate.

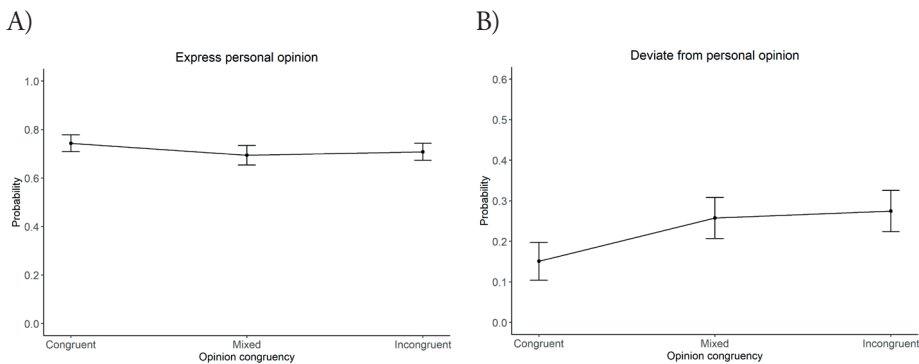


Figure 4.3: predicted probability that participants (a) express their personal opinion and (b) deviate from their personal opinion using (dis)likes by opinion congruency. 958 discussions nested in 531 participants.

4.4.2 Intergroup dynamics

Figure 4.4 shows the results for expressing personal opinions (Panel A) and deviating from personal opinions (Panel B) separately for the ingroup and outgroup condition (see Model 2 in Appendix C.6 and C.7 for the regression results). In Hypothesis 3a, we expected that the negative effect of opinion incongruency on expressing personal opinions is stronger in the ingroup than in the outgroup condition. We find that participants in the ingroup condition are significantly less likely to express their

¹² We show the results for likes and dislikes separately in Appendix C.9 (expressing opinion) and Appendix I C.10 (deviating from opinion).

personal opinion in the mixed ($-9 p.p.$; $p = .045$) and incongruent opinion climate ($-8 p.p.$; $p = .036$) compared to the congruent opinion climate. For the outgroup condition we find no significant differences between the opinion climates. Even though the effect of opinion incongruency is significantly different from zero in the ingroup condition, but not the outgroup condition, the difference between the two conditions is not significant. We thus find no support for Hypothesis 3a.

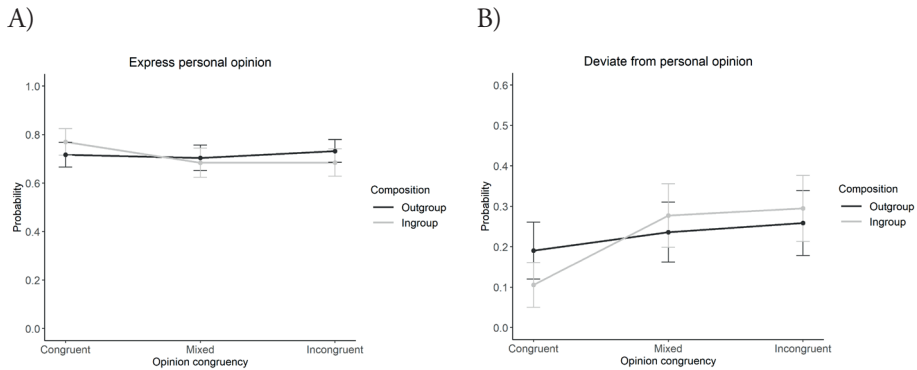


Figure 4.4: predicted probability that participants (a) express their personal opinion and (b) deviate from their personal opinion using (dis)likes in the ingroup (grey line) and outgroup (black line) condition. 958 discussions nested in 531 participants.

We find similar results for the probability that participants deviate from their personal opinion (Panel B): participants assigned to the ingroup condition are significantly more likely to deviate from their personal opinion in the mixed ($+17 p.p.$; $p < .001$) and incongruent opinion climate ($+19 p.p.$; $p < .001$) compared to the congruent opinion climate. For the outgroup condition, on the other hand, we find no significant differences between the opinion climates. Still, when we compare the effects of opinion congruency between the ingroup and outgroup condition, we find no significant differences between the two groups of participants. We therefore also find no support for Hypothesis 3b, in which we expect that the positive effect of opinion incongruency on deviating from a personal opinion is stronger in the ingroup condition than in the outgroup condition.

4.4.3 Group differences

Figure 4.5 shows the results for expressing personal opinions for participants assigned to the ingroup (Panel A) and outgroup condition (Panel B) for ethnic majority Dutch and ethnic minority Turkish-Dutch and Moroccan-Dutch participants separately

(see Model 3 in Appendix C.6 and C.7 for the regression results). For ethnic majority Dutch participants, we find contrasting effects for opinion congruency between the ingroup and outgroup condition. In the ingroup condition, ethnic majority Dutch are significantly *less* likely to voice their opinion in the incongruent than the congruent opinion climate ($-22 p.p.$; $p = .002$) (see Panel A). In the outgroup condition, on the other hand, ethnic majority Dutch are significantly *more* likely to express their opinion in the incongruent versus congruent opinion climate ($+22 p.p.$; $p = .004$) (see Panel B). Hence, for this group, the effect of the incongruent opinion climate (compared to the congruent opinion climate) is more negative in the ingroup condition compared to the outgroup condition ($-44 p.p.$; $p < .001$).

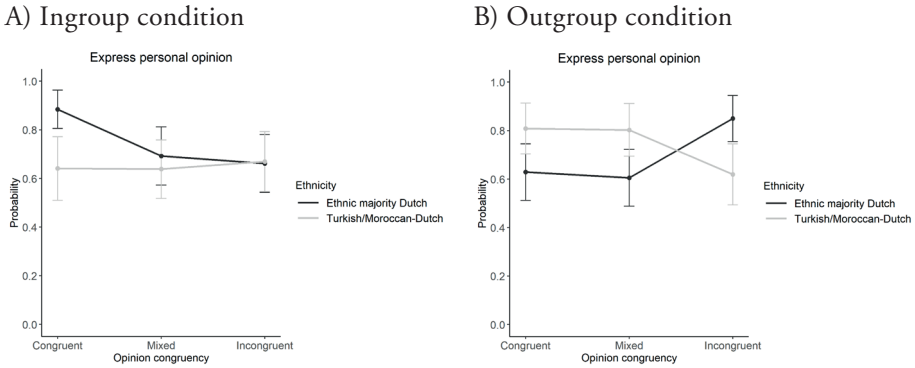


Figure 4.5: predicted probability that participants express their personal opinion using (dis)likes in the (a) ingroup and (b) outgroup condition. Separate results for ethnic majority Dutch (black line) and Turkish-Dutch and Moroccan-Dutch (grey line) participants. 958 discussions nested in 531 participants.

For Turkish-Dutch and Moroccan-Dutch participants, we find rather different results: in the ingroup condition, we find no significant effect of opinion incongruency on the probability of expressing a personal opinion (see Panel A). In the outgroup condition, on the other hand, Turkish-Dutch and Moroccan-Dutch participants are significantly less likely to express their personal opinion in the incongruent opinion climate compared to the congruent opinion climate ($-19 p.p.$; $p = .022$) (see Panel B). However, the differences between the ingroup and outgroup condition are not statistically significant.

To summarize, whereas for ethnic majority Dutch, the effect of the incongruent opinion climate is significantly more negative in the ingroup than in the outgroup condition, we find no difference herein for Turkish-Dutch and Moroccan-Dutch. To be more precise, in the incongruent opinion climate, the effect of the ingroup

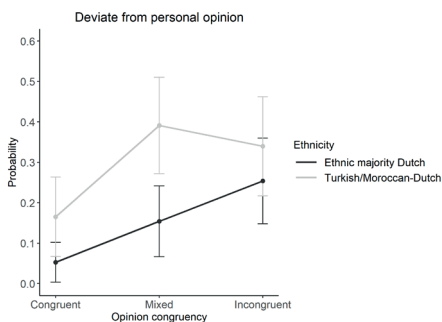
(versus outgroup) is significantly more negative for ethnic majority Dutch compared to Turkish-Dutch and Moroccan-Dutch participants ($-63 p.p.$; $p < .001$).

Figure 4.6 shows the results for deviating from personal opinions for participants assigned to the ingroup (Panel A) and outgroup condition (Panel B) for ethnic majority Dutch and Turkish-Dutch and Moroccan-Dutch participants separately. In the ingroup condition, ethnic majority Dutch are significantly more likely to deviate from their opinion in the incongruent compared to the congruent opinion climate ($+20 p.p.$; $p = .001$). In the outgroup condition, on the other hand, we find no significant differences between the opinion climates. Together, the effect of the incongruent opinion climate (compared to the congruent opinion climate) is significantly more positive in the ingroup than in the outgroup condition ($+29 p.p.$; $p = .002$).

For Turkish-Dutch and Moroccan-Dutch, the results of the ingroup and outgroup condition are largely similar. In both conditions, participants are significantly more likely to deviate from their opinion in the mixed and incongruent opinion climate compared to the congruent opinion climate. In contrast to ethnic majority Dutch, we therefore find no differences between the ingroup and outgroup condition for this group.

To summarize, for ethnic majority Dutch the effect of the incongruent opinion climate on deviating from a personal opinion is significantly more positive in the ingroup than in the outgroup condition. For Turkish-Dutch and Moroccan-Dutch, on the other hand, we find no difference herein. Hence, for the incongruent opinion climate, the effect of the ingroup condition (versus outgroup condition) on deviating from a personal opinion is significantly more positive for ethnic majority Dutch compared to Turkish-Dutch and Moroccan-Dutch participants ($+34 p.p.$; $p = .019$).

A) Ingroup condition



B) Outgroup condition

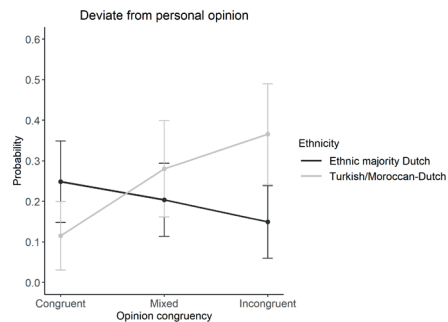


Figure 4.6: predicted probability that participants deviate from their personal opinion using (dis) likes in the (a) ingroup and (b) outgroup condition. Separate results for ethnic majority Dutch (black line) and Turkish-Dutch and Moroccan-Dutch (grey line) participants. 958 discussions nested in 531 participants.

4.5 Discussion and conclusion

Rather than promoting an open exchange between individuals from different social groups, scholars and opinion makers alike argue that the internet and social media drive social groups apart (Lorenz-Spreen et al., 2022). Despite this popular belief, we know very little about how group membership influences the expression of personal opinions online, and how this in turn could affect the degree of ideological polarization we perceive online. Therefore, we designed an online discussion platform where ethnic majority Dutch and Turkish-Dutch and Moroccan-Dutch participants were randomly assigned to *conservative*, *progressive* or *mixed* discussions about homosexuality and abortion among ethnic majority Dutch or Turkish-Dutch and Moroccan-Dutch users. We studied how the congruency of the online opinion climate with their personal opinions, and being in a discussion among ethnic ingroup or outgroup members, affected the degree to which they expressed and deviated from their personal opinions using (dis)likes.

In contrast to the Spiral of Silence theory (Noelle-Neumann, 1974), we found that participants were as likely to express their personal opinion using (dis)likes when this opinion constitutes a minority opinion in the online discussion compared to when it constitutes the majority opinion. However, we did find that when other users expressed opinions that were opposite to those of the participant (i.e. in mixed or incongruent opinion climates), the participants were more likely to deviate from their opinion by expressing support for views they did not agree with personally. Importantly, there are several ways in which users can express (deviating) opinions in online discussions (e.g. sharing, blocking, commenting), but since our analysis focusses only on (dis)likes, we cannot distinguish between the different opinion avoidance strategies that have been identified in previous research (Wu, Xu, et al., 2020). However, in contrast to the opinion avoidance perspective in general, our results showed that, overall, users actively engaged with comments on the discussion platform using (dis)likes, whether they agreed with the comment or not.

Based on the social identity approach (Tajfel & Turner, 1979; Turner et al., 1987), we argued that ingroup norms would be more influential in guiding online expression than outgroup norms. When we combined the results for all ethnic groups, we did not find such difference. However, when we split the results by ethnic minority and ethnic majority participants, we found that ingroup and outgroup norms affected the online expressions of these groups differently. Specifically, in contrast to expectations that may be derived from their 'tight' cultural norms, Turkish-Dutch and Moroccan-Dutch ethnic minority participants expressed (deviating) opinions to the same degree in discussions among ethnic ingroup and outgroup members. For ethnic majority Dutch participants, however, we found an interesting contrast: among other ethnic majority

Dutch users, they were less likely to voice their opinion and more likely to deviate from their opinion when their personal opinion is incongruent with the online opinion climate. However, when they are exposed to an online discussion platform dominated by Turkish-Dutch and Moroccan-Dutch outgroup users, we find the opposite: in such an environment, ethnic majority Dutch are *more likely* to express their opinion and *less likely* to deviate from their opinion when their personal opinion is incongruent with the online opinion climate.

What could explain this difference between the ethnic groups? Self-categorization theory argues that encountering a noticeable outgroup will increase the salience of a relevant social identity (Turner, 1985). Thus, observing a discussion between Dutch Muslims likely highlighted the ethnic majority Dutch's identity. In contrast, the distinction between the ethnic ingroup and outgroup was possibly less salient for many Turkish-Dutch and Moroccan-Dutch participants due to their dual ethnic identification (Huijnk & Andriessen, 2016). According to social identity theory, people strive for a positive social identity by exaggerating differences between their own and other groups during social comparison (Tajfel & Turner, 1986). Because this distinction between the ethnic ingroup and outgroup was likely very clear for ethnic majority Dutch participants, this could explain why they behaved in contrast to a norm set by their ethnic outgroup. In contrast, because many Moroccan-Dutch and Turkish-Dutch participants identified with both the ethnic majority and minority, it could be that the ethnic outgroup condition was not so much an outgroup condition in their perception, and as a result, their online expressions were equally influenced by both groups.

Our results have a number of implications. First, we show that ethnic majority Dutch and Turkish-Dutch and Moroccan-Dutch participants respond differently to online norms promoted by ethnic ingroup and outgroup members. Ignoring the role of group membership in studying online expressions and ideological polarization may therefore underestimate the complexity of opinion dynamics in online environments: it is not only important *what* others say, but also *who* communicates the message (Taylor, Muchnik, Kumar, & Aral, 2022). This finding has important implications for interventions that target other undesirable consequences of social media, such as the spread of misinformation and hate speech. Previous studies have analyzed how corrective messages may counter these phenomena (Álvarez-Benjumea & Winter, 2018; Lewandowsky & van der Linden, 2021), but not how the source of such messages may influence this. The effectiveness of such interventions may increase when the similarity in group membership (e.g., political affiliation, ethnicity) between the sender and receiver is incorporated in the strategy (Munger, 2017; Siegel & Badaan, 2020).

Second, our results suggest a pathway through which online environments may polarize over time that goes beyond the Spiral of Silence theory emphasized in previous research. We find that individuals conform to online norms not by staying silent but

by showing support for opinions of others, even when they do not endorse it privately (see also Centola et al., 2005). If sufficient people express deviating opinions, the dominant norm becomes increasingly dominant over time, which further increases the likelihood of expressing deviating opinions that endorse the dominant norm. Through this self-reinforcing mechanism, the degree of ideological polarization that we perceive increases over time, even when it does not necessarily reflect the degree of ideological polarization in the opinions that people hold. Akin to the concept of pluralistic ignorance (Katz & Allport, 1931), it is therefore likely that the degree of ideological polarization that we observe in online environments is to some extent ‘false’, that is, not representative of the actual opinion climate.

This study has a number of limitations. First, although we propose that our focus on online expressions can inform us on the processes that lead to the ideological polarization we perceive in online environments, this relationship remains somewhat speculative. Indeed, ideological polarization is a dynamic, macro-level consequence of the individual expressions we examine here, but we do not explicitly measure ideological polarization as such. To capture this process, future studies should longitudinally examine how individual expressions affects the online opinion climate, and vice versa. This could help identify under which conditions online ideological polarization arises or decreases because of the behavior we identify in this study. For example, previous studies have suggested that when a minority opinion attains a critical mass, individuals may no longer feel pressured to remain silent or express deviating opinions (Centola et al., 2018; Granovetter, 1978). How this unfolds in online environments remains unknown: like this study, most other studies do not examine the interrelation between micro-level behavior (online expressions) and macro-level consequences (ideological polarization) over time (Matthes, 2015).

Second, we study only how the congruency of the online opinion climate with the personal opinion of the participants affects online expressions. It should be noted, however, that other characteristics of the online discussion may interact with opinion congruency to affect individual behavior. For example, one study shows that individuals are less likely to express a minority opinion in an uncivil compared to a civil discussion (Ordoñez & Nekmat, 2019). Other studies suggest that individuals are more likely to speak out in response to another message if they found the source to be more credible (Leong & Ho, 2021). These characteristics may also be related to the intergroup dynamics that we study here, as outgroup members may be perceived as less civil and less credible than ingroup members (Clark & Maass, 1988; Leyens et al., 2000).

To conclude, despite much popular and scholarly attention for ideological polarization in online environments, what role group membership plays herein has been largely overlooked. Our results show that group dynamics can play a key role in online expressions, and consequently, ideological polarization. We therefore

propose to bring the 'group' back in group polarization research: future studies should acknowledge that (a) ideological differences occur both within and between groups, (b) individuals encounter both ingroup and outgroup members online and (c) individuals may adjust their online expressions to ingroup and outgroup norms differently.

Chapter 5

The interplay of misperceptions and willingness to share opinions in full classroom networks: The case of opinions about homosexuality¹

¹ Nick Wuestenenk is the first author of this chapter, but the chapter presents joint work with Tobias Stark, Frank van Tubergen, and Naomi Ellemers. A slightly different version of this chapter is currently under review at an international peer-reviewed journal. Wuestenenk wrote the main part of the manuscript and conducted the analyses. Stark, van Tubergen and Ellemers contributed substantially to the manuscript. The authors jointly developed the idea and design of the study. Wuestenenk and Stark coordinated the data collection. This chapter was presented at the Migration and Social Stratification Seminar in Utrecht. The authors would like to thank the audience for their valuable questions and comments. The authors would also like to thank Arnout van de Rijt for his comments on the idea and design of the study and on earlier versions of the manuscript. The authors are very grateful to Anniek Schlette for her incredible efforts in the data collection.

Abstract

Social norms influence homophobic behavior, yet these norms are often misperceived. We study the extent to which friendship ties and group memberships are related to misperceptions of opinions about homosexuality, and how these misperceptions are sustained in social networks through opinion sharing. We find that misperceptions lead individuals to be less willing to share their opinions with ethno-religious ingroup members, non-friends or with individuals whom they perceive to hold different opinions. Although differences observed in the context of this study are relatively small, in real life they may add up over time. These results offer scope for interventions that try to reduce norm misperceptions between groups - as a way to stimulate social change towards a more tolerant society.

5.1 Introduction

Opinions about homosexuality have become increasingly progressive in Western Europe in recent decades (Kuyper, Iedema, & Keuzenkamp, 2013; Smith, Son, & Kim, 2014). Yet, homoprejudiced behavior is still widespread in these societies. In the Netherlands for example, a country with relatively progressive opinions about homosexuality, lesbians and gay men fall victim to violence and intimidation approximately 50% more often than heterosexuals (Huijnk, 2022; Huijnk, Damen, & van Kampen, 2022). This victimization can have grave consequences for the well-being of its targets (D'augelli, 2002; Poteat et al., 2011), which calls for a deeper understanding of the mechanisms that may explain and counteract this type of behavior.

Previous research emphasizes the important role of social norms in explaining homoprejudiced behavior: studies find that individuals are more likely to engage in homoprejudiced behavior when they believe that others support it (Mange & Lepastourel, 2013). Social norms influence homoprejudiced behavior over and above the opinions that individuals hold themselves, even to the extent that comparatively tolerant individuals may also engage in homoprejudiced behavior when their social environment encourages such behavior (Denison et al., 2021; Poteat, Rivers, & Vecho, 2015). One reason why progressive individuals may engage in homoprejudiced behavior is to avoid being the target of harassment themselves (Buijs et al., 2011; Phoenix et al., 2003).

Even though social norms are important in explaining homoprejudiced behavior, there is strong evidence which suggests that individuals may not always perceive these norms accurately. Previous research has shown that individuals tend to overestimate the degree of prejudiced opinions among others (Tappin & McKay, 2017), for example towards ethnic minorities (Bell, Burkley, & Bock, 2019), but also gay men and lesbian women (Bowen & Bourgeois, 2001). These perceptions, even though they may not be accurate, act as an important basis for individual behaviour (Bursztyrn et al., 2020; Bursztyrn & Yang, 2022). For this reason, some suggest that addressing misperceptions about social norms may be an effective strategy to mitigate homoprejudiced behavior (Tankard & Paluck, 2016).

The properties of people's social network play an important role in how social norms are communicated between individuals, and thus potentially in how misperceptions persist (Blau & Schwartz, 1984; Centola, 2015). For example, as is described in the homophily principle, individuals are more likely to befriend and share their opinions with others who have similar characteristics such as opinions, gender and ethnicity (McPherson et al., 2001). Yet, the role of homophily is not examined in most previous research on misperceptions in social networks (but see Kitts, 2003). Instead, most studies on misperceptions focus only on one kind of social tie, such as strangers in laboratory

experiments (e.g., Human & Biesanz, 2011) or friends in egocentric network studies (e.g. Green et al., 2014). On top of this, most previous research does not explicitly examine the role of opinion sharing in misperceptions, but instead focus on psychological mechanisms such as the projection of one's own opinion onto others (Robbins & Krueger, 2005) or stereotyping others based on their group membership (DiDonato et al., 2011). Therefore, to contribute to the literature, we examine the alternative proposition that the social norms that act as the basis for homophobic behavior may be misperceived, but nonetheless persist because individuals share their opinion selectively with others in their social network whom they perceive as similar to themselves.

To test this proposition, we will first empirically demonstrate what social network properties explain the extent to which an individual (ego) misperceives the opinions about homosexuality of another individual (alter), focusing specifically on friendship ties (i.e., friends vs non-friends) and group membership (i.e., ethno-religious group and gender). These (mis)perceptions of others' opinions form the basis of our understanding what opinions are common or endorsed in our social environment, i.e., what the social norm is (Tankard & Paluck, 2016). After we establish what factors are related to opinion misperception, we will then study to what extent this misperception is related to egos' willingness to share their opinion about homosexuality with alters. In doing so, this study offers scope for interventions that try to reduce norm misperceptions between groups to stimulate social change.

We collected complete network data in 26 classrooms in 5 schools for post-secondary vocational education in the Netherlands ($N = 234$ students). In each classroom, we collected complete network data on friendship nominations, as well as self-reported opinions about homosexuality, perceived opinions of peers, and the willingness of students to share their opinions with others ($n = 323$ friends and $n = 649$ randomly selected non-friends). This unique dataset allows us to examine and compare competing explanations for misperceptions in social networks (i.e., friendship ties and group membership), and how these misperceptions are related to the willingness to share opinions. In doing so, we can describe whether and how misperceptions and opinion sharing are mutually reinforcing, because of which misperceptions can sustain in social networks over time.

5.2 Theory and hypotheses

5.2.1 Misperceptions of opinion

A straightforward explanation for misperceptions is that individuals sometimes simply lack the necessary information to make an informed judgement about others (Chambers & Windschitl, 2004). For example, individuals are more likely to disclose

information about themselves in close relationships compared to relationships that are more superficial (Willems, Finkenauer, & Kerkhof, 2020). Distant individuals therefore have much less opportunity to acquire an accurate perception of the opinions of alters compared to close individuals (Funder, 1995). Moreover, when considering opinions that are potentially controversial, such as opinions about homosexuality, individuals may be even more careful in monitoring their behavior, causing them to share their opinion only with targets they feel they can trust (Derlega, Winstead, Mathews, & Braitman, 2008; Omarzu, 2000). In line with this reasoning, studies find that the degree of misperception decreases with increasing strength of the relationship between individuals (Biesanz, West, & Millevoi, 2007; Jäger, 2005; Stark & Stocké, 2021)². We therefore expect the following:

H1: Egos' misperception of alters' opinions about homosexuality are lower when egos and alters are friends compared to when they are not friends.

Misperceptions may also arise because individuals' (erroneous) perceptions can serve their need for self-definition through social connectedness. According to social identity theory and self-categorization theory (Tajfel, 1982; Tajfel & Turner, 1979; Turner, 1985), individuals define their place in society by considering themselves as members of specific groups. In an attempt to maintain a positive social identity, individuals display behavior that is characteristic or desirable for the groups that they identify with (Pagliaro et al., 2011; Travaglino et al., 2014). To this end, individuals are likely more motivated to learn the prototypical traits of ingroup members compared to those of outgroup members (Turner et al., 1987), leading to less misperceptions for ingroup members (DiDonato et al., 2011). Besides this motivational account, individuals may also be more familiar with the characteristics of ingroup members simply because they are more frequently exposed to (characteristics of) ingroup members compared to outgroup members (Konovalova & Le Mens, 2020; Linville, Salovey, & Fischer, 1989).

In this study, we examine two kinds of social groups (or categories), namely ethno-religious groups (i.e., non-Muslim ethnic majority, non-Muslim ethnic minority and Muslim ethnic minority) and gender groups (male and female). Both group memberships offer relevant cues for appropriate opinions about homosexuality. For context, opinions about homosexuality are comparatively progressive in the Netherlands compared to most other countries in the world (Adamczyk & Liao, 2019).

2 In contrast to the studies mentioned here, a meta-analysis by Kenny and West (2010) found a positive relationship between tie strength and misperception. However, as also indicated by the authors, this is likely due to the fact that their meta-analysis includes only studies with a round-robin design in which the participants were not well-acquainted.

Compared to the ethnic majority population, however, opinions about homosexuality tend to be more conservative among ethnic minority groups, as their cultural background often stems from more conservative countries (Röder, 2015; Soehl, 2017a). These conservative opinions are especially prevalent among Muslim ethnic minorities, whose religion is particularly intolerant towards homosexuality (Huijnk & Andriessen, 2016). Likewise, in terms of gender, prior studies consistently find that men hold more conservative opinions about homosexuality than women (Moskowitz, Rieger, & Roloff, 2010; Steffens, 2005). Potentially, this relates to the fact that men tend to experience strong pressures to assert their masculinity, which they can demonstrate through homonegative behavior (Buijs et al., 2011; Phoenix et al., 2003). We expect the following by group membership:

H2: Egos' misperception of alters' opinions about homosexuality is lower when egos and alters belong to the same (vs. different) ethno-religious group or have the same (vs. different) gender.

5.2.2 Willingness to share one's opinion

According to the Spiral of Silence theory (Noelle-Neumann, 1974), individuals are more willing to share their opinion with others when they anticipate that they will agree, because they fear being socially isolated when voicing an opinion that others disagree with. Indeed, previous research has found that individuals avoid overt disagreement with others by withholding possibly controversial opinions (Cowan & Baldassarri, 2018; Glynn, Hayes, & Shanahan, 1997; Matthes et al., 2018). The degree to which individuals expect others in their social environment to hold similar opinions to themselves can depend on properties of their social network. First, individuals tend to form friendship ties with others whom they perceive to hold similar opinions and values to themselves, even when "much of what appears to be value homophily [...] also comes from the misperception of friends' beliefs and opinions" (McPherson et al., 2001, p. 429). Following this reasoning, individuals could therefore be more likely to anticipate their friends to agree with their opinions compared to non-friends. Thus, in line with the Spiral of Silence theory (Noelle-Neumann, 1974), we expect the following:

H3: Egos are more willing to share their opinion with alters when they are friends compared to when they are not friends.

Second, a similar process may occur for social groups, following social identity theory and self-categorization theory (Tajfel & Turner, 1979; Turner, 1985, 1991). To maximize the 'meta-contrast' between their ingroup and the outgroup, individuals

shape their opinions after the prototypical opinions that are relevant to the identity of their ingroup. As a result, in an intergroup context, individuals tend to perceive more similarity between their own opinions and those of ingroup members compared to outgroup members, regardless of whether these perceptions are accurate or not (Haslam, Oakes, McGarty, Turner, & Onorato, 1995; Jetten & Spears, 2003). Combining these insights with the Spiral of Silence theory (Noelle-Neumann, 1974), we would predict that individuals are therefore also more willing to discuss their opinion with ingroup members than with outgroup members. We thus expect the following:

H4: Egos are more willing to share their opinion with alters when they belong to the same (vs. different) ethno-religious group or have the same (vs. different) gender.

5.2.3 Misperceptions and willingness to share opinions

Figure 5.1 shows the conceptual model through which we argue that misperceptions arise and become self-sustaining in a social network. We suggest that individuals are more willing to share their opinions with those whom they perceive hold similar opinions, meaning that friends and members of the same group should be more inclined to share their opinions with each other. However, the perceptions of others' opinions are not necessarily accurate. Specifically, we argue that misperceptions lead individuals to perceive larger differences between their own opinions and those of non-friends and outgroup members than is actually the case. This in turn suppresses their willingness to share their opinion with non-friends and outgroup members and to acquire an accurate perception of their opinions as a result. Therefore, we propose that correcting these misperceptions could increase individuals' willingness to share their opinions with non-friends and outgroup members, which could help to break the negative feedback cycle of misperceptions and willingness to share opinions. In this paper, we will compare people's misperceptions with this counterfactual situation.

5.3 Data and methods

5.3.1 Data collection

The data were collected between June 2022 and April 2023 at a large institution for post-secondary vocational education (students aged 16+) in the Netherlands³. We contacted the teacher for civic education of 26 schools in this institution and

³ The study was approved by the Ethics Committee of the Faculty of Social and Behavioral Sciences of Utrecht (approval number 23-0271).

informed them about our study on how students (mis)perceive themselves and their classmates. 5 schools agreed to participate. In each participating school, the teacher for civic education selected a number of classrooms to administer the survey to, which resulted in a total of 26 classrooms with 240 students. One week before the start of the survey, the students watched a video in the classroom and received a letter that informed them about the procedure and purpose of the study. The students were informed that their answers would be treated confidentially, that their participation in the study was voluntary, and that they were free to discontinue at any time. The survey was administered in the classroom using the students' mobile phones and took approximately 15 minutes to complete. Upon completing the survey, the students could enter their email address to enter a lottery for a €10 gift voucher.

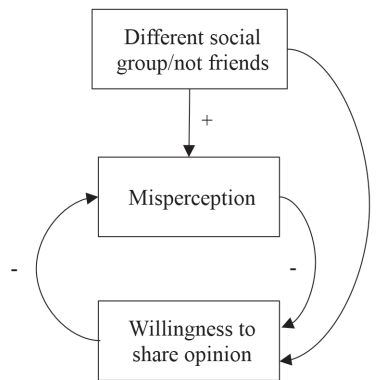


Figure 5.1: Conceptual model of this chapter.

5.3.2 Measures

To measure *friendship ties*, the students could nominate up to 5 classmates they liked the most. To this end, they could copy down the random number associated with each classmate's name that the teacher displayed in class. In our analysis, we distinguish between friends (dyads in which both egos and alters nominate each other as a friend, i.e., a reciprocated friendship) and non-friends (dyads in which a friendship nomination is not reciprocated or dyads without a friendship nomination).

To measure egos' *misperception* of alters' opinions about homosexuality, we look at the difference between the alters' self-reported opinions about homosexuality and the perceived opinions about homosexuality of alters by egos. To measure self-reported opinions about homosexuality, we asked the respondents "what do you think about two men kissing in public?" (0 = completely wrong and 10 = not wrong at all). In previous research, same-sex kissing has been associated with an intuitive response towards

homosexuality, and therefore we hoped that using this item would result in less social desirability bias compared to more general statements (Inbar, Pizarro, Knobe, & Bloom, 2009; O’Handley, Blair, & Hoskin, 2017). To measure perceived opinions of alters, the respondents were asked “what do you think that classmate [number] thinks about two men kissing in public?” (0 = completely wrong and 10 = not wrong at all) for a random selection of three friends and three non-friends in the classroom.

To measure *willingness to share an opinion*, the respondents indicated whether they felt free to share their opinion with the classmates for whom they indicated the perceived opinions about homosexuality (0 = no and 1 = yes).

Table 5.1: Descriptive statistics ($N_{\text{egos}} = 219$, $N_{\text{alters}} = 220$, $N_{\text{dyads}} = 877$)

	<i>M</i> / <i>%</i>	<i>SD</i>	<i>Range</i>
<i>Dependent variables</i>			
Misperception of opinion	2.56	2.66	0-10
Willingness to share opinion	.49	-	0/1
<i>Independent variables</i>			
<i>Ego characteristics</i>			
Non-Muslim ethnic minority	35%	-	0/1
Muslim ethnic minority	30%	-	0/1
Female	47%	-	0/1
Self-reported opinion egos	4.63	3.68	0-10
<i>Alter characteristics</i>			
Non-Muslim ethnic minority	35%	-	0/1
Muslim ethnic minority	30%	-	0/1
Female	48%	-	0/1
Self-reported opinion alters	4.65	3.69	0-10
<i>Dyadic characteristics</i>			
Friendship	34%	-	0/1
Same gender	72%	-	0/1
Same ethno-religious group	44%	-	0/1
Perceived opinion alter	4.33	3.47	0-10

We capture shared group membership in terms of *ethno-religious group* and *gender*. For our measure of ethnicity, we asked the respondents: “Does your family have a country of origin besides the Netherlands? If so, which country?” Due to the small sample size, we split the sample into respondents whose family does not have another country of origin (ethnic majority) and whose family does have another country of origin (ethnic minority). To measure religious affiliation, we asked the

respondents: “Do you consider yourself affiliated with a religious belief? If yes, which one?” Due to the small sample size, we grouped the sample into Muslim and non-Muslim respondents. Because religion and ethnicity are correlated in the sample (88% of Muslims in the sample are ethnic minority) we split the respondents into 3 ethno-religious categories, namely *non-Muslim ethnic majority*, *non-Muslim ethnic minority* and *Muslim ethnic minority*. Due to the small number of respondents that are ethnic majority Muslim, we drop the observations of 8 ethnic majority respondents from our sample. We also split the sample into male and female respondents. We drop the observations of one respondent who indicated their gender as being ‘other’.

Lastly, we drop 26 dyads due to incomplete information about network ties, group memberships and/or opinions. The final sample contains 877 dyads cross-nested in 219 egos and 220 alters (cross-nested because egos could nominate multiple alters and each alters could have been nominated by multiple egos). See Table 5.1 for descriptive statistics of the sample.

5.3.3 Method

The first analysis in this study concerns the factors that are related to misperceptions towards homosexuality. To study this, we use the absolute difference between self-reported opinions and the perceived opinions as our dependent variable. Although absolute difference scores are intuitive measures, they have been criticized for a number of reasons, most prominently for their low reliability (Rogers, Wood, & Furr, 2018). In Appendix D.1, we show our calculations that indicate that such limitations do not apply to our data. We are therefore confident that using absolute difference scores will result in a correct interpretation of our results. We run a multilevel multivariate linear regression (dyads cross-nested in egos and alters⁴) with the absolute difference score as the dependent variable.

In our second analysis, we conduct a multilevel logistic regression in which we explain the willingness to share an opinion by friendship tie, group membership, self-reported attitudes of ego and perceived attitudes of alter. After the analysis, we replace the perceived opinions of alters by the self-reported opinions of alters and obtain what the predicted probability would be if there was no misperception of alters’ opinions. Then, we compare how the predicted probability of willingness to share opinions differs between the situations with and without misperception.

The analyses follow a similar order. In Model 1 of each table, we study the extent to which our dependent variables (misperception and willingness to share opinion)

4 In preliminary analyses, we found that the classroom level accounted for ~1% of the variation in the dependent variable of all models. Therefore, we decided to exclude this level from the analysis.

can be explained by friendship ties. Because friendship ties and group membership are closely related in previous research (McPherson et al., 2001), we add group membership in Model 2, followed by shared group membership between egos and alters in Model 3. Lastly, in Model 4 we add the preceding dependent variable from our conceptual model (see Figure 5.1) as a predictor of the subsequent dependent variable. This illustrates not only the extent to which our results align with the conceptual model, but also the extent to which the effects of the conceptual model are related to the other predictors such as friendship ties and group membership. For example, it could be that individuals are more willing to share their opinions with ingroup members, but not because they misperceive ingroup members less than outgroup members.

5.4 Results

5.4.1 Descriptive results

Promoting a progressive norm towards homosexuality by correcting misperceptions is effective to the extent that individuals underestimate others' progressiveness. Table 5.2 shows the average perceived and self-reported opinions of alters by the characteristics of alters. On average, the perceived opinions of alters (4.33) are indeed significantly less progressive than the self-reported opinions (4.85) ($t = 4.17$; $p < .001$). This means that egos tend to perceive alters as more conservative than alters indicate themselves. Correcting the misperception of alters' opinions would therefore result in a more progressive perception of the norm towards homosexuality. When we split the results by the characteristics of alters, we find that ethnic majority, non-Muslim ethnic minority and female alters are perceived to be significantly more conservative than they indicate in their self-reports. We find no differences for Muslim minority and male alters. In other words, we find the discrepancy between perceived and self-reported opinions in our sample because egos underestimate the progressiveness of alters who belong to progressive groups, namely non-Muslims and women. In contrast, for groups that are associated with conservative opinions about homosexuality, namely Muslims and men, we find that egos perceive their opinions accurately on average.

Corroborating the Spiral of Silence theory (Noelle-Neumann, 1974), how misperceptions are related to the willingness to share opinions depends on whether individuals under- or overestimate the similarity between their own opinions and those of others. Table 5.3 shows the perceived difference in opinions between egos and alters ($|\text{self-reported opinions egos} - \text{perceived opinions alters}|$) and the self-reported difference in opinions ($|\text{self-reported opinions egos} - \text{self-reported opinions alters}|$). On average, the self-reported difference in opinions (3.67) is significantly larger than the perceived difference in opinions between egos and alters (2.51) ($t =$

11.08; $p < .001$). This means that, on average, the difference in opinions between egos and alters is *larger* than egos perceive, and that correcting misperceptions could lead to a *lower* willingness of egos to share their opinions with alters. When we split the results by friendship and shared group membership, we find that for all dyadic characteristics the self-reported difference in opinions is significantly larger than the perceived difference. However, compared to ethno-religious ingroup members (.74), egos underestimate the difference between their opinions and those of ethno-religious outgroup members more (1.49) ($t = 3.61$; $p < .001$). In the following analyses, we will examine to what extent social network properties are related to misperceptions and how these misperceptions influence individuals' willingness to share their opinion.

Table 5.2: Perceived and self-reported opinions of alters (0 = very conservative and 10 = very progressive) by characteristics of alters.

Characteristics alter	Perceived opinions alters		Self-reported opinions alters		Difference	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<i>Ethno-religious group</i>						
Ethnic majority	5.91	3.23	6.75	2.95	.84 ^a	$t = 3.85$; $p < .001$
Non-Muslim ethnic minority	4.83	3.24	5.49	3.39	.66 ^b	$t = 3.04$; $p = .003$
Muslim ethnic minority	1.88	2.58	1.84	3.09	-.04 ^{a,b}	$t = 0.19$; $p = .844$
<i>Gender</i>						
Male	4.21	3.29	4.49	3.58	.29	$t = 1.54$; $p = .123$
Female	4.46	3.65	5.20	3.87	.74	$t = 4.58$; $p < .001$
Average sample	4.33	3.47	4.85	3.75	.51	$t = 4.17$; $p < .001$

Note: ^{a,b} Difference between groups is significant at $p < .05$.

5.4.2 Misperception of opinion

In Table 5.4, we show the results of a multilevel linear regression model to explain factors that account for the misperception of alters' opinions. For Hypothesis 1, we hypothesized that misperception is lower when ego and alter are friends compared to when they are not. In Model 1, we indeed find that the misperception of opinions is lower for friends compared to non-friends ($b = -.61$; $p < .001$). A small part of this effect can be explained by shared group membership (Model 3) and willingness to share opinion (Model 4). We thus find support for Hypothesis 1.

Table 5.3: Absolute perceived difference and absolute self-reported difference in opinions between egos and alters (0 = very similar and 10 = very different).

Characteristics dyad	Perceived difference opinions		Self-reported difference opinions		Difference ΔM
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Not friends	2.63	2.68	3.85	2.97	1.22 $t = 9.19; p < .001$
Friends	2.28	2.84	3.31	3.20	1.03 $t = 6.19; p < .001$
Different ethno-religious group	2.79	2.83	4.28	3.14	1.49 ^a $t = 9.80; p < .001$
Same ethno-religious group	2.16	2.58	2.90	2.78	.74 ^a $t = 5.46; p < .001$
Different sex	2.97	2.60	3.97	3.03	1.00 $t = 5.44; p < .001$
Same sex	2.33	2.77	3.55	3.07	1.22 $t = 9.65; p < .001$
Average sample	2.51	2.74	3.67	3.06	1.16 $t = 11.08; p < .001$

Note: ^a Difference between groups is significant at $p < .05$.

For Hypothesis 2, we argued that the misperception of alters' opinions should be lower when egos and alters belong to the same social group. In Model 2, where we include group membership, we find that Muslim minority alters are misperceived less than majority alters ($b = -.91; p = .005$). When we include whether egos and alters belong to the same groups, in Model 3, we find that individuals misperceive the opinions of their ethno-religious ingroup less than their ethno-religious outgroup ($b = -.58; p = .001$). Including willingness to share in Model 4 does not change the effects of (shared) ethno-religious group membership that we find in Model 3. This means that the misperceptions we find between ethno-religious group cannot be explained by differences in the willingness to share an opinion between ethno-religious groups. We find no differences by the (shared) gender of egos and alters in Model 3. In sum, we find support for Hypothesis 2 when we consider the shared ethno-religious group of the respondents, but not their gender.

When we include the willingness to share an opinion in Model 4, we find that this is not related to the misperception of alters' opinions. This thus means that the current data offer no evidence in support of this predicted relation – as indicated in Figure 5.1 - when we control for friendship and (shared) group membership. In a separate analysis (see Appendix D.2), we find that willingness to share an opinion is related to a lower misperception, but that this can be explained by the fact that friends (who are more willing to share their opinion with each other) have a lower misperception of each other's opinions.

Table 5.4: Multilevel linear regression analysis explaining misperception of alters' opinions.

	Model 1	Model 2	Model 3	Model 4
Fixed part				
Intercept	2.79*** (.14)	3.23*** (.27)	3.34*** (.31)	3.44*** (.31)
Friendship	-.61*** (.17)	-.60*** (.17)	-.54** (.17)	-.43* (.18)
Non-Muslim minority egos		.13 (.23)	.08 (.23)	.05 (.23)
Muslim minority egos		.11 (.27)	.10 (.27)	.12 (.27)
Non-Muslim minority alters		.14 (.29)	.08 (.28)	.07 (.28)
Muslim minority alters		-.91** (.32)	-.90** (.32)	-.92** (.32)
Same ethno-religious group			-.58*** (.17)	-.56** (.17)
Female egos		-.40 (.22)	-.35 (.22)	-.36 (.23)
Female alters		-.21 (.27)	-.21 (.26)	-.20 (.26)
Same gender			.20 (.20)	.20 (.20)
Willingness to share opinion				-.29 (.18)
Random part				
Var(dyads)	4.33	4.33	4.28	4.27
Var(alters)	1.98	1.79	1.74	1.71
Var(egos)	.60	.58	.58	.61
Model fit				
N_{egos}	219	219	219	219
N_{alters}	220	220	220	220
N_{dyads}	877	877	877	877
AIC	4088	4084	4078	4079

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

5.4.3 Willingness to share an opinion

Table 5.5 shows the results of a multilevel logistic regression model explaining the willingness to share an opinion. For Hypothesis 3, we hypothesized that egos are more willing to share their opinions when they are friends with alters compared to when they are not. In Model 1, we indeed find that friends are more willing to share their opinion compared to non-friends ($b = 3.23$; $p < .001$). These effects cannot be explained by (shared) group membership (Models 2 and 3) or by the perceived similarity in opinions between egos and alters (Model 4). In other words, individuals are more willing to share their opinions with friends, but not because friends are more similar to themselves in terms of group membership or because they perceive befriended alters' opinions as more similar to their own compared to non-befriended alters. We find support for Hypothesis 3.

Table 5.5: Multilevel logistic regression analysis explaining willingness to share an opinion.

	Model 1	Model 2	Model 3	Model 4
Fixed part				
Intercept	-.98*** (.23)	-.69 (.43)	-1.16* (.51)	-1.73** (.57)
Friendship	3.23*** (.32)	3.24*** (.32)	3.21*** (.33)	3.38*** (.35)
Non-Muslim minority egos		-.69 (.50)	-.63 (.52)	-.34 (.57)
Muslim minority egos		.52 (.54)	.49 (.56)	1.06 (.72)
Non-Muslim minority alters		-.21 (.28)	-.14 (.28)	.01 (.30)
Muslim minority alters		-.40 (.35)	-.49 (.37)	-.09 (.41)
Same ethno-religious group			.78** (.25)	.68* (.27)
Female egos		-.15 (.44)	-.20 (.46)	-.24 (.51)
Female alter		.12 (.29)	.11 (.30)	-.14 (.32)
Same gender			.23 (.30)	.17 (.32)
Self-reported opinions egos				.04 (.08)
Perceived opinions alters				.17** (.06)
* Self-reported opinions egos				.06*** (.01)
Random part				
Var(dyads)	3.29	3.29	3.29	3.29
Var(alternates)	.00	.00	.00	.00
Var(egos)	6.55	6.33	6.89	8.28
Model fit				
N_{egos}	219	219	219	219
N_{alters}	220	220	220	220
N_{dyads}	877	877	877	877
AIC	910	916	909	889

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses. Self-reported opinions of egos and perceived opinions of alters are centered around their grand mean

When we look at shared group membership in Model 3 for Hypothesis 4, we find that individuals are more willing to share their opinion with ethno-religious ingroup members compared to outgroup members ($b = .78$; $p = .002$). A small and non-significant part of this effect is explained by including the (similarity between the) opinions of egos and alters in Model 4. Thus, in parallel to our finding for friendship, individuals are more willing to share their opinions with ethno-religious ingroup members. However, this cannot be explained by the fact that they perceive their opinions to be more similar to their own compared to ethno-religious outgroup members. We do not find any effects

for (shared) gender. We thus find support for Hypothesis 4 when we consider shared ethno-religious group membership, but not gender.

When we include the perceived similarity in the opinions of alters and egos in Model 4, we find that the more progressive the perceived opinions of alters, the higher egos' willingness to share their opinion with alters is ($b = .17$; $p = .002$). In line with the Spiral of Silence theory, we also find that the higher the perceived similarity between the opinions of egos and alters (indicated by their interaction effect), the greater egos' willingness to share their opinion is ($b = .06$; $p < .001$).

5.4.4 Misperceptions and willingness to share opinions

In the previous analyses, we found that egos misperceive friends and ethno-religious ingroup members less than non-friends and ethno-religious outgroup members, and that egos are also more willing to share their opinions with friends and ethno-religious ingroup members. However, we also find that the willingness to share opinions does not change significantly when we control for the perceived similarity in opinions between egos and alters. In other words, it appears that individuals are simply more willing to share their opinions with particular groups irrespective of the opinions that they hold. Therefore, it is likely that correcting misperceptions of alters' views does not substantially change egos' willingness to share their opinions with (non-)friends and in/outgroup members. To examine this, in Table 5.6 we contrast the predicted willingness of egos to share their opinion based on egos' current perception of alters' opinions (which may be inaccurate, i.e. *misperception*) with a counterfactual situation in which egos have a completely accurate perception of alters' opinions (*no misperception*).

For all characteristics, we find only small and non-significant changes *within* groups in the willingness to share opinions after we correct misperceptions (e.g. friends before and after correcting misperceptions). We do find some significant differences in the change *between* groups, although these differences are comparatively small. For *friendship ties*, we find that, compared to friends, the change in the willingness to share an opinion is 2 percentage points less negative for non-friends ($t = 2.05$; $p = .041$). In a separate analysis (see Appendix D.2) we found that friends' lower misperceptions can be explained by their higher willingness to share an opinion, and thus correcting misperceptions can increase non-friends' willingness to share their opinions compared to friends. For *ethno-religious groups*, we find that the change is also 2 percentage points less negative for ethno-religious ingroup members compared to outgroup members ($t = 2.42$; $p = .016$). Our previous analyses can explain this result: egos tend to underestimate the similarity between their own opinions and those of ethno-religious ingroup members compared to outgroup members (see Table 5.3). As egos are more willing to share their opinion with alters who hold similar opinions

(see Table 5.5), they are more willing to share their opinions with ethno-religious ingroup members when we correct misperceptions. For *gender*, we do not find that correcting misperceptions changes the willingness of egos to share their opinions with their gender ingroup versus outgroup.

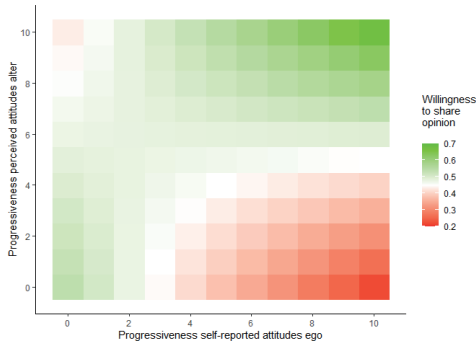
Table 5.6: Willingness to share opinion with and without misperception by friendship ties and shared group membership.

	Misperception	No misperception	Change	<i>t</i>	<i>p</i>
Not friends	0.35	0.34	-0.01 ^b	0.64	0.52
Friends	0.77	0.74	-0.03 ^b	1.29	0.20
Different ethno-religious group	0.43	0.40	-0.03 ^c	1.13	0.26
Same ethno-religious group	0.57	0.56	-0.01 ^c	0.31	0.76
Different sex	0.41	0.40	-0.01	0.29	0.78
Same sex	0.52	0.50	-0.02	1.04	0.30
Average sample	0.49	0.47	-0.02	1.02	0.31

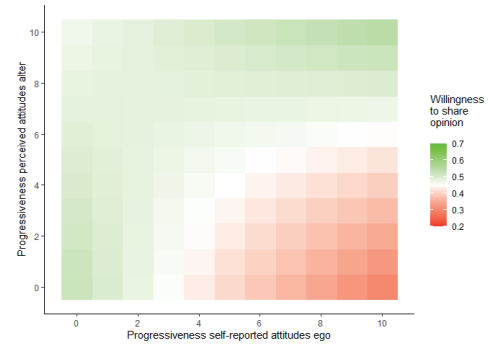
Note: ^{b, c} Significant difference in change at $p < .05$. Predicted values are calculated on the basis of Model 4 in Table 5.5.

We also find changes in the willingness to share an opinion by the (perceived similarity in) *opinions* of egos and alters. Figure 5.2 shows the predicted willingness to share an opinion by the opinions of egos and alters with and without misperception (Panel A and B, respectively), and the difference between the two situations (Panel C). Panel A clearly shows that individuals are more willing to share their opinions with alters whom they perceive as progressive and whom they perceive to hold similar opinions (see also Table 5.5). When we correct misperceptions, however, we find that the willingness decreases for precisely these alters (Panel C). This is because many alters who were originally perceived as progressive are in fact more conservative, which reduces egos' willingness to share their opinions with them. This is especially the case for progressive egos: not only are alters more conservative, but they also hold opinions which are less similar to those of egos. Lastly, after we correct misperceptions, egos are more willing to share their opinions with others whom they originally perceived to hold very different opinions. This is especially pronounced for progressive egos who originally perceived alters as conservative: not only are their opinions more similar than egos originally perceived, but alters are also more progressive.

A) With misperception



B) Without misperception



C) Change

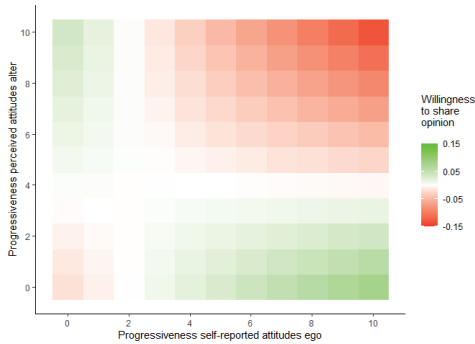


Figure 5.2: Predicted willingness to share opinion by the self-reported opinions of egos and the perceived opinions of alters. Probabilities are based on Model 4 of Table 5.5 using the current situation with misperception of alters opinions (Panel A), the counterfactual situation without misperception of alters' opinions (Panel B) and the difference between the two situations (panel C).

5.5 Discussion and conclusion

Previous research has shown that individuals often have a limited understanding about what behaviors are common or expected in their social environment, yet these perceptions have a strong influence on their actions (Bursztyn & Yang, 2022; Cialdini & Goldstein, 2004). Therefore, some argue that addressing norm misperceptions might be an effective strategy to promote social change (Tankard & Paluck, 2016). In this study, we applied this perspective to misperceptions about opinions about homosexuality to offer scope for interventions that aim to reduce homophobic behavior. Given how important the properties of social networks are in how norms are communicated (Blau & Schwartz, 1984; Centola, 2015), we studied (i) what social

network properties were related to misperceptions and (ii) how these misperceptions were related to willingness to share an opinion. To study this, we collected complete network data among students at a large institution for post-secondary vocational education. This unique dataset allowed us to compare competing explanations for misperceptions, such as friendship ties and shared group membership. Furthermore, we could examine whether and how these misperceptions are sustained in social networks through opinion sharing, and what role the characteristics of students and their social networks play herein.

Our results illustrate the complex interrelation between misperceptions and willingness to share opinions. Overall, we found that the perception of others' opinions was related to the willingness to share opinions, even though these perceptions were often incorrect. However, the willingness to share opinions did not change substantially when we corrected misperceptions. This was because we found two counteracting relationships between misperceptions and the willingness to share opinions. On the one hand, we found that students generally underestimated the progressiveness of others' opinions. As students were more willing to share their opinions with others whom they perceived as progressive, correcting misperceptions increased their willingness to share their opinions. On the other hand, we found that students overestimated the similarity between their own opinions and those of others. As students were more willing to share their opinions with others whose opinions they perceived as similar to their own, correcting misperceptions decreased students' willingness to share their opinions with others. Because of these contrasting mechanisms, we found that, the average willingness to share opinions did not change substantially when we corrected misperceptions. This, however, does not mean that misperceptions are unrelated to the willingness to share opinions. In fact, it illustrates the variety of ways in which these two concepts can be related, even though this relationship may not be immediately apparent.

When we considered differences by group membership, we found that students underestimated the progressiveness of progressive groups (non-Muslims and women), whereas the opinions of conservative groups (Muslims and men) were perceived accurately on average. Therefore, even though the conservative opinions of men and Muslims are often problematized in public debate (Buijs et al., 2011), this finding suggests that correcting the misperceptions of progressive groups may be a more effective strategy to promote a progressive norm towards homosexuality. When we considered the role of shared group membership, we found that the degree of misperception was higher for non-friends compared to friends, and for ethno-religious outgroup members compared to ingroup members. This finding corroborates previous research which argues that individuals may perceive friends and ingroup members more accurately because more information is exchanged in closer ties (Biesanz et al.,

2007; Willems et al., 2020) and that individuals may be more motivated to learn the prototypical traits of the groups that they identify with (Turner et al., 1987). However, we found no differences by the gender of respondents. Even though males had more conservative perceived and self-reported opinions about homosexuality than females, the contrast between these groups was much smaller compared to those of ethno-religious groups (see Table 5.2). Because of this, students perhaps did not characterize gender groups by prototypical opinions about homosexuality to same degree as they did ethno-religious groups. It is possible that, as a result, gender did not play an important role in the misperception of opinions about homosexuality and its consequences.

We also found that egos were more willing to share their opinions with friends and ethno-religious ingroup members compared to non-friends and ethno-religious outgroup members. This, however, could not be explained by the fact that students perceived a higher level of similarity between their own opinions and those of friends and ethno-religious ingroup members. Students were simply more willing to share their opinions with these groups whether they held similar opinions or not. This finding presents an interesting nuance to the arguments put forward by the Spiral of Silence theory (Noelle-Neumann, 1974). This theory describes a somewhat universal pattern that perceived disagreement leads to a lower willingness to share opinions, irrespective of the characteristics of individuals and their social networks. However, group membership can play an important role in the extent to which individuals conform to norms in their social environment (Barreto & Ellemers, 2000, 2003). Our results also suggest that studies on the Spiral of Silence should not disregard the role of group membership: we show that individuals may also feel comfortable to express their disagreement with others whom they feel close to, such as friends and ingroup members (see also Cowan & Baldassarri, 2018).

Given that students were more willing to share their opinions with friends and ethno-religious ingroup members irrespective of their opinions, it is unsurprising that correcting the misperceptions of alters' opinions did not substantially change egos' willingness to share their opinions for these groups. We found that students became slightly more willing to share their opinions with non-friends (versus friends) and ethno-religious ingroup members (versus outgroup members) after we corrected misperceptions. However, in light of the average willingness to share opinions among students (49%), the two percentage points change that we found for friends and ethno-religious groups was comparatively small.

In addition to these results for friendship and group membership, we also found differences by the opinions of students. Specifically, we found that students became more willing to share opinions with others whom they originally perceived to hold very different views when we corrected misperceptions. This was because, for these

students, the difference in opinion was often smaller than they originally perceived. At the same time, students became less willing to share their opinions with others whom they originally perceived as progressive, as many of these others were in fact more conservative (which decreased the willingness to share opinions). This was especially the case for progressive students, since the opinions of others were not only more conservative, but also less similar. These findings show that correcting misperceptions can promote the exchange of views between individuals who were originally perceived to be different. At the same time, however, should individuals overestimate the similarity between themselves and others, the opposite may also occur.

This study has a number of limitations. First, due to the cross-sectional design, we could only identify the association between misperceptions and willingness to share an opinion, but not the causal relationship. Based on the literature of the self-reinforcing Spiral of Silence (Noelle-Neumann, 1974) it is likely that both occur, but in this study, we could not disentangle these two effects. Second, due to the small sample size, we were unable to further specify the social network properties that affected (the consequences of) misperceptions. For example, some studies suggest that ingroup norms may have a stronger effect on behavior for Muslim minority individuals, due to their tighter and more collectivistic culture (Hofstede, 1980; Minkov et al., 2017; Uz, 2015), but we could not make this distinction. Also, it is possible that Muslim minority individuals were more willing to express conservative (versus progressive) opinions about homosexuality with ingroup members due to their more conservative group norm (Huijnk & Andriessen, 2016), but we also did not examine this due to the small sample size. Third, as we did not find much variation on the classroom level, we focused specifically on the properties of students' ties, not on the properties of the classroom network as a whole. Previous research has shown, however, that network structure also affects the degree to which individuals misperceive the opinions and behaviors of others (An, 2022; Jäger, 2005). Fourth, we only studied how opinions about homosexuality are communicated through opinion sharing. However, other types of behavior could also signal one's opinion to others in the network, such as bullying or harassment (Denison et al., 2021; Poteat et al., 2015). However, such measures are more strongly subjected to social desirability bias which could lead to invalid results (Steffens, 2005).

These limitations notwithstanding, our study demonstrated the complex interrelation between misperceptions, perceived similarity in opinions and willingness to share an opinion in a social network. When designing an intervention aimed at reducing norm misperceptions, our results suggest that practitioners should take into account the following. First, not all individuals are necessarily misperceived equally, and the degree to which this occurs can depend on social network properties such as friendship and shared group membership. Second, correcting misperceptions

are not necessarily related to (large) behavioral changes, as individuals' behaviors are not necessarily driven by their perceptions of others' opinions. Third, correcting misperceptions can lead to undesirable outcomes (such as less opinion sharing) if individuals overestimate, rather than underestimate, the similarity between their own opinions and those of others. Fourth, and related to our previous point, it is also possible that individuals underestimate support for an undesirable norm among others, because of which correcting misperceptions can have the opposite effect than is intended by the intervention. In short, despite their potential to promote social change, interventions that target norm misperceptions are not a universal remedy for undesirable behavior and should be implemented with careful consideration.

Appendix A

Supplements to Chapter 2

A.1 Trends in attitudes towards homosexuality in WVS and EVS data

To illustrate the trend of attitudes towards homosexuality over time in the EVS and WVS data, Figure A.1.1 displays the linear fitted regression lines of mean attitudes per country over all waves. As can be seen in the figure, almost all countries show a trend towards more progressive attitudes towards homosexuality. The countries with the strongest trend towards more progressive attitudes can be found in countries in Southern Europe (e.g. Andorra and Italy), Northern Europe (e.g. Iceland and Denmark) and Eastern Asia (e.g. Japan and Hong Kong). In contrast, countries with the strongest trend towards more conservative attitudes stem almost exclusively from one of three regions, namely South-Eastern Asia (e.g. Indonesia and Bangladesh), Western Asia (e.g. Armenia and Israel) and Eastern Europe (e.g. Czech Republic and Slovakia). See Figure A.1.2 for the trend for each region.

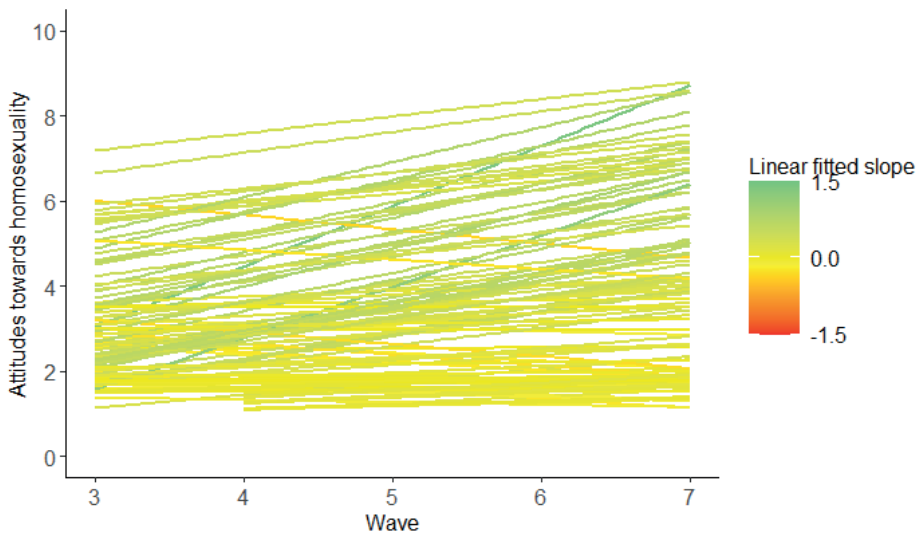


Figure A.1.1: linear fitted regression line for attitudes towards homosexuality of all countries in the EVS and WVS dataset for wave 3-7.

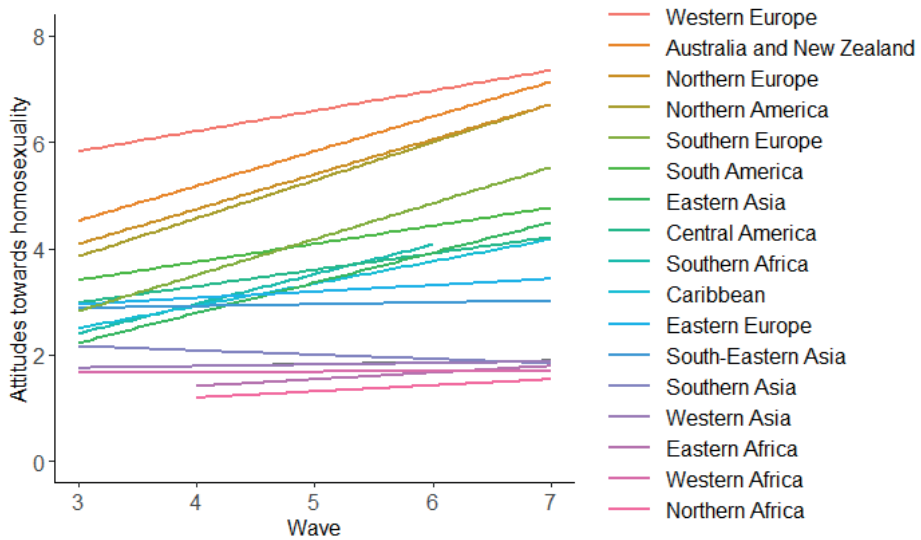


Figure A.1.2: linear fitted regression lines for attitudes towards homosexuality for all CILS4EU regions in the EVS and WVS dataset for wave 3-7.

For our analyses, we standardize the country scores per wave to retrieve a variable that indicates how conservative or progressive the attitudes towards homosexuality are in a country compared to other countries at a particular wave. To get an indication of how the slope of this variable varies between the countries in the data, we plotted the distribution of this coefficient for all countries in Figure A.1.3. As can be seen in this figure, for the vast majority of countries, the linear slope in the *standardized score* for attitudes towards homosexuality is very close to zero ($M = .02$; $SD = .15$). This means that there is little variation in how attitudes towards homosexuality develop around the world. Furthermore, the outliers we find in Figure A.1.3, namely Czech Republic, Myanmar, Slovakia, Andorra and Latvia play only a marginal role in the analysis. Therefore, we take the average of the standardized scores over all waves as our measure for the attitudes towards homosexuality in the EVS and WVS data.

Appendix A

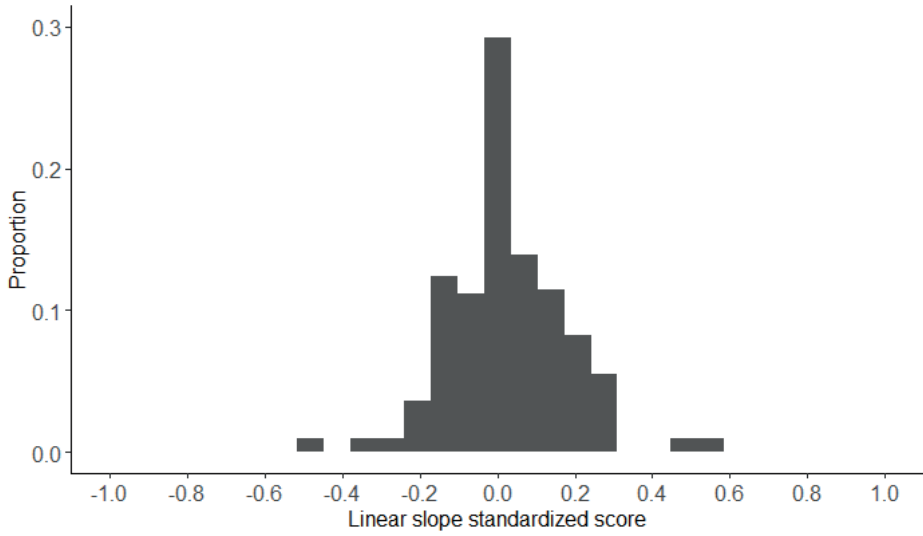


Figure A.1.3: distribution of the linear slope of the standardized score for attitudes towards homosexuality (total of 548 waves nested in 115 countries)

A.2 Attitudes towards homosexuality in countries WVS and EVS data

Countries in italics are countries of origin of respondents in the CILS4EU dataset which are not included in the EVS and WVS data. For these countries we assign the mean value of the region (the values in bold).

Table A.2.1: Mean standardized scores for attitudes towards homosexuality per country, education level and region in round 3-7 of the EVS and WVS data.

Region	Country	Education level	Standardized score
Eastern Africa	Region average	Low	-.96
		Middle	-.98
		High	-.95
	Ethiopia	Low	-1.02
		Middle	-1.05
		High	-1.00
	Rwanda	Low	-1.01
		Middle	-1.07
		High	-.98
	Tanzania	Low	-.96
		Middle	-1.00
		High	-.96
	Uganda	Low	-.95
		Middle	-.97
		Missing	-.99
	Zambia	Low	-.87
		Middle	-.88
		High	-.91
	Zimbabwe	Low	-.98
		Middle	-.94
		High	-.87
	<i>Eritrea</i>		
	<i>Somalia</i>		
	<i>Malawi</i>		
	<i>Mauritius</i>		
	<i>Mozambique</i>		
	<i>Burundi</i>		
	<i>Seychelles</i>		
	<i>Djibouti</i>		
	<i>Kenya</i>		

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
Northern Africa	Region average	Low	-1.08
		Middle	-1.05
		High	-1.05
	Algeria	Low	-.97
		Middle	-.94
		High	-.92
	Egypt	Low	-1.10
		Middle	-1.08
		High	-1.08
	Libya	Low	-1.05
		Middle	-1.03
		High	-1.02
	Morocco	Low	-1.13
		Middle	-1.10
		High	-1.10
Tunisia	Low	-1.15	
	Middle	-1.12	
	High	-1.13	
Southern Africa	Region average	Low	-.23
		Middle	-.08
		High	.16
	South Africa	Low	-.23
		Middle	-.08
		High	.16
Western Africa	Region average	Low	-.89
		Middle	-.91
		High	-.95
	Burkina Faso	Low	-.93
		Middle	-.97
		High	-.99
	Ghana	Low	-.95
		Middle	-.97
		High	-1.04
	Mali	Low	-.82
		Middle	-.80
		High	-.87

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Nigeria	Low	-.87
		Middle	-.88
		High	-.91
	<i>Cote d'Ivoire</i>		
	<i>Liberia</i>		
	<i>Gambia</i>		
	<i>Senegal</i>		
	<i>Sierra Leone</i>		
	<i>Togo</i>		
	<i>Benin</i>		
	<i>Cape Verde</i>		
Caribbean	Region average	Low	-.39
		Middle	-.21
		High	.12
	Dominican Rep	Low	-.39
		Middle	-.21
		High	.15
	Haiti	Low	-.30
		Middle	-.14
		High	.12
	Puerto Rico	Low	-.39
		Middle	-.22
		High	.10
	Trinidad and Tobago	Low	-.48
		Middle	-.29
		High	.13
	<i>Grenada</i>		
	<i>Bonaire, Saint Eustatius and Saba</i>		
	<i>Curacao</i>		
	<i>Saint Vincent and the Grenadines</i>		
	<i>Barbados</i>		
	<i>Dominican Republic</i>		
	<i>Netherlands Antilles</i>		
	<i>Saint Martin (French part)</i>		
	<i>Aruba</i>		
	<i>Jamaica</i>		

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	<i>Antigua and Barbuda</i>		
	<i>Caribbean</i>		
	<i>Saint Kitts and Nevis</i>		
	<i>Cuba</i>		
Central America	Region average	Low	-.24
		Middle	.16
		High	.43
	El Salvador	Low	-.28
		Middle	.11
		High	.40
	Guatemala	Low	-.28
		Middle	.06
		High	.31
	Mexico	Low	-.14
		Middle	.35
		High	.63
	Nicaragua	Low	-.28
		Middle	.12
		High	.40
	<i>Panama</i>		
	<i>Honduras</i>		
	<i>Turks and Caicos Islands</i>		
	<i>Nicaragua</i>		
South America	Region average	Low	.02
		Middle	.40
		High	.76
	Argentina	Low	.52
		Middle	1.12
		High	1.49
	Bolivia	Low	-.06
		Middle	.31
		High	.65
	Brazil	Low	.07
		Middle	.36
		High	.78
	Chile	Low	.27
		Middle	.60
		High	1.05

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Colombia	Low	-.38
		Middle	.05
		High	.45
	Ecuador	Low	-.14
		Middle	.18
		High	.46
	Peru	Low	-.23
		Middle	.08
		High	.32
	Uruguay	Low	.38
		Middle	.83
		High	1.18
	Venezuela	Low	-.20
		Middle	.08
		High	.45
	<i>Guyana</i>		
	<i>Paraguay</i>		
	<i>South America</i>		
	<i>Bolivia</i>		
	<i>Suriname</i>		
Northern America	Region average	Low	.38
		Middle	.74
		High	1.33
	Canada	Low	.48
		Middle	.93
		High	1.50
	United States	Low	.29
		Middle	.55
		High	1.16
	<i>Bermuda</i>		
Central Asia	Region average	Low	-.87
		Middle	-.88
		High	-.74
	Kazakhstan	Low	-.86
		Middle	-.77
		High	-.65

Table A.2.1 (continued):

Region	Country	Education level	Standardized score	
Eastern Asia	Kyrgyzstan	Low	-.86	
		Middle	-.95	
		High	-.79	
	Tajikistan	Low	-.87	
		Middle	-.88	
		High	-.74	
	Uzbekistan	Low	-.90	
		Middle	-.91	
		High	-.79	
	<i>Turkmenistan</i>			
	Region average	Low	-.61	
		Middle	-.23	
		High	.22	
	China	Low	-1.03	
		Middle	-.91	
		High	-.50	
	Hong Kong SAR	Low	-.48	
		Middle	-.06	
		High	.37	
	Japan	Low	-.12	
		Middle	.42	
		High	.80	
	Macau SAR	Low	-.52	
		Middle	-.15	
		High	.29	
	South Korea	Low	-.81	
		Middle	-.46	
High		-.05		
Taiwan ROC	Low	-.69		
	Middle	-.20		
	High	.44		
<i>Nepal</i>				
<i>Mongolia</i>				
Southern Asia	Region average	Low	-.69	
		Middle	-.78	
		High	-.79	

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	India	Low	-.55
		Middle	-.68
		High	-.69
	Pakistan	Low	-.83
		Middle	-.88
		High	-.89
	<i>Kashmir</i>		
	<i>Sri Lanka</i>		
	<i>Afghanistan</i>		
South-Eastern Asia	Region average	Low	-.31
		Middle	-.26
		High	-.15
	Bangladesh	Low	-.54
		Middle	-.52
		High	-.46
	Indonesia	Low	-.61
		Middle	-.63
		High	-.59
	Malaysia	Low	-.25
		Middle	-.28
		High	-.22
	Myanmar	Low	-.43
		Middle	-.39
		High	-.30
	Philippines	Low	.15
		Middle	.19
		High	.23
	Singapore	Low	-.39
		Middle	-.20
		High	.07
	Thailand	Low	-.22
		Middle	-.09
		High	.07
	Vietnam	Low	-.20
		Middle	-.15
		High	.02

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	<i>Myanmar</i>		
	<i>Laos</i>		
	<i>Cambodia</i>		
Western Asia	Region average	Low	-0.98
		Middle	-0.83
		High	-0.70
	Armenia	Low	-1.08
		Middle	-0.96
		High	-0.83
	Azerbaijan	Low	-1.05
		Middle	-0.98
		High	-0.86
	Cyprus	Low	-0.72
		Middle	-0.36
		High	-0.08
	Georgia	Low	-1.07
		Middle	-1.01
		High	-0.89
	Iran	Low	-1.04
		Middle	-0.98
		High	-0.94
	Iraq	Low	-0.92
		Middle	-0.78
		High	-0.72
	Israel	Low	-0.81
		Middle	-0.51
		High	-0.29
	Jordan	Low	-1.17
		Middle	-1.12
		High	-1.10
	Kuwait	Low	-0.98
		Middle	-0.83
		High	-0.70
	Lebanon	Low	-0.85
		Middle	-0.66
		High	-0.56

Table A.2.1 (continued):

Region	Country	Education level	Standardized score	
	Northern Cyprus	Low	-.95	
		Middle	-.76	
		High	-.58	
	Palestine	Low	-1.00	
		Middle	-.85	
		High	-.73	
	Qatar	Low	-1.01	
		Middle	-.87	
		High	-.75	
	Saudi Arabia	Low	-.98	
		Middle	-.91	
		High	-.85	
	Turkey	Low	-1.04	
		Middle	-.83	
		High	-.60	
	Yemen	Low	-.98	
		Middle	-.88	
		High	-.76	
		<i>Bahrain</i>		
		<i>Kurdistan</i>		
		<i>United Arab Emirates</i>		
	<i>Syria</i>			
Eastern Europe	Region average	Low	-.53	
		Middle	-.13	
		High	.32	
	Belarus	Low	-.79	
		Middle	-.46	
		High	-.28	
	Bulgaria	Low	-.65	
		Middle	-.21	
		High	.26	
	Czech Republic	Low	.66	
		Middle	1.05	
		High	1.58	
	Hungary	Low	-.60	
		Middle	-.16	
		High	.33	

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Moldova	Low	-.76
		Middle	-.50
		High	-.15
	North Macedonia	Low	-.98
		Middle	-.63
		High	-.37
	Poland	Low	-.58
		Middle	.01
		High	.58
	Romania	Low	-.96
		Middle	-.65
		High	-.31
	Russia	Low	-.90
		Middle	-.69
		High	-.41
	Slovakia	Low	.17
		Middle	.69
		High	1.26
	Slovenia	Low	-.13
		Middle	.67
		High	1.73
	Ukraine	Low	-.81
		Middle	-.67
		High	-.38
	<i>USSR</i>		
	<i>Czechoslovakia</i>		
Northern Europe	Region average	Low	.52
		Middle	.97
		High	1.40
	Denmark	Low	.99
		Middle	1.57
		High	2.07
	Estonia	Low	-.64
		Middle	-.33
		High	-.03
	Finland	Low	.64
		Middle	1.23
		High	1.68

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Great Britain	Low	.74
		Middle	1.32
		High	1.85
	Iceland	Low	1.42
		Middle	1.65
		High	2.19
	Ireland	Low	.46
		Middle	.90
		High	1.45
	Latvia	Low	-.18
		Middle	.11
		High	.44
	Lithuania	Low	-.62
		Middle	-.37
		High	-.23
	Northern Ireland	Low	.38
		Middle	.84
		High	1.21
	Norway	Low	.92
		Middle	1.45
		High	1.98
	Sweden	Low	1.61
		Middle	2.25
		High	2.79
	<i>Guernsey</i>		
	<i>Aland Islands</i>		
	<i>Channel Islands</i>		
Southern Europe	Region average	Low	-.04
		Middle	.45
		High	.70
	Albania	Low	-.50
		Middle	-.27
		High	.00
	Andorra	Low	.78
		Middle	1.25
		High	1.41

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Bosnia and Herzegovina	Low	-.55
		Middle	-.26
		High	-.10
	Croatia	Low	-.35
		Middle	.16
		High	.53
	Greece	Low	-.08
		Middle	.73
		High	1.07
	Italy	Low	.20
		Middle	.88
		High	1.16
	Kosovo	Low	-.22
		Middle	.19
		High	.39
	Malta	Low	-.02
		Middle	.47
		High	.72
	Montenegro	Low	-.60
		Middle	-.32
		High	-.13
	Portugal	Low	.05
		Middle	.74
		High	.97
	Serbia	Low	-.27
		Middle	-.04
		High	.26
	Spain	Low	1.08
		Middle	1.83
		High	2.06
	<i>Yugoslavia</i>		
	<i>Serbia and Montenegro</i>		
	<i>Gibraltar</i>		
	<i>Kosovo-Albania</i>		
	<i>Sinti and Roma</i>		
Western Europe	Region average	Low	1.04
		Middle	1.72
		High	2.09

Table A.2.1 (continued):

Region	Country	Education level	Standardized score
	Austria	Low	.75
		Middle	1.54
		High	2.10
	Belgium	Low	.90
		Middle	1.56
		High	1.94
	France	Low	.90
		Middle	1.58
		High	1.99
	Germany	Low	.92
		Middle	1.66
		High	1.93
	Luxembourg	Low	1.11
		Middle	1.76
		High	2.06
	Netherlands	Low	1.61
		Middle	2.21
		High	2.55
Switzerland	Low	1.06	
	Middle	1.71	
	High	2.06	
<i>Former German Eastern Territories</i>			
Australia and New Zealand	Region average	Low	.39
		Middle	.97
		High	1.64
	Australia	Low	.54
		Middle	1.15
		High	1.68
	New Zealand	Low	.24
		Middle	.79
		High	1.59

A.3 Description of the latent change score model

The latent change score model we used can be represented as follows:

$$\Delta ATT_{it} = (a \cdot G_{it}) + (\beta \cdot ATT_{(t-1)i}) + e_{it}$$

Where the change in attitudes towards homosexuality ΔATT at time t for individual i is estimated as a function of the average latent change G and the change proportional to the attitude towards homosexuality at $t-1$.

To estimate this model, we adopt the procedure described in McArdle (2009) to the multilevel structure of our data. We first estimate a univariate latent change score model. For a diagram of this model, see Figure A.3.1. To start, we regress ATT_3 on ATT_1 and the latent change score variable ΔATT at both the level of the student and the classroom. By fixing the values of these effects to 1, we explicitly define ΔATT as the difference between ATT_1 and ATT_3 : $ATT_3 = 1 \cdot ATT_1 + 1 \cdot \Delta ATT$. Next, to capture the proportional growth, we include an autoregressive parameter δ_{ATT1} and the corresponding error term e at the level of the students. The autoregressive parameter δ_{ATT1} indicates the extent to which the change in attitudes between wave 1 and wave 3 ΔATT is dependent on the attitude at wave 1 ATT_1 . As we are not interested in the proportional growth at the level of the classroom, we include only the covariance of the score at wave 1 with the change in this score between wave 1 and wave 3 at this level ($\sigma_{ATT1, \Delta ATT}$). At the level of the classroom, the triangle represents the implied constant of 1, used to include the mean of attitudes towards homosexuality at wave 1 (μ_{ATT1}) and the intercept of changes in attitudes towards homosexuality between wave 1 and wave 3 ($\delta_{\Delta ATT}$) in the model.

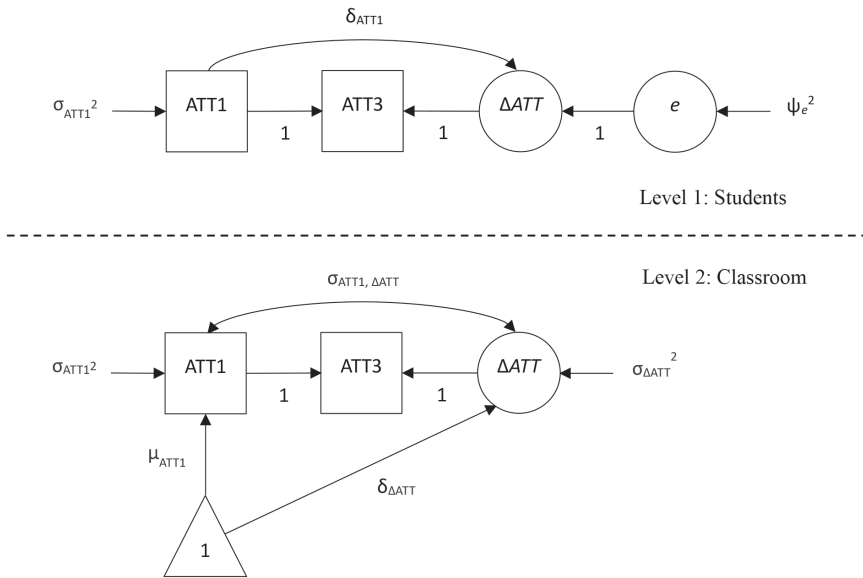


Figure A.3.1: Univariate latent change score model to explain attitudes towards homosexuality. Students nested in classrooms.



A.4 Attitudes towards homosexuality by student and classroom AHCO

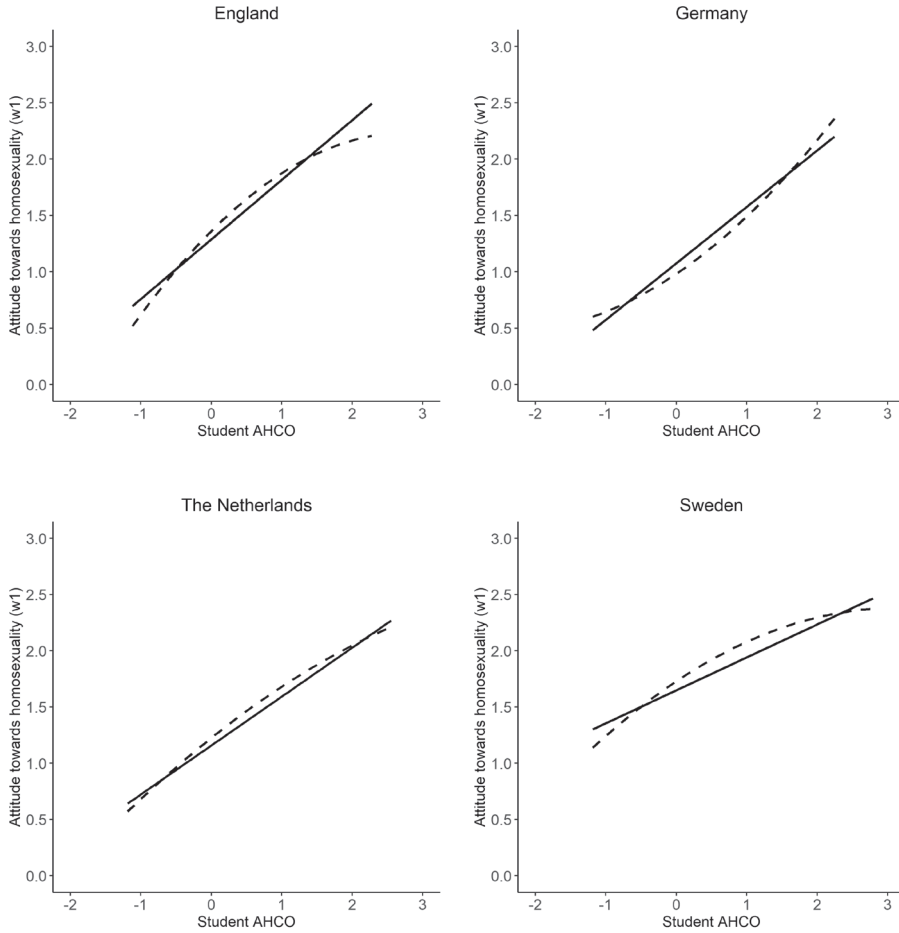


Figure A.4.1: Attitudes towards homosexuality at wave 1 by student AHCO. Separate graph per survey country.

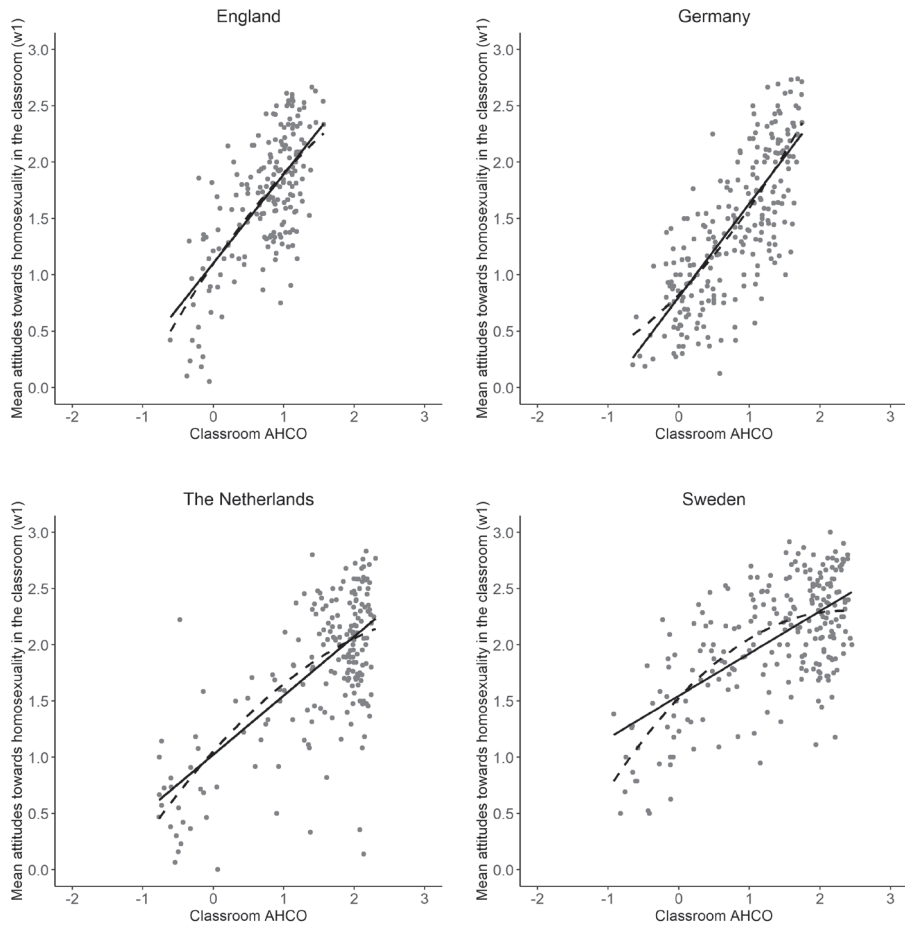


Figure A.4.2: Mean attitudes towards homosexuality in the classroom at wave 1 by classroom AHCO. Separate graph per survey country. Note: Only classrooms with more than 5 students with non-missing values for both wave 1 and wave 3 ($N_{\text{classrooms}} = 692$).

A.5 Latent change score model for students in secondary education at wave 1 and 3

Table A.5.1: Multilevel latent change score model (fixed effects only – Model 1) for students who attended secondary education at wave 1 and wave 3.

Model 1																
England			Germany			The Netherlands			Sweden							
	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3						
Fixed part																
Constant	2.19***	(.06)	.32***	(.06)	2.13***	(.09)	.37***	(.09)	2.45***	(.07)	.16**	(.06)	2.63***	(.07)	.15*	(.07)
<i>Level 1</i>																
Attitude wave 1																
Share co-ethnics																
Student AHCO	-.10	(.14)	-.15	(.15)	.14	(.23)	-.01	(.18)	-.54	(.32)	-.08	(.21)	-.72**	(.23)	-.13	(.19)
Student AHCO distance	.24***	(.05)	.02	(.04)	.29***	(.07)	.17**	(.06)	.21**	(.07)	.16**	(.06)	.21***	(.04)	.03	(.03)
Minority non-Muslim	-.01	(.06)	-.11	(.06)	.10	(.08)	-.01	(.06)	-.13	(.08)	.07	(.07)	-.04	(.05)	.02	(.04)
Minority Muslim	-.20	(.11)	-.20	(.12)	.05	(.19)	.01	(.15)	-.24	(.26)	.05	(.19)	-.33	(.17)	-.11	(.15)
Male	-.76***	(.14)	-.70***	(.13)	-.62**	(.19)	-.30	(.17)	-.72*	(.28)	-.22	(.22)	-.53**	(.18)	-.40*	(.16)
<i>Level 2</i>																
Classroom AHCO	-.68***	(.06)	-.01	(.04)	-.61***	(.05)	-.17***	(.04)	-.71***	(.06)	-.21***	(.05)	-.70***	(.05)	-.15***	(.03)
Random part																
Classroom AHCO	.33***	(.09)	.06	(.09)	.20*	(.08)	-.08	(.07)	.17	(.09)	-.02	(.06)	.21***	(.05)	.00	(.04)
Fit statistics																
Parameter <i>df</i>																
Deviance	38948	88														
AIC	39125															
n_{students}	2,022				1,722				1,328							2,481
$n_{\text{classrooms}}$	176				223				151							238

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table A.5.2: Multilevel latent change score model (including cross-level interactions – Model 2) for students who attended secondary education at wave 1 and wave 3.

	Model 2															
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3			
Fixed part																
Constant	2.23***	(.08)	.30***	(.06)	2.13***	(.10)	.38***	(.11)	2.44***	(.11)	.14	(.11)	2.65***	(.07)	.15*	(.07)
<i>Level 1</i>																
Attitude wave 1			-53***	(.02)			-56***	(.03)			-56***	(.06)			-53***	(.02)
Share co-ethnics	-.12	(.24)	.01	(.17)	-.20	(.27)	.09	(.21)	-.13	(.70)	-.01	(.86)	-.64*	(.30)	-.03	(.24)
Student AHCO	.24***	(.05)	.02	(.04)	.31***	(.08)	.17*	(.07)	.20*	(.09)	.18	(.11)	.23***	(.04)	.05	(.03)
Student AHCO distance	.02	(.07)	-.14*	(.06)	.15	(.11)	-.04	(.08)	-.17	(.14)	.12	(.10)	-.01	(.06)	.02	(.04)
Minority non-Muslim	-.23	(.16)	-.14	(.13)	-.08	(.17)	.01	(.17)	.02	(.53)	.14	(.60)	-.33	(.19)	-.08	(.14)
Minority Muslim	-.88***	(.20)	-.56***	(.16)	-.77***	(.19)	-.31	(.20)	-.43	(.56)	-.12	(.92)	-.57*	(.23)	-.31	(.18)
Male	-.69***	(.06)	-.01	(.04)	-.60***	(.06)	-.16***	(.04)	-.71***	(.06)	-.21**	(.06)	-.70***	(.05)	-.16***	(.03)
<i>Level 2</i>																
Classroom AHCO	.35	(.20)	-.11	(.16)	.53**	(.18)	-.29	(.18)	-.07	(.28)	.18	(.51)	.21	(.14)	-.05	(.11)
* Share co-ethnics	-.15	(.49)	.00	(.28)	-.56	(.29)	-.20	(.24)	.02	(.40)	-.11	(.24)	-.10	(.19)	-.03	(.18)
* Student AHCO distance	.14	(.16)	.02	(.13)	-.18	(.12)	.05	(.10)	-.08	(.14)	.04	(.21)	.09	(.06)	.07	(.05)
* Minority non-Muslim	.02	(.32)	.23	(.21)	-.52	(.28)	.02	(.23)	.33	(.47)	-.16	(.74)	-.02	(.19)	.05	(.14)
* Minority Muslim	-.21	(.30)	.35	(.25)	-.60*	(.30)	.05	(.25)	-.33	(.47)	-.12	(.71)	-.10	(.23)	.11	(.15)
Random part																
Var(students)	1.06	(.04)	.63	(.03)	.96	(.04)	.57	(.04)	.69	(.05)	.41	(.04)	.86	(.04)	.54	(.03)
Var(classrooms)	.04	(.05)	.02	(.02)	.04	(.06)	.02	(.08)	.15	(.16)	.02	(.04)	.03	(.03)	.02	(.03)
Fit statistics																
Parameter	df															
Deviance	38689	184														
AIC	39057															
n_{students}	2,022	1,722		1,328		2,481										
$n_{\text{classrooms}}$	176	223		151		238										

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses. A.6 Time between wave 1 and wave 3

A.6 Time between wave 1 and wave 3

Table A.6.1: Average time (in months) between wave 1 and wave 3 for all countries.

	<i>M</i>	<i>SD</i>	<i>Range</i>
England	25.4	2.4	20-31
Germany	26.0	2.1	20-34
The Netherlands	24.9	1.9	20-30
Sweden	27.6	1.4	22-32
Countries combined	26.0	2.2	20-34

A.7 Latent change score model using country of origin and education of father or mother

Table A.7.1: Multilevel latent change score model (fixed effects only – Model 1) using only the country of origin and education level of the father.

	Model 1															
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3						
Fixed part																
Constant	2.18**	(.04)	.30**	(.04)	2.03***	(.05)	.44***	(.06)	2.43***	(.05)	.22***	(.05)	2.59***	(.06)	.16**	(.06)
<i>Level 1</i>																
Attitude wave 1																
Share co-ethnics																
Student AHCO	-.15	(.10)	-.11	(.12)	.06	(.11)	-.11	(.10)	-.46*	(.18)	.01	(.17)	-.65***	(.17)	-.07	(.14)
Student AHCO distance	.21***	(.03)	.04	(.03)	.12***	(.03)	.07**	(.03)	.11**	(.03)	.06	(.03)	.17***	(.03)	.07*	(.03)
Minority non-Muslim	-.08	(.05)	-.05	(.05)	-.01	(.04)	-.06	(.04)	-.05	(.04)	.02	(.04)	-.02	(.03)	.02	(.03)
Minority Muslim	-.23**	(.08)	-.13	(.09)	-.18*	(.08)	-.15	(.08)	-.46**	(.15)	-.06	(.13)	-.35**	(.13)	-.07	(.10)
Male	-.71***	(.09)	-.51***	(.09)	-.70***	(.09)	-.48***	(.08)	-1.14***	(.16)	-.41**	(.13)	-.67***	(.13)	-.34**	(.11)
<i>Level 2</i>																
Classroom AHCO	-.77***	(.04)	-.09*	(.04)	-.77***	(.04)	-.20***	(.04)	-.84***	(.04)	-.25***	(.04)	-.80***	(.04)	-.17***	(.04)
Classroom AHCO	.32***	(.07)	.04	(.06)	.32***	(.04)	-.08	(.04)	.16***	(.04)	-.02	(.04)	.22***	(.04)	-.04	(.03)
Random part																
Var(students)	1.09	(.03)	.67	(.02)	1.05	(.02)	.70	(.02)	.87	(.03)	.57	(.02)	1.01	(.03)	.62	(.02)
Var(classrooms)	.07	(.01)	.04	(.01)	.09	(.01)	.03	(.01)	.12	(.03)	.04	(.01)	.09	(.01)	.05	(.01)
Fit statistics	Parameter	<i>df</i>														
Deviance	95961	88														
AIC	96137															
n_{students}	4,180		4,788						4,176					4,914		
$n_{\text{classroom}}$	192		239						198					238		

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table A.7.2: Multilevel latent change score model (including cross-level interactions – Model 2) using only the country of origin and education level of the father.

	Model 2															
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3			
Fixed part																
Constant	2.20***	(.05)	.29***	(.04)	2.06***	(.06)	.42***	(.05)	2.52***	(.07)	.16**	(.06)	2.64***	(.06)	.13*	(.06)
Level 1																
Attitude wave 1			-53***	(.02)			-55***	(.02)					-56***	(.02)		
Share co-ethnics	-.02	(.16)	-.02	(.17)	-.29	(.15)	-.08	(.13)	-.77**	(.29)	.28	(.21)	-.74**	(.25)	.08	(.17)
Student AHCO	.23***	(.03)	.03	(.03)	.14***	(.03)	.09**	(.03)	.09*	(.04)	.06	(.04)	.19***	(.03)	.07**	(.03)
Student AHCO distance	-.08	(.05)	-.06	(.05)	.09*	(.04)	-.04	(.04)	-.03	(.05)	.01	(.05)	-.01	(.04)	.01	(.03)
Minority non-Muslim	-.16	(.12)	-.07	(.13)	-.34**	(.10)	-.13	(.09)	-.72**	(.22)	.11	(.15)	-.43**	(.16)	.00	(.10)
Minority Muslim	-.67***	(.14)	-.45**	(.14)	-.98***	(.11)	-.47***	(.10)	-1.55***	(.26)	-.24	(.19)	-.74***	(.17)	-.24	(.12)
Male	-.78***	(.04)	-.09*	(.04)	-.78***	(.04)	-.20***	(.03)	-.85***	(.04)	-.25***	(.04)	-.80***	(.04)	-.17***	(.04)
Level 2																
Classroom AHCO	.18	(.11)	.03	(.11)	.59***	(.08)	-.22**	(.08)	.27*	(.12)	-.21*	(.11)	.25*	(.11)	-.13	(.08)
* Share co-ethnics	-.14	(.23)	-.02	(.20)	-.15	(.15)	-.02	(.15)	-.44**	(.16)	.01	(.15)	-.10	(.15)	-.03	(.13)
* Student AHCO distance	.15	(.11)	-.02	(.09)	.02	(.07)	.09	(.06)	-.03	(.04)	.02	(.05)	.07	(.04)	.02	(.04)
* Minority non-Muslim	.18	(.19)	.12	(.17)	-.29*	(.13)	-.02	(.12)	-.20	(.18)	.18	(.15)	-.07	(.15)	.06	(.10)
* Minority Muslim	.09	(.18)	.12	(.16)	-.65***	(.13)	-.03	(.13)	-.37	(.19)	.18	(.16)	-.08	(.17)	.12	(.12)
Random part																
Var(students)	1.08	(.03)	.66	(.02)	1.03	(.02)	.69	(.02)	.85	(.03)	.56	(.02)	.99	(.03)	.61	(.02)
Var(classrooms)	.06	(.02)	.03	(.01)	.10	(.02)	.02	(.02)	.12	(.03)	.03	(.02)	.08	(.02)	.04	(.02)
Fit statistics																
Parameter	df															
Deviance	95746	144														
AIC	96114															
n_{students}	4,180	4,788														
$n_{\text{classroom}}$	192	239														
		4,176														
		198														
		4,914														
		238														

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table A.7.3: Multilevel latent change score model (fixed effects only – Model 1) using only the country of origin and education level of the mother.

	Model 1														
	England			Germany			The Netherlands			Sweden					
	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3					
Fixed part															
Constant	2.20***	.29***	(.04)	2.00***	(.05)	.47***	(.06)	2.42***	(.05)	.21***	(.05)	2.60***	(.06)	.19**	(.06)
<i>Level 1</i>															
Attitude wave 1															
Share co-ethnics	-.16	-.53***	(.10)	.01	(.12)	-.10	(.10)	-.52**	(.17)	.04	(.15)	-.71***	(.17)	-.10	(.13)
Student AHCO	.19***	.04	(.03)	.17***	(.03)	.05	(.03)	.12***	(.03)	.08**	(.03)	.18***	(.03)	.04	(.02)
Student AHCO distance	-.08	-.05	(.04)	-.06	(.04)	-.05	(.04)	-.09*	(.04)	.03	(.04)	-.06	(.03)	.01	(.03)
Minority non-Muslim	-.28**	-.13	(.08)	-.15	(.09)	-.17*	(.08)	-.46**	(.14)	-.02	(.12)	-.37**	(.12)	-.13	(.09)
Minority Muslim	-.77***	-.50***	(.09)	-.61***	(.10)	-.51***	(.09)	-.11***	(.13)	-.37**	(.12)	-.67***	(.12)	-.42***	(.10)
Male	-.77***	-.09*	(.04)	-.78***	(.04)	-.20***	(.04)	-.84***	(.04)	-.25***	(.04)	-.80***	(.04)	-.17***	(.04)
<i>Level 2</i>															
Classroom AHCO	.34***	.03	(.07)	.34***	(.05)	-.07	(.05)	.17***	(.04)	-.03	(.04)	.21***	(.04)	-.03	(.03)
Random part															
Var(students)	1.10	.67	(.03)	1.04	(.02)	.71	(.02)	.86	(.03)	.57	(.02)	1.01	(.03)	.62	(.02)
Var(classrooms)	.06	.04	(.01)	.09	(.01)	.03	(.01)	.13	(.03)	.04	(.01)	.09	(.01)	.05	(.01)
Fit statistics	Parameter	df													
Deviance	95908	88													
AIC	96084														
n_{students}	4,180	4,788						4,176						4,914	
$n_{\text{classrooms}}$	192	239						198						238	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table A.7.4: Multilevel latent change score model (including cross-level interactions – Model 2) using only the country of origin and education level of the mother.

Model 2																
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3						
Fixed part																
Constant	2.22***	(.05)	.27***	(.05)	2.02***	(.06)	.46***	(.06)	2.48***	(.06)	.15*	(.06)	2.62***	(.06)	.17**	(.06)
<i>Level 1</i>																
Attitude wave 1																
Share co-ethnics																
Student AHCO	-.07	(.16)	-.04	(.17)	-.27	(.15)	-.11	(.12)	-.32	(.29)	.33	(.22)	-.73**	(.25)	.10	(.18)
Student AHCO distance	.20***	(.03)	.04	(.03)	.16***	(.03)	.06*	(.04)	.13**	(.04)	.09**	(.04)	.21***	(.03)	.05	(.02)
Minority non-Muslim	-.07	(.04)	-.06	(.04)	.01	(.05)	-.03	(.04)	-.08	(.05)	.04	(.04)	-.03	(.03)	.01	(.03)
Minority Muslim	-.23*	(.11)	-.07	(.13)	-.27**	(.10)	-.18*	(.09)	-.38	(.21)	.18	(.16)	-.40**	(.15)	-.04	(.10)
Male	-.74***	(.14)	-.43**	(.14)	-.85***	(.11)	-.54***	(.11)	-1.10***	(.24)	-.18	(.19)	-.72***	(.17)	-.31*	(.12)
<i>Level 2</i>																
Classroom AHCO	-.78***	(.04)	-.09*	(.04)	-.78***	(.04)	-.20***	(.03)	-.85***	(.04)	-.25***	(.04)	-.80***	(.04)	-.17***	(.04)
Classroom AHCO	.25*	(.12)	.02	(.11)	-.56***	(.09)	-.17	(.09)	.02	(.12)	-.06	(.11)	.23*	(.11)	-.12	(.08)
* Share co-ethnics	-.11	(.21)	.08	(.22)	-.16	(.16)	.00	(.14)	-.26	(.17)	.07	(.14)	-.02	(.15)	-.01	(.12)
* Student AHCO distance	.15	(.10)	-.01	(.09)	-.08	(.07)	.06	(.06)	.06	(.05)	.03	(.05)	.10*	(.04)	.02	(.04)
* Minority non-Muslim	.14	(.19)	.11	(.17)	-.21	(.14)	-.02	(.12)	.14	(.19)	.19	(.14)	-.02	(.15)	.09	(.09)
* Minority Muslim	.02	(.20)	.13	(.19)	-.55***	(.14)	-.07	(.12)	.04	(.19)	.16	(.14)	-.06	(.16)	.12	(.11)
Random part																
Var(students)	1.09	(.03)	.66	(.02)	1.02	(.02)	.69	(.02)	.85	(.03)	.56	(.02)	.99	(.03)	.61	(.02)
Var(classrooms)	.06	(.02)	.03	(.01)	.10	(.02)	.02	(.02)	.13	(.03)	.03	(.02)	.08	(.02)	.04	(.02)
Fit statistics	Parameter	<i>df</i>														
Deviance	95705	184														
AIC	96073															
$n_{students}$	4,180		4,788		4,176		4,914		4,176		4,914		4,914		4,914	
$n_{classrooms}$	192		239		198		238		198		238		238		238	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

A.8 Latent change score model removing students of mixed ethnic origin

Table A.8.1: Multilevel latent change score model (fixed effects only – Model 1) excluding students of mixed ethnic origin.

	Model 1															
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1	W1-W3	W1	W1-W3			
Fixed part																
Constant	2.17***	(.04)	.32***	(.04)	2.05***	(.07)	.39***	(.08)	2.39***	(.06)	.20**	(.06)	2.54***	(.07)	.17*	(.07)
<i>Level 1</i>																
Attitude wave 1																
Share co-ethnics	-.13	(.14)	-.12	(.15)	.03	(.15)	-.14	(.14)	-.35	(.24)	.13	(.20)	-.72**	(.22)	-.17	(.17)
Student AHCO	.30***	(.05)	.05	(.04)	.11	(.07)	.13*	(.06)	.16*	(.07)	.15*	(.07)	.23***	(.05)	.11**	(.04)
Student AHCO distance	-.10	(.06)	-.07	(.06)	-.04	(.06)	-.05	(.05)	-.03	(.07)	.06	(.06)	-.04	(.05)	.00	(.04)
Minority non-Muslim	-.23	(.13)	-.13	(.13)	-.35*	(.16)	-.07	(.17)	-.57*	(.23)	.11	(.22)	-.39*	(.20)	.03	(.13)
Minority Muslim	-.57***	(.13)	-.47***	(.13)	-.71***	(.18)	-.33	(.17)	-1.01***	(.26)	-.17	(.23)	-.53**	(.19)	-.24	(.13)
Male	-.77***	(.04)	-.11*	(.04)	-.78***	(.04)	-.21***	(.04)	-.85***	(.04)	-.27***	(.04)	-.81***	(.04)	-.18***	(.04)
<i>Level 2</i>																
Classroom AHCO	.27***	(.08)	.06	(.08)	.36***	(.06)	-.07	(.06)	.09	(.05)	-.02	(.05)	.22***	(.05)	-.02	(.04)
Random part																
Var(students)	1.06	(.03)	.66	(.02)	1.03	(.03)	.69	(.02)	.85	(.03)	.57	(.02)	.98	(.03)	.60	(.02)
Var(classrooms)	.06	(.01)	.04	(.01)	.09	(.02)	.03	(.01)	.12	(.03)	.04	(.01)	.09	(.01)	.05	(.01)
Fit statistics																
Parameter	df															
Deviance	79019	88														
AIC	79195															
n_{students}	3,369	3,985		3,663		3,977										
$n_{\text{classrooms}}$	192	239		198		238										

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table A.8.2: Multilevel latent change score model (including cross-level interactions – Model 2) excluding students of mixed ethnic origin.

	Model 2															
	England			Germany			The Netherlands			Sweden						
	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3	W1	W1-W3				
Fixed part																
Constant	2.20***	(.06)	.30***	(.05)	2.05***	(.08)	.39***	(.07)	2.44***	(.07)	.17**	(.07)	2.61***	(.07)	.15*	(.06)
<i>Level 1</i>																
Attitude wave 1																
Share co-ethnics	-10	(.35)	-.53***	(.02)	-13	(.20)	-.56***	(.02)	-7.6*	(.17)	.04	(.27)	-.66*	(.28)	-.54***	(.02)
Student AHCO	.32**	(.10)	.06	(.04)	.12	(.07)	.14**	(.06)	.19**	(.06)	.16*	(.06)	.23***	(.05)	.12**	(.04)
Student AHCO distance	-.13	(.07)	-.10	(.06)	.04	(.08)	-.04	(.07)	-.05	(.08)	.05	(.07)	-.04	(.06)	-.03	(.04)
Minority non-Muslim	-.18	(.28)	-.03	(.17)	-.40*	(.17)	-.06	(.16)	-.67*	(.31)	.09	(.24)	-.42	(.24)	.09	(.14)
Minority Muslim	-.46	(.68)	-.33	(.20)	-.88***	(.19)	-.27	(.18)	-1.25***	(.35)	-.18	(.27)	-.58*	(.24)	-.09	(.16)
Male	-.78***	(.05)	-.11*	(.04)	-.78***	(.04)	-.21***	(.04)	-.85***	(.04)	-.27***	(.04)	-.82***	(.04)	-.18***	(.04)
<i>Level 2</i>																
Classroom AHCO	.17	(.29)	.01	(.16)	.54***	(.13)	-.17	(.12)	.17	(.13)	-.04	(.13)	.16	(.12)	-.09	(.10)
* Share co-ethnics	-.21	(.27)	.01	(.26)	-.14	(.22)	-.08	(.21)	-.42*	(.19)	-.06	(.17)	-.19	(.19)	-.03	(.14)
* Student AHCO distance	.10	(.20)	.01	(.12)	-.02	(.10)	.03	(.09)	-.02	(.06)	-.01	(.06)	.08	(.05)	.03	(.05)
* Minority non-Muslim	.08	(.29)	.19	(.21)	-.17	(.21)	-.08	(.18)	-.13	(.23)	-.04	(.20)	.04	(.19)	.08	(.12)
* Minority Muslim	.13	(.46)	.24	(.23)	-.48*	(.22)	.06	(.19)	-.30	(.23)	-.04	(.19)	-.02	(.21)	.18	(.13)
Random part																
Var(students)	1.05	(.08)	.64	(.02)	1.01	(.03)	.66	(.02)	.84	(.03)	.56	(.02)	.95	(.03)	.59	(.02)
Var(classrooms)	.06	(.02)	.04	(.02)	.10	(.02)	.02	(.02)	.12	(.03)	.03	(.02)	.08	(.02)	.03	(.02)
Fit statistics																
Parameter <i>df</i>	78812	184														
Deviance	79181															
AIC	3,369	3,985	3,663	3,977												
$n_{students}$	192	239	198	238												
$n_{classrooms}$																

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

A.9 Multilevel multinomial regression to predict response probabilities

Table A.9.1: Multilevel multinomial regression to predict the probabilities of each response for attitudes towards homosexuality at wave 1 (relative to 'never ok'). All countries combined.

	'Sometimes ok'		'Often ok'		'Always ok'	
Constant	1.25***	(.06)	1.70***	(.08)	2.05***	(.09)
<i>Level 1</i>						
Student AHCO	.28***	(.05)	.39***	(.05)	.52***	(.05)
Male	-.72***	(.05)	-1.29***	(.06)	-2.07***	(.06)
Share co-ethnics	-.75***	(.20)	-.71**	(.22)	-.99***	(.23)
Student AHCO distance	.07	(.06)	.06	(.06)	-.11	(.06)
Minority non-Muslim	-.34*	(.15)	-.30	(.16)	-.66***	(.17)
Minority Muslim	-.50**	(.17)	-.57**	(.19)	-1.70***	(.19)
<i>Level 2</i>						
Classroom AHCO	.18**	(.05)	.33***	(.06)	.64***	(.06)
Fit statistics	Parameter			<i>df</i>		
Deviance	40776			24		
AIC	40824					
n_{students}	18,058					
$n_{\text{classrooms}}$	867					

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

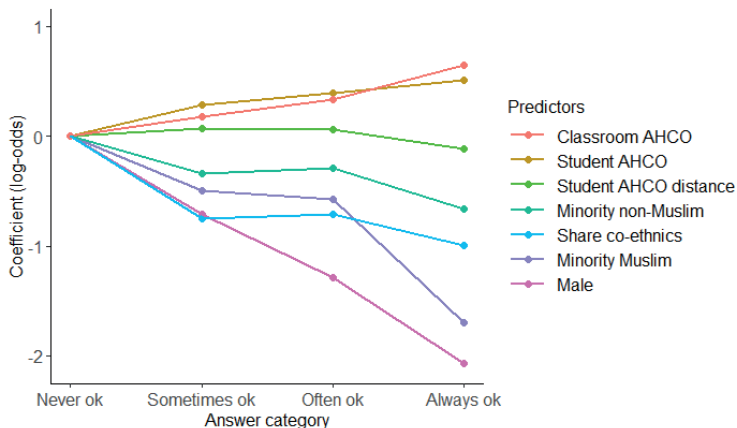


Figure A.9.1: Coefficients of the multilevel multinomial regression model to predict the probabilities of each response for attitudes towards homosexuality at wave 1 (relative to 'never ok'). All countries combined.

A.10 Correlations between sexual liberalization items

Table A.10.1: Correlations between variables measuring attitudes towards sexual liberalization at wave 1.

	Living together, not married	Divorce	Abortion	Homosexuality
Living together, not married	1.00			
Divorce	0.45	1.00		
Abortion	0.41	0.57	1.00	
Homosexuality	0.51	0.43	0.39	1.00

Appendix B

Supplements to Chapter 3

B.1 Online discussions

Article homosexuality

Title Islam and homosexuality go together

Link <https://nos.nl/op3/artikel/2107807-de-islam-en-homoseksualiteit-gaan-samen>

Article abortion

Title Debate on abortion law flares up again, 36 years after its implementation

Link <https://www.rtlnieuws.nl/nieuws/nederland/artikel/5195019/abortuswet-afbreking-zwangerschap-abortus-week-van-het-leven>

Article sex before marriage

Title Is sex before marriage now becoming a criminal offense in Indonesia?

Link <https://www.nrc.nl/nieuws/2020/01/27/wordt-seks-voor-het-huwelijk-nu-straftbaar-in-indonesie-a3988366>

Topic: Homosexuality

Opinion climate: Conservative

Post title

Islam and being gay do not go together

Post text

Acceptance of gays, what nonsense is this! Allah the Exalted created man for woman and woman for man. Just look at what is stated in the Noble Quran about the people of Lut AS.

Comments

- 1 Disgusting. Does the word of Allah mean nothing anymore! Men and men cannot reproduce. Women and women cannot either! *Whallah*, when I hear this, I literally get shivers down my spine.
- 1.1 Exactly! Look, homosexuality is forbidden in ISLAM because you cannot reproduce. What many people say is that you have to keep your feelings for the same sex under control.
- 2 I also think that these feelings are from the cursed *shaytaan*. *Inscha Allah*, those who have these feelings can suppress them and be in control.
- 3 I agree with you. Homosexuality is a disease, a trial, and the person in question must do everything to resist it. Yes, even get married and live normally.
- 3.1 Yes, it is a disease. And it is reprehensible and forbidden in Islam. And punishable.
- 3.1.1 That's right, bumming is *Haram* and a crime in Islam... Allah cc sent Prophet Lut as a warner to the people of Sodom for this crime.
- 4 Being GAY is just pure *HARAMMMMM*, I mean *ALLAH SUBHANA WATAALA* did not put two different people on earth for nothing: If I see a gay person, I spit on them!

Topic: Homosexuality

Opinion climate: Mixed

Post title

I do not know if homosexuality and Islam go together

Post text

I find homosexuality a very difficult topic to look at. Allah SWT has placed people with these feelings on earth, but at the same time, others say that homosexuality is prohibited in Islam because you cannot reproduce.

Comments

- 1 I think that these feelings are from the cursed *shaytaan*. *Inscha Allah*, those who have these feelings can suppress them and be in control.
- 2 Islam is peaceful, who are we to judge them, leave that to Allah.
- 2.1 Islam is definitely peaceful. But if you have to start showing respect for gays, you might as well show respect for *shitan*! I think you should read the Quran on this subject.
 - 2.1.1 You with your *shaytan*, gays and lesbians are born with the feelings they have.
- 3 Most Muslims do not have a good understanding of homosexuality in Islam, and it does not mean that you are a bad Muslim if you have such feelings. You cannot help it and there is nothing wrong with you!
- 3.1 When I read this, I literally shiver. Does the word of Allah mean nothing anymore! Men cannot reproduce with men. Neither can women with women. The idea alone is already ridiculous!!!!!!!!!!!!
- 4 Being GAY is just pure *HARAMMMMM*, I mean *ALLAH SUBHANA WATA'ALA* did not put two different people on earth for nothing: If I see a gay person, I spit on them!
- 4.1 This makes absolutely no sense! People are born with these feelings and that's what people should understand, especially in our culture. The boys and girls who are gay have an incredibly difficult life because they often cannot be who they really are.

Topic: Homosexuality

Opinion climate: Progressive

Post title

Gays deserve more respect

Post text

It is very good to read this! People always have their judgments ready about gays. Allah *SWT* is our judge and not other people. So it's fine that you're gay, every creature is from Allah *SWT*.

Comments

- 1 I agree. Most Muslims do not have a good understanding of homosexuality in Islam, and it does not mean that you are a bad Muslim if you have such feelings. You cannot help it and there is nothing wrong with you!
- 2 I know that there are gays who deeply believe in Allah from their heart and soul but get lost due to negative reactions. Muslims should just help each other find the right path and not judge each other.
- 2.1 I agree, we shouldn't judge others if we don't want to be judged ourselves. Who are we to judge others, let Allah do that.
- 2.1.1 People shouldn't be quick to judge. Gays can repent and stay away from evil and do good deeds. Praying, fasting, and so on. You know the drill. It's shitty that many Muslims are often poorly informed and judge each other.
- 3 I agree with you. Even if someone is gay, they are still the same person so you should treat them the same way.
- 3.1 Yes, if that's really what he feels, we should just respect him.

Topic: Abortion

Opinion climate: Conservative

Post title

Abortion is murder

Post text

It's good that this discussion is taking place! I don't understand why so many people have abortions!! Having a child is the most beautiful thing there is, and if you have it removed, it means you go against the wishes of Islam. You are killing it, it gives me the shivers.

Comments

- 1 I don't understand either. In Islam, abortion is not permitted in principle. An exception is only made if there is a danger to the mother's life or if the pregnancy is the result of rape. Allah knows best.
- 1.1 That's right. It is all *nasib* (written) in Islam. Allah has blessed you with a child, and if you are a mother, heaven lies beneath your feet. I dream of such happiness for myself and my wife.
- 2 We are Muslims, so we trust in Allah. He will take care of you and your child, and everything will always turn out well, as long as you follow the path of Islam and trust in Allah. If you have an abortion, you are essentially giving up your trust in Allah.
- 3 I would never do that! It is a living being in your stomach, how can you kill it? It is something that Allah has given you, so be happy with it. *Hayir insha Allah.*
- 3.1 I would also never do it! Even if I am not ready for it yet, I would still keep the child.
- 4 Abortion should not be allowed. It is a gift if you can have children. How can you kill a child when you have been given this favor from *Allah Subhana wa Taala*?

Topic: Abortion

Opinion climate: Mixed

Post title

Muslims who have an abortion

Post text

There is a discussion in the Netherlands again about allowing abortions or not. What is the deal with Islam and abortions? I know that there are Islamic rules regarding having an abortion, and as far as I know/heard, it is allowed in some cases and therefore not a sin.

Comments

- 1 Abortion is generally not allowed in Islam. An exception is only made if there is a danger to the mother's life or if the pregnancy is the result of rape. Allah knows best.
- 1.1 This is not true! Only if it happens AFTER 120 days is it considered killing a human being. This is because the Prophet (peace be upon him) has told us that after 120 days, the soul is blown into the body of a fetus, as mentioned in *al-Boechari en Moeslim*.
- 1.1.1 That's right, it depends on when the abortion is performed. If you have an abortion within a certain time frame, it is allowed because it is not yet a child in your womb, so you are not committing murder.
- 1.1.2 If Allah has blessed you with a child, how can you then kill it? It is something that Allah has given you, so be happy with it. *Hayir insba Allah*.
- 2 Abortion is never a choice people make gladly, but sometimes there is no other option. And as long as it is done according to the rules, I think it should be allowed.
- 2.1 It can be different! We are Muslims, so we trust in Allah. He will take care of you and your child, and everything will always turn out well, as long as you follow the path of Islam and trust in Allah. If you have an abortion, you are essentially giving up your trust in Allah.
- 3 It is a child in your womb, how can you kill it? I couldn't do that.. and Allah *swt* has given you a gift, and as thanks you kill the child.
- 3.1 Personally, I don't think I could have an abortion, but I am NOT against it. If it's allowed in Islam, why not?

Topic: Abortion

Opinion climate: Progressive

Post title

Abortion should be allowed under certain circumstances

Post text

I often hear Muslims say that abortion is never okay, but that's not true! Only if it happens AFTER one hundred and twenty days is it considered killing a human being. This is because the Prophet (peace be upon him) has told us that after one hundred and twenty days, the soul is blown into the body of a fetus, as mentioned in *al-Boechari en Moeslim*.

Comments

- 1 Correct, it depends, if you have an abortion within a certain time frame, it is allowed because it is not yet a child in your womb, so you are not committing murder.
- 2 In Islam, it is true that the baby gets a soul after 120 days. After 120 days, it is prohibited in Islam unless the child poses a direct threat to the mother. So, it is always okay before 120 days!
- 2.1 It is typical that many Muslims immediately assume it is murder, but they do not know how, what, where, and when.
- 2.2 *Allahu Alim!*
- 3 Abortion is never a choice people make gladly, but sometimes there is no other option. And as long as it is within the 120 days, I think it should be allowed.
- 3.1 Saying that abortion equals murder is often just nonsense. How can you murder something that according to Islam, does not yet have a soul...? I don't get it...

Topic: Sex before marriage

Opinion climate: Conservative

Post title

I will be a virgin until I get married!

Post text

No sex before marriage, that's how it should be. It brings nothing good with it! It's haram, you give people a reason to gossip about you, you disappoint your parents, and it also brings diseases with it.

Comments

- 1 I agree too! I think that chastity is a beautiful thing. Isn't it wonderful to wait to make love until you find the person willing to share their life with you? I would never forgive myself if I shared a bed with someone before I was married.
- 2 I agree. If you follow the guidelines of our faith, you'd know that you shouldn't have intercourse BEFORE marriage.
- 2.1 Yes, premarital intercourse is widely known as a major sin; every Muslim knows this. It's basic knowledge.
- 3 A wise man wouldn't marry a woman who has easily given away her honor.
- 4 Virgin until marriage!!!! I would absolutely not appreciate if my virginity was just taken by someone. I want to save it for my future husband, inshAllah!
- 4.1 I also refrain because I can't live with such a sin in regard to Allah. I fear the punishment that could be imposed on me for it.
- 5 Girls who are no longer virgins have no value. No one wants them. They are ruined and have no place in society. The only career they can build is in prostitution.
- 5.1 Indeed, and I don't want any filthy rotten fish that's already been bought and dumped in a garbage dump. Stomped on and found by a cat.

Topic: Sex before marriage

Opinion climate: Mixed

Post title

Is sex before marriage ok or not

Post text

In Indonesia, they want to ban premarital sex. I always hear that in Islam both people should be virgins when they marry, but in countries like Morocco or Turkey, there are plenty of women who have sex before marriage. Is this okay or not? I don't know.

Comments

- 1 *Astagfirullah*, how dare you ask something like that? This is not part of our faith !!! The Day of Judgment is upon us...
- 1.1 Pfft, people are often so narrow-minded. Do they think they're better than our prophet who also married a woman who was not a virgin? Get real!
- 1.1.1 I'm disgusted by people like you. You talk about it as if it's the most normal thing in the world... don't pay any more attention to it, *astagfirullah!*
- 2 Right, most of them are not virgins themselves. What does virginity mean these days? If she's honest about her sexual past and you TRULY care about her, it shouldn't be a problem.
- 2.1 What are you saying? It's widely known that premarital intercourse is a major sin; every Muslim knows this. It's basic knowledge.
- 3 What kind of nonsense discussion is this? If you follow the guidelines of our faith, you'd know that you should NOT have intercourse BEFORE marriage.
- 3.1 People make mistakes, feel remorse, and change. Someone who loves you accepts you for who you are. This should be possible, right?
- 4 I want a woman with whom I connect!!! It's a bonus if she's a virgin, but it's just as good if she isn't.

Topic: Sex before marriage

Opinion climate: Progressive

Post title

Virgin or not a virgin is not important

Post text

Instead of worrying about who is a virgin and who isn't, and who is going to marry whom, we should wish everyone happiness and full love. Whether a virgin or not, it's not important as long as you find your loved one!

Comments

- 1 Hmm, in a way, I totally agree with you. Whether a woman is a virgin or not is NONE of anyone's business. Any man who asks about it should actually be ashamed. Pff.
- 1.1 True... Also, he is a righteous person. He first looks at his own mistakes before he rejects someone else.
- 2 People make mistakes, regret them, and change. Someone who loves you accepts you for who you are. This should be possible, right?
- 2.1 A man who truly loves his wife doesn't even look at that. I'm talking about real love here.
- 3 Pfft, people are often so narrow-minded. Do they think they are better than our prophet saw who also married a woman who was not a virgin?
- 4 I agree with you. There are plenty of men who are not virgins themselves. My husband accepts me as I am, or I don't need him.
- 4.1 I think so too! If I'm not a virgin myself, how can I demand that my bride be one? So it doesn't matter at all.
- 5 I want a woman with whom I click!!! And it's a bonus if she's a virgin, but it's just as good if she's not.

B.2 Distribution of comment scores

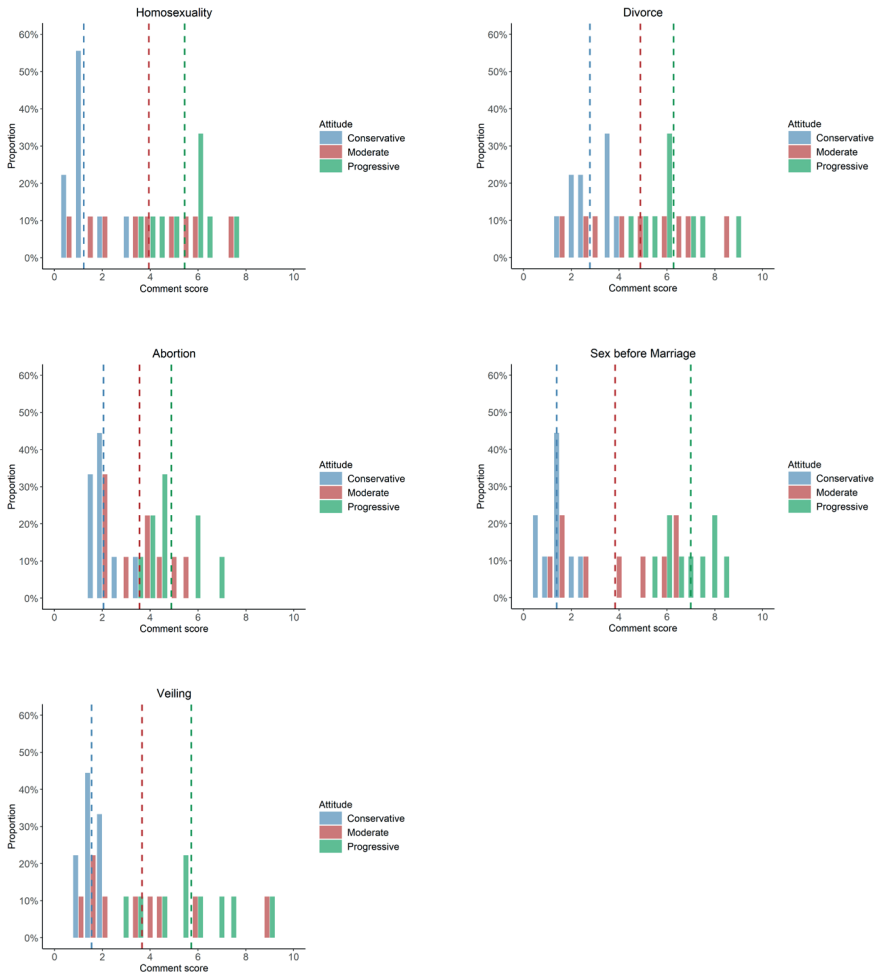


Figure B.2.1: Distribution of comment scores by experimental condition on a scale of 0 (very conservative) to 10 (very progressive). Separate graphs per topic. Dashed lines are the mean scores for the norm conditions.

B.3 Distribution of personal opinions participants

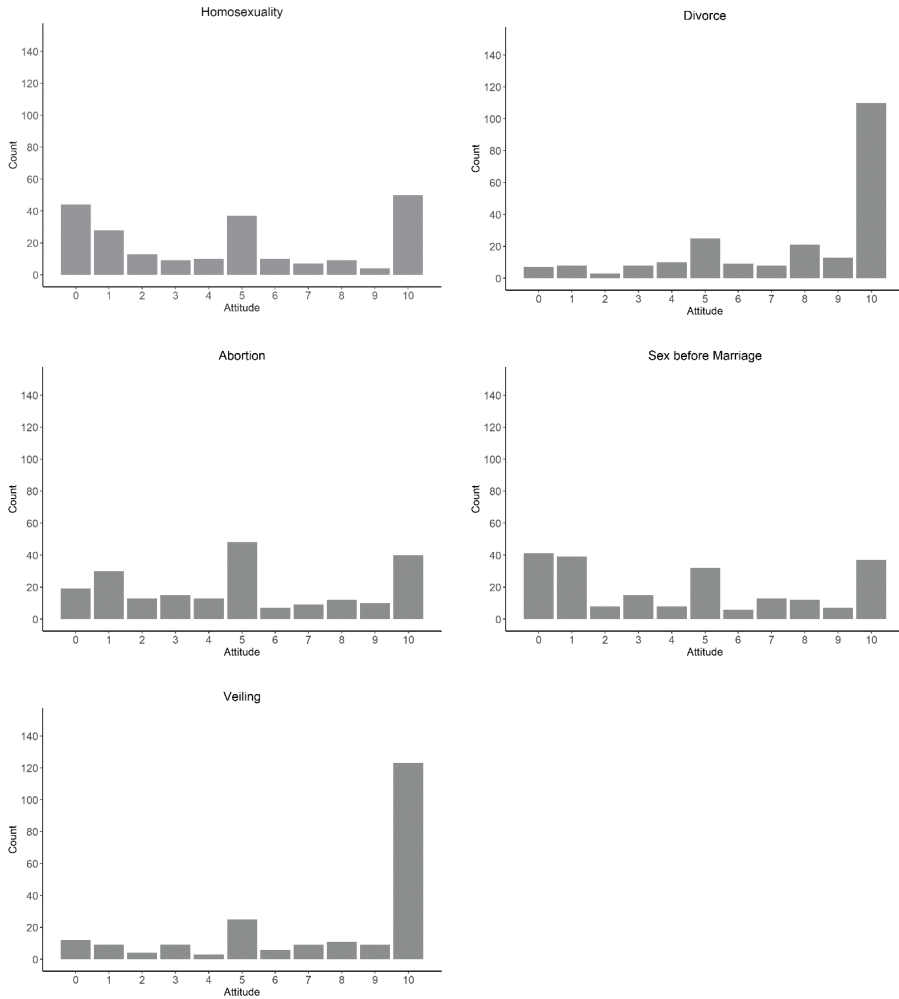


Figure B.3.1: Distribution of personal opinions about each topic on a scale of 0 (always wrong) to 10 (never wrong) ($N_{\text{participants}} = 222$). *Note:* attitudes towards veiling refer to *not* veiling in public.

B.4 Distribution of personal opinions participants over norm conditions

Table B.4.1: Distribution of the personal opinions of participants over the norm conditions

		Norm condition			
		Conservative	Mixed	Progressive	Total
Personal opinion	Conservative	96	92	71	259
	Progressive	67	62	62	191
	Total	163	154	133	450

Note: $n_{\text{congruent}} = 158$, $n_{\text{mixed}} = 154$, $n_{\text{incongruent}} = 138$

B.5 Model to explain opinion expression using (dis)likes

Table B.5.1: Multilevel logistic regression to predict the probability of expressing a personal opinion by posting a (dis)like or a comment on a page.

	Probability (dis)like				Probability comment			
	Model 1		Model 2		Model 1		Model 2	
Fixed part								
Constant	1.92***	(.47)	1.12*	(.53)	-5.68**	(1.80)	-5.82**	(1.94)
<i>Norm congruency</i> (ref = congruent)								
Mixed	-1.55*	(.63)	-1.10	(.74)	-1.70	(1.10)	-2.18	(1.68)
Incongruent	-1.76**	(.59)	-2.42**	(.84)	.51	(.83)	.41	(1.16)
<i>Personal opinion</i> (ref = conservative)								
Progressive			2.36*	(.94)			.68	(1.22)
Mixed norm			-1.54	(1.18)			.76	(2.10)
Incongruent norm			.75	(1.31)			.01	(1.74)
Random part								
Var(discussions)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)
Var(participants)	8.26**	(2.75)	7.45**	(2.58)	31.87	(26.39)	30.43	(27.47)
Fit statistics								
Deviance	515	4	491	7	275	4	273	7
AIC	523		505		283		287	
$N_{\text{discussions}}$	450				450			
$N_{\text{participants}}$	188				188			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

B.6 Probability of opinion expression using (dis)likes

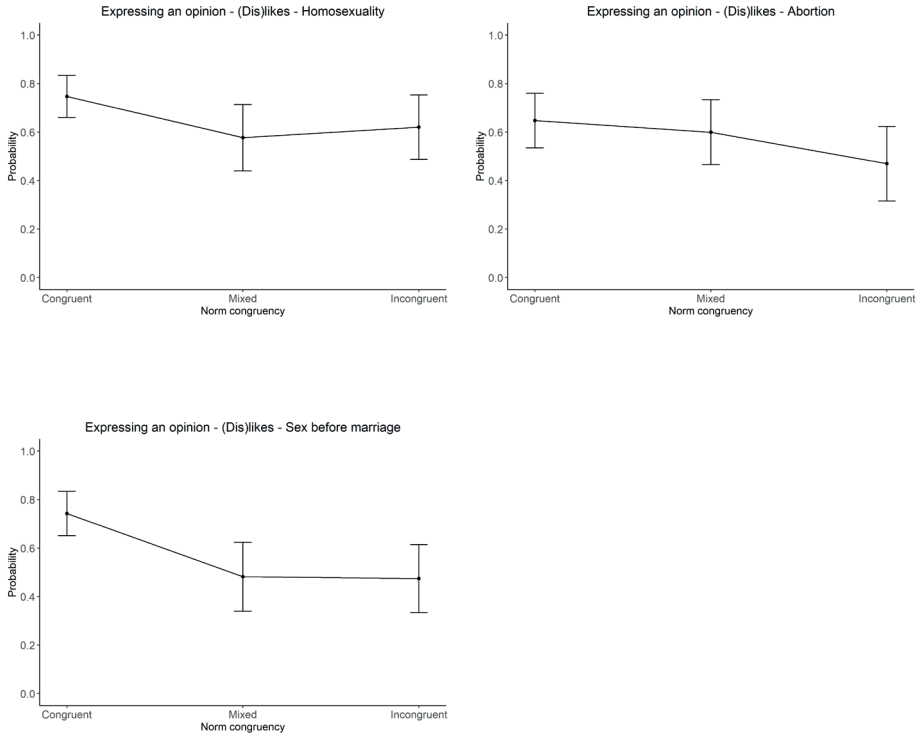


Figure B.6.1: Predicted probability of expressing a personal opinion by posting a (dis)like on a page by norm congruency. Separate graphs per topic. 450 discussions nested in 188 participants.

B.7 Progressiveness of (dis)liked comments

By comparing the probability to which conservative and progressive participants (dis) like comments in each norm condition, we assume that the kind of comments that both groups like is similar. However, it is not necessarily the case. For example, participants with a conservative personal opinion can like the most conservative comment in the incongruent progressive norm condition, and participants with a progressive personal opinion can like the most progressive comment in the incongruent conservative norm condition. This would reduce the validity of our results. Therefore, we compare the scores of the comments that participants with a conservative and progressive personal opinion like and dislike for each topic. In Table B.7.1, we find no significant differences between the scores of comments that these groups like.

Table B.7.1: Comparison of average progressiveness scores of liked comments by participants with conservative and progressive personal opinions in the conservative and progressive norm condition.

	Conservative	Progressive	Difference
Conservative condition			
Homosexuality	1.29	1.33	($t = 0.18$; $p = .858$)
Abortion	2.07	2.19	($t = 1.03$; $p = .305$)
Sex before marriage	1.62	1.63	($t = 0.05$; $p = .959$)
Progressive condition			
Homosexuality	4.98	5.26	($t = 1.64$; $p = .102$)
Abortion	4.67	4.89	($t = 0.54$; $p = .586$)
Sex before marriage	6.93	7.25	($t = 1.79$; $p = .076$)

Note: Comment scores can range from 0 (very conservative) to 10 (very progressive).

In Table B.7.2, we also find no significant difference between the scores of the comments that participants with conservative and progressive personal opinions dislike, apart from one: participants with progressive personal opinions dislike significantly more progressive comments than participants with conservative personal opinions in the discussion on sex before marriage in the conservative norm condition ($t = 3.00$; $p = .003$). Given that this is the only significant difference that we find between participants with a conservative and a progressive personal opinion in the scores of comments that they (dis)like, we can conclude that they (dis)like the same kind of comments.

Table B.7.2: Comparison of average progressiveness scores of disliked comments by participants with a conservative and progressive personal opinion in the conservative and progressive norm condition.

	Conservative	Progressive	Difference
Conservative condition			
Homosexuality	0.90	1.14	($t = 1.78; p = .078$)
Abortion	2.17	1.95	($t = 0.94; p = .346$)
Sex before marriage	0.77	1.14	($t = 3.00; p = .003$)
Progressive condition			
Homosexuality	5.89	5.67	($t = 0.71; p = .482$)
Abortion	5.00	4.85	($t = 0.33; p = .740$)
Sex before marriage	7.45	7.75	($t = 0.62; p = .544$)

Note: Comment scores can range from 0 (very conservative) to 10 (very progressive).

B.8 Model to explain opinion deviation using (dis)likes

Table B.8.1: Multilevel logistic regression to predict the probability of deviating from a personal opinion through posting a (dis)like on a page.

	Probability (dis)like			
	Model 1		Model 2	
Fixed part				
Constant	-1.65***	(.38)	-1.15**	(.43)
<i>Norm condition</i> (ref = congruent)				
Mixed	.65	(.51)	.49	(.60)
Incongruent	1.30**	(.48)	1.44*	(.64)
<i>Personal opinion</i> (ref = conservative)				
Progressive			-1.32	(.72)
* Mixed norm			.55	(.96)
* Incongruent norm			-.03	(1.03)
Random part				
Var(discussions)	3.29***	(.00)	3.29**	(.00)
Var(participants)	4.69**	(1.54)	4.06**	(1.37)
Fit statistics				
	Parameter	<i>df</i>	Parameter	<i>df</i>
Deviance	524	4	515	7
AIC	532		529	
$N_{\text{discussions}}$	450		450	
$N_{\text{participants}}$	188		188	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

B.9 Probability of opinion deviation using (dis)likes

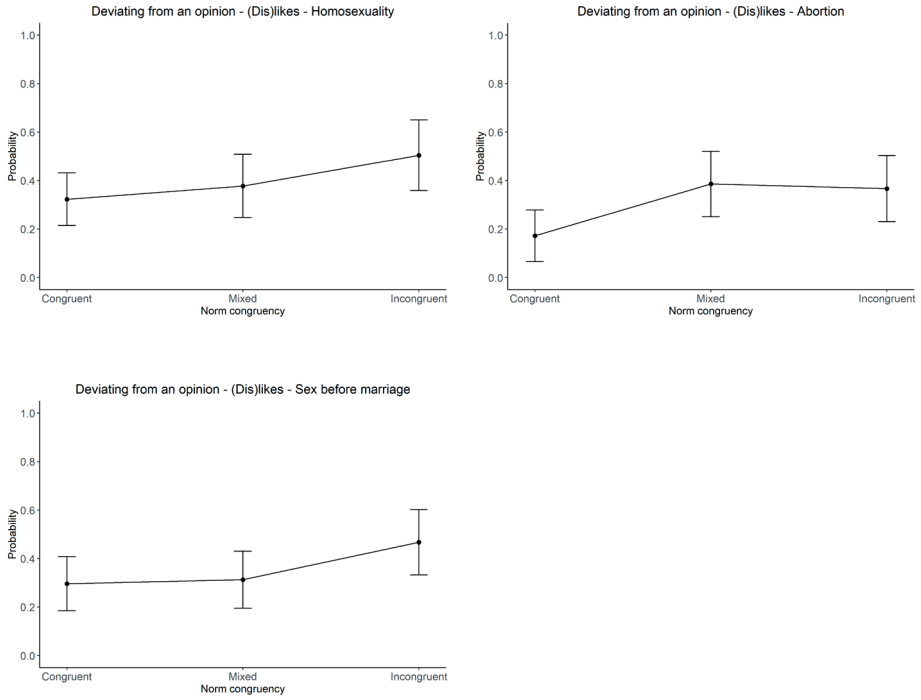


Figure B.9.1: Predicted probability of deviating from a personal opinion by posting a (dis)like by norm congruency. Separate graph per topic. 450 discussions nested in 188 participants.

B.10 Model to explain comment scores

Table B.10.1: Multilevel linear regression to predict the comment scores of participants by attitude and norm condition.

	Comment score			
	Model 1		Model 2	
Fixed part				
Constant	4.17***	(.49)	2.67***	(.53)
<i>Norm congruency</i> (ref = congruent)				
Incongruent	.67	(.64)	1.16	(.77)
<i>Personal opinion</i> (ref = conservative)				
Progressive			3.28***	(.75)
* Incongruent norm			-1.74	(1.10)
Random part				
Var(discussions)	1.61	(.43)	1.59	(.40)
Var(participants)	2.98	(1.06)	1.21	(.57)
Fit statistics				
	Parameter	<i>df</i>	Parameter	<i>df</i>
Deviance	231	4	213	6
AIC	239		225	
N_{comments}	57		57	
$N_{\text{participants}}$	29		29	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

B.11 Probability of (dis)liking (in)congruent comments by personal opinion

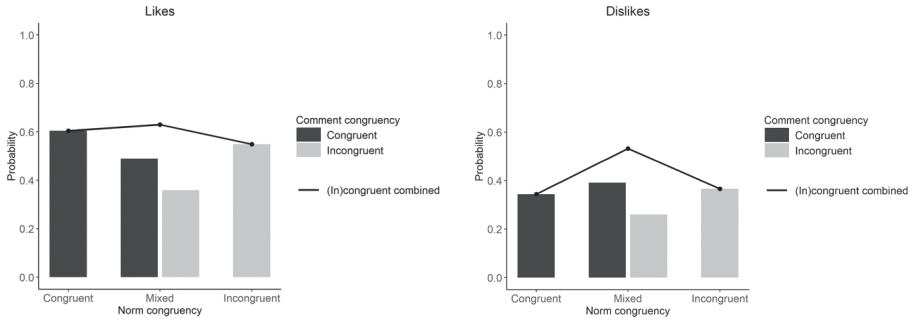


Figure B.11.1: average probability of (a) liking and (b) disliking (in)congruent comments on a page by norm congruency for conservative participants. The line graph shows the average probability of posting a like or a dislike on a page. 450 discussions nested in 188 participants.

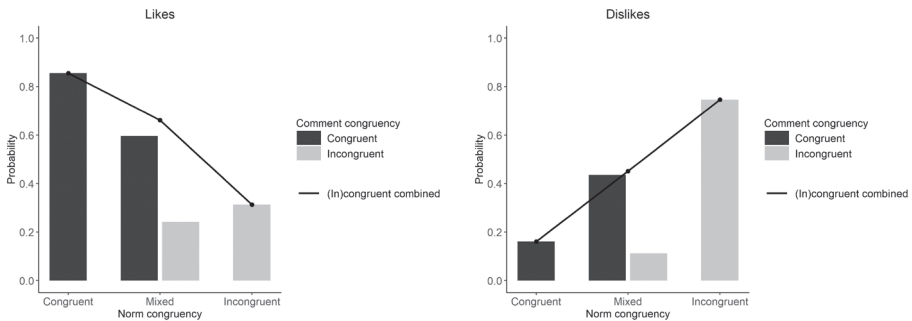


Figure B.11.2: average probability of (a) liking and (b) disliking (in)congruent comments on a page by norm congruency for progressive participants. The line graph shows the average probability of posting a like or a dislike on a page. 450 discussions nested in 188 participants.

B.12 Compositional differences between conservative and progressive participants

Table B.12.1: Compositional differences between conservative and progressive participants.

	Conservative		Progressive		Difference
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Female	69%	-	82%	-	$z = 3.14; p = .002$
Education ^a	4.86	1.17	4.76	1.23	$t = 0.88; p = .378$
Frequency offline discussion ^b	1.34	1.09	1.67	1.04	$t = 3.24; p = .001$
Frequency online discussion ^c	2.38	1.21	2.51	1.14	$t = 1.07; p = .281$

Note: ^a What is your highest level of completed education? (0 = no education and 6 = university).

^b How often do you discuss [topic] with people you know? (0 = never and 4 = very often). ^c How often do you come across [topic] online? (0 = never and 4 = very often).

Table B.12.2: Multilevel logistic regression to predict the probability of expressing a personal opinion by posting a (dis)like on a page.

	Model 1		Model 2		Model 3		Model 4	
Fixed part								
Constant	2.11 ^{***}	(0.51)	4.63 ^{**}	(1.45)	1.27 [*]	(0.56)	4.01 ^{**}	(1.38)
<i>Norm congruency</i> (ref = congruent)								
Mixed	-1.73 ^{**}	(0.67)	-1.55 [*]	(0.65)	-1.25	(0.77)	-0.89	(0.74)
Incongruent	-2.06 ^{**}	(0.64)	-2.00 ^{**}	(0.64)	-2.59 ^{**}	(0.88)	-2.43 ^{**}	(0.84)
<i>Personal opinion</i> (ref = conservative)								
Progressive					2.26 [*]	(0.95)	2.31 [*]	(0.93)
* Mixed norm					-1.42	(1.20)	-1.78	(1.18)
* Incongruent norm					0.76	(1.33)	0.61	(1.29)
<i>Control variables</i>								
Female			0.44	(0.60)			0.14	(0.57)
Education			-0.65 ^{**}	(0.23)			-0.65 ^{**}	(0.23)
Offline discussion			0.15	(0.20)			0.07	(0.20)
Online discussion			0.00	(0.18)			0.01	(0.18)
Random part								
Var(discussions)	3.29 ^{***}	(.00)	3.29 ^{***}	(.00)	3.29 ^{***}	(.00)	3.29 ^{***}	(.00)
Var(participants)	9.14 ^{**}	(3.14)	8.27 ^{**}	(2.87)	7.84 ^{**}	(2.75)	6.93 ^{**}	(2.48)
Fit statistics								
AIC	516		514		502		500	
$N_{\text{discussions}}$	448		448		448		448	
$N_{\text{participants}}$	187		187		187		187	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table B.12.3: Multilevel logistic regression to predict the probability of deviating from a personal opinion by posting a (dis)like on a page.

	Model 1		Model 2		Model 3		Model 4	
Fixed part								
Constant	-1.63***	(0.38)	0.14	(1.06)	-1.10*	(0.43)	0.58	(1.03)
<i>Norm congruency</i> (ref = congruent)								
Mixed	0.62	(0.51)	0.73	(0.50)	0.44	(0.61)	0.71	(0.59)
Incongruent	1.21*	(0.49)	1.34**	(0.49)	1.39*	(0.65)	1.57*	(0.63)
<i>Personal opinion</i> (ref = conservative)								
Progressive					-1.38	(0.73)	-1.35	(0.71)
* Mixed norm					0.61	(0.97)	0.21	(0.95)
* Incongruent norm					-0.11	(1.05)	-0.25	(1.01)
<i>Control variables</i>								
Female			0.50	(0.49)			0.71	(0.48)
Education			-0.53**	(0.18)			-0.54**	(0.17)
Offline discussion			-0.20	(0.18)			-0.15	(0.17)
Online discussion			0.25	(0.16)			0.22	(0.16)
Random part								
Var(discussions)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)
Var(participants)	4.78**	(1.57)	4.25**	(1.52)	4.17**	(1.41)	3.55**	(1.33)
Fit statistics								
AIC	529		523		525		516	
$N_{\text{discussions}}$	448		448		448		448	
$N_{\text{participants}}$	187		187		187		187	

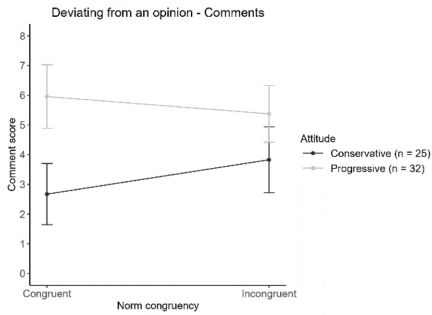
Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

Table B.12.3: Multilevel linear regression to predict the comment scores of participants.

	Model 1		Model 2		Model 3		Model 4	
Fixed part								
Constant	4.17***	(0.49)	-0.00	(2.10)	2.67***	(0.53)	-3.57*	(1.40)
<i>Norm congruency</i> (ref = congruent)								
Incongruent	0.67	(0.64)	0.59	(0.61)	1.16	(0.77)	2.25***	(0.62)
<i>Personal opinion</i> (ref = conservative)								
Progressive					3.28***	(0.76)	4.52***	(0.67)
* Incongruent norm					-1.74	(1.10)	-3.17***	(0.88)
<i>Control variables</i>								
Female			0.42	(0.81)			0.75	(0.50)
Education			0.53	(0.31)			0.58**	(0.19)
Offline discussion			0.50	(0.29)			0.03	(0.23)
Online discussion			0.19	(0.25)			0.79***	(0.21)
Random part								
Var(discussions)	1.61	(0.21)	1.55	(0.21)	1.59	(0.20)	1.59	(0.26)
Var(participants)	2.98**	(0.53)	2.37*	(0.47)	1.21	(0.28)	0.25	(0.26)
Fit statistics								
AIC	239		241		225		216	
N_{comments}	57		57		57		57	
$N_{\text{participants}}$	29		29		29		29	

Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (two-sided tests). Standard errors between parentheses.

A) Without controls



B) With controls

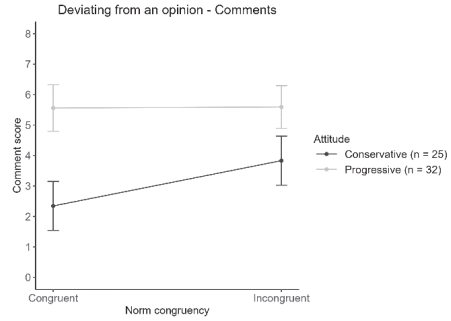


Figure B.12.1: The predicted progressiveness of a comment by norm congruency (a) with controls and (b) without controls. 57 comments nested in 29 participants. Separate lines for participants with a conservative opinion (black) and participants with a progressive opinion (grey).

B.13 Probability of opinion expression by personal opinion

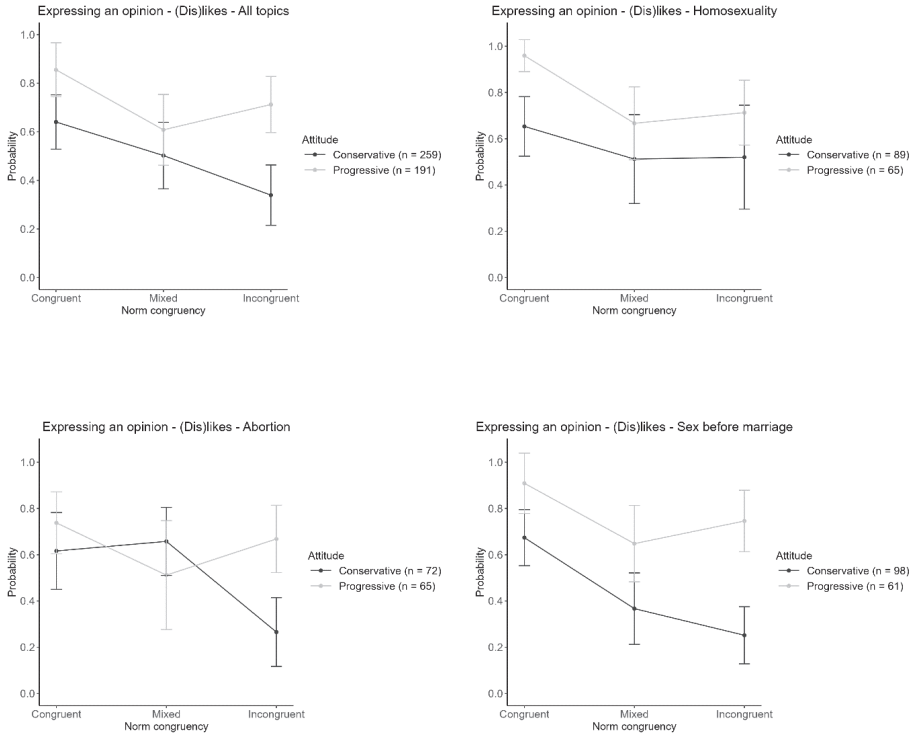


Figure B.13.1: Predicted probability of expressing a personal opinion using (dis)likes by norm condition for participants with a conservative (black line) and progressive (grey line) personal opinion. A graph for all topics combined, and for each topic separately. Separate graph per topic. 450 discussions nested in 188 participants.

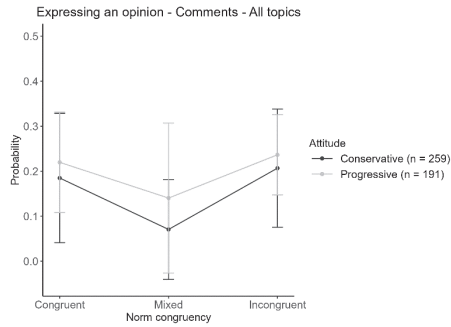


Figure B.13.2: Predicted probability of posting a comment on a page by norm congruency for participants with a conservative (black line) and a progressive (grey line) personal opinion for all topics combined. 450 discussions nested in 188 participants.

B.14 Probability of opinion deviation by personal opinion

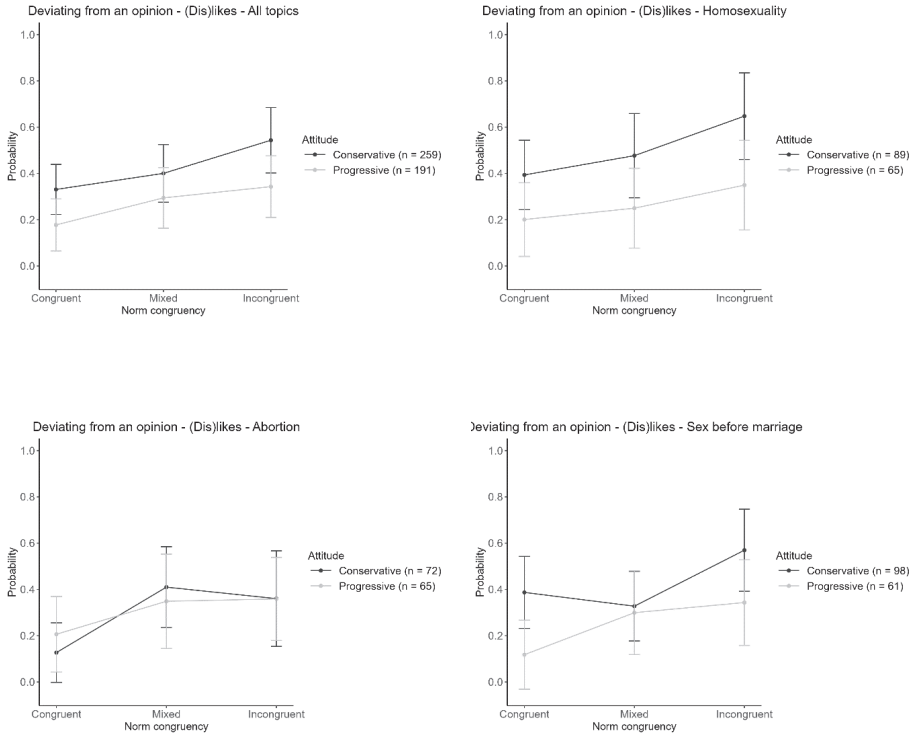


Figure B.14.1: Predicted probability of deviating from a personal opinion by norm condition for participants with a conservative (black line) and a progressive (grey line) personal opinion separately. A graph for all topics combined, and for each topic separately. 450 discussions nested in 188 participants.

Appendix C

Supplements to Chapter 4

C.1 Probability of (dis)liking (in)congruent comments by norm congruency

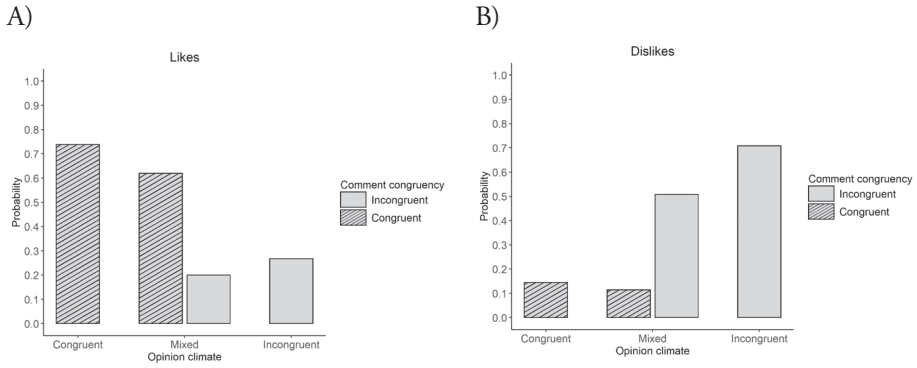


Figure C.1.1: Average probability of posting a like (Panel A) and dislike (Panel B) for congruent and incongruent comments by norm congruency (bivariate relationship). 958 discussions nested in 531 participants.

C.2 Comment scores by norm congruency

To measure the comment scores of the participants, two independent research assistants coded all the comments by the participants on a scale of 0 (very conservative) to 10 (very progressive). The results showed high internal consistency (Krippendorff's $\alpha=.88$), so we took the mean of these two scores as the score for each comment ($N_{\text{comments}} = 143$; $M = 5.77$; $SD = 3.01$). In line with Hypothesis 2, we would expect that participants are more likely to deviate from their personal opinion in mixed and incongruent opinion climates compared to congruent opinion climates using the comments that they post. In other words, we would expect that progressive participants post more conservative comments in the mixed and incongruent opinion climate compared to the congruent opinion climate. Likewise, we expect conservative participants to post more progressive comments in the mixed and incongruent opinion climate compared to the congruent opinion climate. To study this, we use a multilevel linear regression.

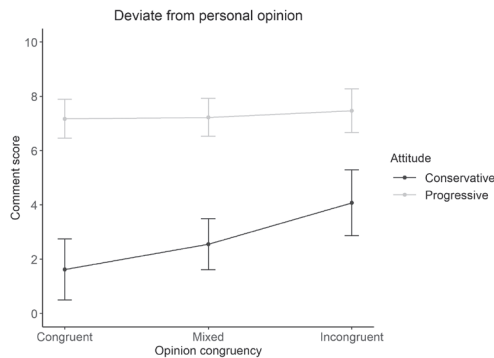


Figure C.2.1: Predicted comment scores by conservative participants (black line) and progressive participants (grey line) over the opinion climates (0 = very conservative and 10 = very progressive). 143 comments nested in 91 participants.

Figure C.2.1 shows the average scores of the comments that conservative and progressive participants have posted in each opinion climate (see Table C.2.1 for the model). Progressive participants post approximately as progressive comments in the congruent progressive opinion climate as in the incongruent conservative opinion climate. Conservative participants, on the other hand, post significantly more progressive comments in the incongruent progressive opinion climate (predicted score = 4.08) than in the congruent conservative opinion climate (predicted score = 1.62; $p = .004$). The effect of the incongruent opinion climate (relative to congruent) is significantly more positive for conservative than for progressive participants ($p = .032$). From this, we can conclude that conservatives, but not progressives, are more

likely to deviate from their opinion using comments in an incongruent opinion climate compared to a congruent opinion climate. We thus find partial support for Hypothesis 2 when we use comment scores as the dependent variable instead of (dis)likes.

Table C.2.1: Multilevel linear regression to predict comment scores (0 = very conservative and 10 = very progressive).

	Model 1	
Fixed part		
Constant	1.62**	(.58)
<i>Independent variables</i>		
Opinion congruency (ref = congruent)		
Mixed	.93	(.75)
Incongruent	2.46**	(.85)
Progressive attitude	5.55***	(.68)
* Mixed norm	-.88	(.90)
* Incongruent norm	-2.16*	(1.01)
Random part		
Var(discussions)	-.39	(.34)
Var(participants)	-.61	(1.87)
Fit statistics		
N_{comments}		143
$N_{\text{participants}}$		93
AIC		614

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests).

C.3 Distribution of sample over norm conditions

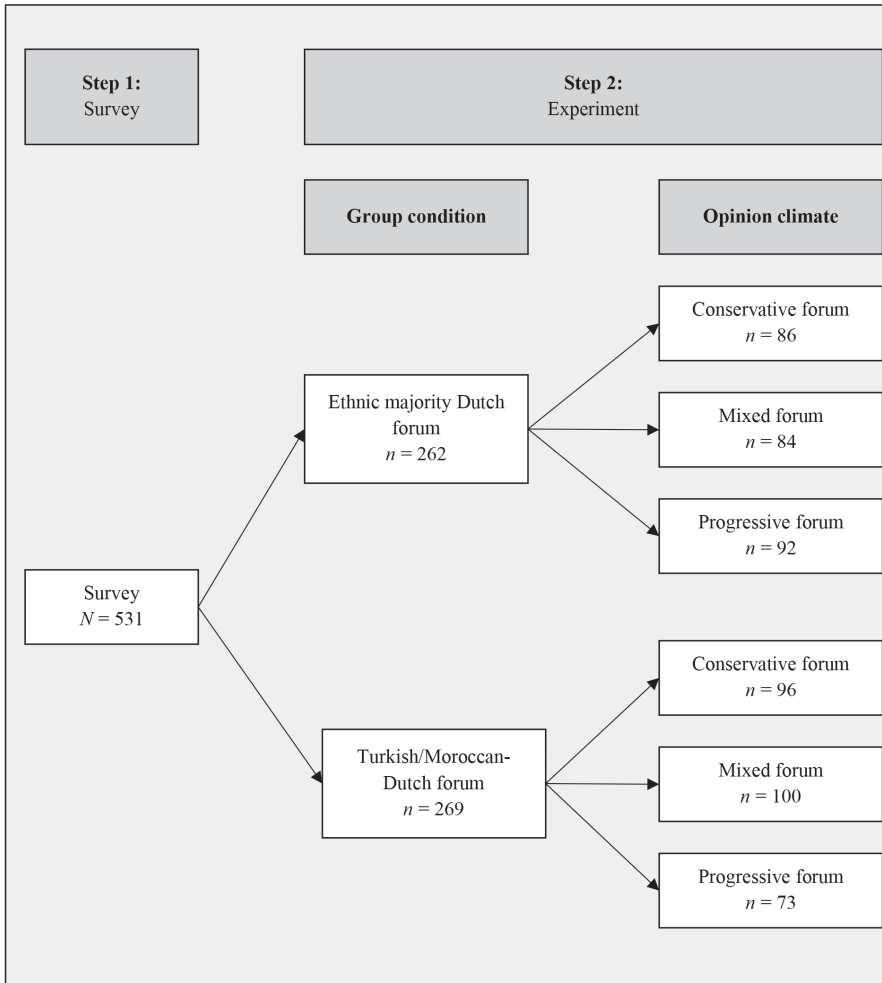


Figure C.3.1: Distribution of final sample over the experimental conditions. *Note:* N = number of participants.

C.4 Online discussions

Article homosexuality

Title Acceptance of homosexuality in the Netherlands: 'LGBTQ+' people can
Link live comfortably as long as they behave 'normally'.
<https://www.rtlnieuws.nl/editie1/artikel/5090106/coc-homoacceptatie-dunner-dan-we-denken-discriminatie-lhbt-homoseksuelen>

Article abortion

Title Discussion about abortion law flares up again, 36 years after its
implementation.
Link <https://www.rtlnieuws.nl/nieuws/nederland/artikel/5195019/abortuswet-afbreking-zwangerschap-abortus-week-van-het-leven>

Topic: Homosexuality

Opinion climate: Conservative

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

Gays deserve NO respect

Post text

Acceptance of gays, what nonsense is this! Allah the Exalted created man for woman and woman for man. Just look at what is stated in the Noble Quran about the people of Lut *AS*.

Comments

- 1 Disgusting. Does the word of Allah mean nothing anymore! Men and men cannot reproduce. Women and women cannot either! *Whallah*, when I hear this, I literally get shivers down my spine.
- 1.1 Exactly! Look, homosexuality is forbidden in ISLAM because you cannot reproduce. What many people say is that you have to keep your feelings for the same sex under control.
- 2 I also think that these feelings are from the cursed *shaytaan*. *Inscha Allah*, those who have these feelings can suppress them and be in control.
- 3 I agree with you. Homosexuality is a disease, a trial, and the person in question must do everything to resist it. Yes, even get married and live normally.
- 3.1 Yes, it is a disease. And it is reprehensible and forbidden in Islam. And punishable.
- 3.1.1 That's right, bumming is *Haram* and a crime in Islam... Allah *cc* sent Prophet Lut as a warner to the people of Sodom for this crime.
- 4 Being GAY is just pure *HARAMMMMM*, I mean *ALLAH SUBHANA WATA'ALA* did not put two different people on earth for nothing: If I see a gay person, I spit on them!

Topic: Homosexuality

Opinion climate: Mixed

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

What do you think about homosexuality?

Post text

I find homosexuality a very difficult topic to look at. Allah SWT has placed people with these feelings on earth, but at the same time, others say that homosexuality is prohibited in Islam because you cannot reproduce.

Comments

- 1 I think that these feelings are from the cursed *shaytaan*. *Inscha Allah*, those who have these feelings can suppress them and be in control.
- 2 Islam is peaceful, who are we to judge them, leave that to Allah.
- 2.1 Islam is definitely peaceful. But if you have to start showing respect for gays, you might as well show respect for *shitan*! I think you should read the Quran on this subject.
- 2.1.1 You with your *shaytan*, gays and lesbians are born with the feelings they have.
- 3 Most Muslims do not have a good understanding of homosexuality in Islam, and it does not mean that you are a bad Muslim if you have such feelings. You cannot help it and there is nothing wrong with you!
- 3.1 When I read this, I literally shiver. Does the word of Allah mean nothing anymore! Men cannot reproduce with men. Neither can women with women. The idea alone is already ridiculous!!!!!!!!!!!!
- 4 Being GAY is just pure *HARAMMMMMM*, I mean *ALLAH SUBHANA WATAALA* did not put two different people on earth for nothing: If I see a gay person, I spit on them!
- 4.1 This makes absolutely no sense! People are born with these feelings and that's what people should understand, especially in our culture. The boys and girls who are gay have an incredibly difficult life because they often cannot be who they really are.

Topic: Homosexuality

Opinion climate: Progressive

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

Gays deserve more respect

Post text

It is unfortunate to read this! People always have their judgments ready about gays. Allah *SWT* is our judge and not other people. So it's fine that you're gay, every creature is from Allah *SWT*.

Comments

- 1 I agree. Most Muslims do not have a good understanding of homosexuality in Islam, and it does not mean that you are a bad Muslim if you have such feelings. You cannot help it and there is nothing wrong with you!
- 2 I know that there are gays who deeply believe in Allah from their heart and soul but get lost due to negative reactions. Muslims should just help each other find the right path and not judge each other.
- 2.1 I agree, we shouldn't judge others if we don't want to be judged ourselves. Who are we to judge others, let Allah do that.
- 2.1.1 People shouldn't be quick to judge. Gays can repent and stay away from evil and do good deeds. Praying, fasting, and so on. You know the drill. It's shitty that many Muslims are often poorly informed and judge each other.
- 3 I agree with you. Even if someone is gay, they are still the same person so you should treat them the same way.
- 3.1 Yes, if that's really what he feels, we should just respect him.

Topic: Homosexuality

Opinion climate: Conservative

Forum composition: Ethnic majority Dutch

Post title

I don't accept homosexuality either

Post text

I understand that many people do not accept homosexuality. Many people say that if people love each other, it should be allowed, but I don't agree. Don't men and women complement each other better? This is just how it is.

Comments

- 1 All that tolerance towards gays is not necessary in my opinion. A man is man and a woman is a woman and they belong together. That's nature.
- 1.1 I agree with you. One man and one woman is not the same as two men or two women.
- 2 I am getting a bit tired of all the pressure behind it...personally, I am against gay marriage, etc.
- 2.1 Yeah, pfft, I almost feel guilty for being a man who is attracted to women.
- 3 People always react so strongly to opponents of homosexuality. Attacks on people based on sexual orientation? If that's what you want, go ahead, right? I mean, it's fine if you don't want it, but if you do, go ahead, right?
- 3.1 I agree! You can still have a different opinion, right? Even though apparently that's not okay. We have to accept everything, otherwise you're immediately a homophobe, racist, or whatever.
- 4 The love between homosexual partners can never be equal to that of a heterosexual couple.

Topic: Homosexuality

Opinion climate: Mixed

Forum composition: Ethnic majority Dutch

Post title

What do you think about homosexuality?

Post text

Many people say that if people love each other, it should be allowed. Others say that men and women complement each other better, and homosexuality is therefore not good. I don't know... What do you think?

Comments

- 1 Homosexuality is as natural as walking, thinking, falling in love or being heterosexual, for example. It should not be seen as different, it should be seen as normal. It is terribly necessary to simply have respect for each other.
- 1.1 And that's how it should be. Let those people do what they want. Who could be against that?
- 2 All this tolerance towards gays is not necessary in my opinion. A man is man and a woman is a woman and they belong together. There is nothing wrong with the way nature created it. The creator of nature wouldn't have done it without reason.
- 2.1 You don't have to be with someone of the same sex if you don't want to, but let others be free to choose the form of love that they want.
- 2.1.1 People always react so strongly to opponents of homosexuality. Attacks on people based on sexual orientation? If that's what you want, go ahead, right? I mean, it's fine if you don't want it, but if you do, go ahead, right?
- 3 I am getting a bit tired of all the pressure behind it...personally, I am against gay marriage, etc.
- 3.1 Yeah, pfft, I almost feel guilty for being a man who is attracted to women.
- 4 I think it's a shame that acceptance is so low. It shouldn't be anyone's business what other people do in their love life.

Topic: Homosexuality

Opinion climate: Progressive

Forum composition: Ethnic majority Dutch

Post title

People must accept homosexuality!

Post text

It's a shame that many people do not accept homosexuality! If we all accept that we are all human beings, regardless of faith, color, or sexual orientation, we can treat each other with more respect.

Comments

- 1 It shouldn't be anyone's business what other people do in their love life.
- 2 Homosexuality is as natural as walking, thinking, falling in love or being heterosexual, for example. It should not be seen as different, it should be seen as normal. It is terribly necessary to simply have respect for each other.
- 3 You don't have to be with someone of the same sex if you don't want to, but let others be free to choose the form of love that they want.
- 3.1 And that's the way it should be. Let those people be free to do what they want. Who could be against this?
- 4 I find it so remarkable that this still has to be a topic of discussion at all. Every person is a person, we're all pink on the inside. ;-) Live and let live.
- 5 What a sad message. That people still have to fight for their sexuality in 2022. It's sad, depressing, and frightening at the same time.
- 5.1 Completely agree!

Topic: Abortion

Opinion climate: Conservative

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

Abortion is murder

Post text

It's good that this discussion is taking place! I don't understand why so many people have abortions!! Having a child is the most beautiful thing there is, and if you have it removed, it means you go against the wishes of Islam. You are killing it, it gives me the shivers.

Comments

- 1 I don't understand either. In Islam, abortion is not permitted in principle. An exception is only made if there is a danger to the mother's life or if the pregnancy is the result of rape. Allah knows best.
- 1.1 That's right. It is all *nasib* (written) in Islam. Allah has blessed you with a child, and if you are a mother, heaven lies beneath your feet. I dream of such happiness for myself and my wife.
- 2 We are Muslims, so we trust in Allah. He will take care of you and your child, and everything will always turn out well, as long as you follow the path of Islam and trust in Allah. If you have an abortion, you are essentially giving up your trust in Allah.
- 3 I would never do that! It is a living being in your stomach, how can you kill it? It is something that Allah has given you, so be happy with it. *Hayir insha Allah.*
- 3.1 I would also never do it! Even if I am not ready for it yet, I would still keep the child.
- 4 Abortion should not be allowed. It is a gift if you can have children. How can you kill a child when you have been given this favor from *Allah Subhana wa Taala?*

Topic: Abortion

Opinion climate: Mixed

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

I find the discussion about abortion complicated

Post text

There is a discussion in the Netherlands again about allowing abortions or not. What do you think about this? I know that there are Islamic rules regarding having an abortion, and as far as I know/heard, it is allowed in some cases and therefore not a sin.

Comments

- 1 Abortion is generally not allowed in Islam. An exception is only made if there is a danger to the mother's life or if the pregnancy is the result of rape. Allah knows best.
- 1.1 This is not true! Only if it happens AFTER 120 days is it considered killing a human being. This is because the Prophet (peace be upon him) has told us that after 120 days, the soul is blown into the body of a fetus, as mentioned in *al-Boechari en Moeslim*.
- 1.1.1 That's right, it depends on when the abortion is performed. If you have an abortion within a certain time frame, it is allowed because it is not yet a child in your womb, so you are not committing murder.
- 1.1.2 If Allah has blessed you with a child, how can you then kill it? It is something that Allah has given you, so be happy with it. *Hayir insha Allah*.
- 2 Abortion is never a choice people make gladly, but sometimes there is no other option. And as long as it is done according to the rules, I think it should be allowed.
- 2.1 It can be different! We are Muslims, so we trust in Allah. He will take care of you and your child, and everything will always turn out well, as long as you follow the path of Islam and trust in Allah. If you have an abortion, you are essentially giving up your trust in Allah.
- 3 It is a child in your womb, how can you kill it? I couldn't do that.. and Allah *swt* has given you a gift, and as thanks you kill the child.
- 3.1 Personally, I don't think I could have an abortion, but I am NOT against it. If it's allowed in Islam, why not?

Topic: Abortion

Opinion climate: Progressive

Forum composition: Turkish-Dutch and Moroccan-Dutch

Post title

Abortion should be allowed under certain circumstances

Post text

I often hear people say that abortion is never okay, but that's not true! Only if it happens AFTER one hundred and twenty days is it considered killing a human being. This is because the Prophet (peace be upon him) has told us that after one hundred and twenty days, the soul is blown into the body of a fetus, as mentioned in *al-Boechari en Moeslim*.

Comments

- 1 It depends, if you have an abortion within a certain time frame, it is allowed because it is not yet a child in your womb, so you are not committing murder.
- 2 In Islam, it is true that the baby gets a soul after 120 days. After 120 days, it is prohibited in Islam unless the child poses a direct threat to the mother. So, it is always okay before 120 days!
- 2.1 It is typical that many Muslims immediately assume it is murder, but they do not know how, what, where, and when.
- 2.2 *Allahu Alim!*
- 3 Abortion is never a choice people make gladly, but sometimes there is no other option. And as long as it is within the 120 days, I think it should be allowed.
- 3.1 Saying that abortion equals murder is often just nonsense. How can you murder something that according to Islam, does not yet have a soul...? I don't get it...

Topic: Abortion

Opinion climate: Conservative

Forum composition: Ethnic majority Dutch

Post title

Abortion is murder

Post text

I really abhor abortion. People should think before jumping into bed with each other. Medical reasons and rape are the only reasons I find acceptable for having an abortion. Then the chances of making the wrong decision are minimal.

Comments

- 1 I can only agree with this. It cannot be that innocent living people who have done nothing wrong can be disposed of without being able to defend themselves in court.
- 2 I am against abortion. I really don't understand the idea of being the boss of your own body and being allowed to kill your own child.
- 2.1 Yes, and you are also making a life and death decision for a little child who cannot make a choice in that.
- 3 I agree with you, in my opinion, abortion should not be used as a form of contraception. There is enough time before it gets to that point to prevent it.
- 4 Legalization can also be a free pass for the perpetrator instead of holding them responsible. It encourages rape.
- 4.1 In 95% of cases, the woman in question can prevent herself from becoming pregnant. I am also a woman and I do not understand how you can kill the child in your womb or even let it get to the point where you have to make that choice.

Topic: Abortion

Opinion climate: Mixed

Forum composition: Ethnic majority Dutch

Post title

I find the discussion about abortion complicated

Post text

There is a lot of resistance to the relaxation of the rules regarding abortion. Some people even want to abolish it because it is murder. Others say that everyone should be allowed to decide for themselves what they want. I don't know, what do you think?

Comments

- 1 I really feel disgusted by abortion. People should think before they jump into bed with each other. Medical reasons and rape are the only reasons I find acceptable for abortion. That way, the chances of making the wrong decision are minimal.
- 1.1 I always find it strange that many men (at least I think so) think they have to give an opinion on a woman's uterus. Everyone can of course decide for themselves whether they are pro or anti-abortion, but it seems logical to me that the woman in question should make that decision herself.
- 1.1.1 I agree. If everyone is allowed to decide for themselves, I think "women" themselves know best what they can, want, and can handle. The world would look a lot happier.
- 2 Legalization can have a stimulating effect. Abortion is an unnatural procedure. It is intentionally taking a life.
- 2.1 Yes, legalization can also be a free pass for the perpetrator instead of holding them responsible. It encourages rape.
- 3 I support abortion! Putting unwanted and unwanted children into the world to grow up in an environment where they are not wanted? No, that is not good for those children, to grow up in poverty in an environment that does not want them.
- 3.1 Yes, the child should also have the right not to be born. How many people on earth are suffering miserable lives because they are unwanted? No food, no love?
- 3.2 I really can't agree with this. . It cannot be that innocent living people who have done nothing wrong can be disposed of without being able to defend themselves in court.

Topic: Abortion

Opinion climate: Progressive

Forum composition: Ethnic majority Dutch

Post title

Everyone should have the right to have an abortion

Post text

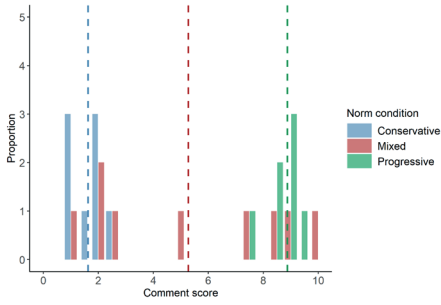
I don't understand why people are against abortion. No woman does it for fun. There is often a dramatic story behind it. This is not about contraception. Women should ALWAYS have the right to have an abortion.

Comments

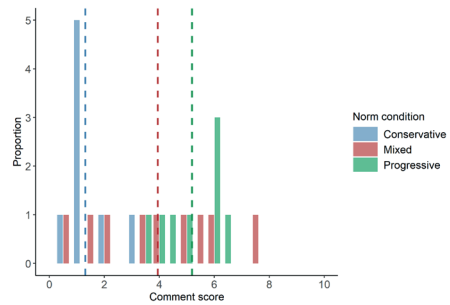
- 1 I agree. If everyone is allowed to decide for themselves, I think "women" themselves know best what they can, want, and can handle. The world would look a lot happier.
- 2 There is nothing human about other people deciding what an individual can do with their body. My uterus, MY responsibility, MY choice... And you may disagree with my choice, but that is not relevant to my decision.
- 2.1 I agree with you! Putting unwanted and unwanted children into the world to grow up in an environment where they are not wanted? No, that is not food for those children, to grow up in poverty in an environment that does not want them.
- 2.2 Yes, the child should also have the right not to be born. How many people on earth are suffering miserable lives because they are unwanted? No food, no love?
- 3 It is very simple: if you do not want an abortion, then no one is forcing you to have one. But if you want an abortion (for whatever reason), then you should have that freedom of choice.
- 4 I always find it strange that many men (at least I think so) think they have to give an opinion on a woman's uterus. Everyone can of course decide for themselves whether they are pro or anti-abortion, but it seems logical to me that the woman in question should make that decision herself.

C.5 Comment scores by norm conditions

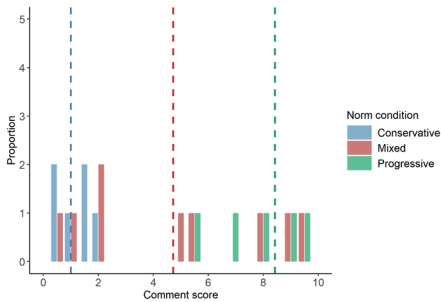
A) Ethnic majority Dutch - Homosexuality



A) Turkish/Moroccan-Dutch - Homosexuality



A) Ethnic majority Dutch - Abortion



A) Turkish/Moroccan-Dutch - Homosexuality

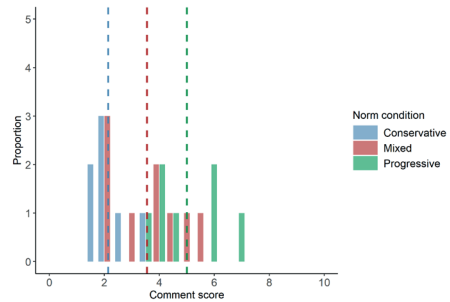


Figure C.5.1: Comment scores by topic and condition (0 = very conservative and 10 = very progressive).



C.6 Model to explain opinion expression using (dis)likes

Table C.6.1: Multilevel logistic regression to predict the probability that participants express their personal opinion using (dis)likes. Results for likes and dislikes combined.

	Model 1		Model 2		Model 3	
Fixed part						
Constant	2.94***	(.56)	2.46***	(.61)	.14	(.82)
<i>Independent variables</i>						
<i>Opinion congruency</i> (ref = congruent)						
Mixed	-.88	(.47)	-.23	(.64)	-.12	(.77)
Incongruent	-.64	(.45)	.28	(.63)	3.12*	(1.31)
<i>In- and outgroup</i> (ref = outgroup)						
Ingroup condition			.97	(.67)	2.76**	(.89)
* Mixed norm			-1.29	(.93)	-2.24	(1.21)
* Incongruent norm			-1.78*	(.91)	-5.49***	(1.53)
<i>Ethnicity</i> (ref = ethnic majority Dutch)						
Turkish/Moroccan-Dutch					1.57	(.87)
* Mixed norm					.42	(1.24)
* Incongruent norm					-4.68**	(1.54)
* Ingroup condition					-4.27***	(1.29)
* Mixed norm					1.90	(1.76)
* Incongruent norm					7.65***	(2.09)
<i>Control variables</i>						
<i>Attitude</i> (ref = conservative)						
Progressive					1.01*	(.44)
Age					-.01	(.02)
Female					1.15**	(.42)
Random part						
Var(discussions)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)
Var(participants)	15.94**	(5.78)	16.02**	(5.80)	7.40**	(2.86)
Fit statistics						
$N_{\text{discussions}}$	958		958		958	
$N_{\text{participants}}$	531		531		531	
AIC	1033		1038		1018	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests). Standard errors between parentheses.

C.7 Model to explain opinion deviation using (dis)likes

Table C.7.1: Multilevel logistic regression to predict the probability that participants deviate from their personal opinion using (dis)likes. Results for likes and dislikes combined.

	Model 1		Model 2		Model 3	
Fixed part						
Constant	-3.18***	(.43)	-2.38***	(.51)	-1.92**	(.67)
<i>Independent variables</i>						
<i>Opinion congruency</i> (ref = congruent)						
Mixed	1.19**	(.40)	.33	(.54)	-.49	(.62)
Incongruent	1.35***	(.40)	.28	(.74)	-1.68	(.99)
<i>In- and outgroup</i> (ref = outgroup)						
Ingroup condition			-1.02	(.56)	-2.23**	(.77)
* Mixed norm			1.39	(.75)	1.67	(1.01)
* Incongruent norm			1.37	(.79)	3.44**	(1.15)
<i>Ethnicity</i> (ref = ethnic majority Dutch)						
Turkish/Moroccan-Dutch					-1.38	(.71)
* Mixed norm					1.98*	(.95)
* Incongruent norm					3.27**	(1.14)
* Ingroup condition					2.79*	(1.09)
* Mixed norm					-1.66	(1.41)
* Incongruent norm					-3.98*	(1.58)
<i>Control variables</i>						
<i>Attitude</i> (ref = conservative)						
Progressive					-.85*	(.34)
Age					.02*	(.01)
Female					.42	(.33)
Random part						
Var(discussions)	3.29***	(.00)	3.29***	(.00)	3.29***	(.00)
Var(participants)	6.25**	(1.96)	4.31*	(2.11)	2.62	(1.48)
Fit statistics						
$N_{\text{discussions}}$	958		958		958	
$N_{\text{participants}}$	531		531		531	
AIC	1033		1038		1018	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests). Standard errors between parentheses.

C.8 Model to explain opinion expression for (dis)likes separately

Table C.8.1: Multilevel logistic regression to predict the probability that participants express their personal opinion using (dis)likes. Results for likes and dislikes separately.

	Model 1		Model 2		Model 3	
	Likes	Dislikes	Likes	Dislikes	Likes	Dislikes
Fixed part						
Constant	1.12*** (.33)	-.00 (.33)	1.06* (.45)	.18 (.46)	-.80 (.86)	-1.14 (.90)
<i>Independent variables</i>						
<i>Opinion congruency</i> (ref = mixed)						
Congruent	1.50** (.53)		1.11 (.67)		.99 (.75)	
Incongruent		2.10*** (.53)		2.34** (.74)		3.62*** (.86)
<i>In- and outgroup</i> (ref = outgroup)						
Ingroup condition			.11 (.63)	-.36 (.66)	.93 (.77)	.83 (.81)
* Congruent norm			.78 (.90)		2.01 (1.20)	
* Incongruent norm				-.43 (.96)		-2.92* (1.18)
<i>Ethnicity</i> (ref = ethnic majority Dutch)						
Turkish/Moroccan-Dutch					1.86* (.85)	.70 (.86)
* Congruent norm					-.42 (1.21)	
* Incongruent norm						-2.92* (1.24)
* Ingroup condition					-2.60* (1.14)	-2.27 (1.19)
* Congruent norm					-1.79 (1.73)	
* Incongruent norm						4.73** (1.70)

Table C.8.1 (continued): Multilevel logistic regression to predict the probability that participants express their personal opinion using (dis)likes. Results for likes and dislikes separately.

	Model 1		Model 2		Model 3	
	Likes	Dislikes	Likes	Dislikes	Likes	Dislikes
<i>Control variables</i>						
Attitude (ref = conservative)						
Progressive					.99* (.46)	1.13* (.49)
Age					-.02 (.02)	-.00 (.02)
Female					1.65*** (.43)	.49 (.44)
Random part						
Var(discussions)	3.29*** (.00)	3.29*** (.00)	3.29*** (.00)	3.29*** (.00)	3.29*** (.00)	3.29*** (.00)
Var(participants)	12.49 (4.64)	13.15 (3.90)	12.43 (4.61)	13.10 (3.89)	9.21 (.00)	11.16 (.00)
Cov(likes, dislikes)	11.93*** (2.79)		11.94*** (2.79)		10.14*** (.00)	
Fit statistics						
$N_{\text{discussions}}$	958		958		958	
$N_{\text{participants}}$	531		531		531	
AIC	1373		1377		1351	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests). Standard errors between parentheses. Participants cannot express their opinion using dislikes in the congruent opinion climate and likes in the incongruent opinion climate.

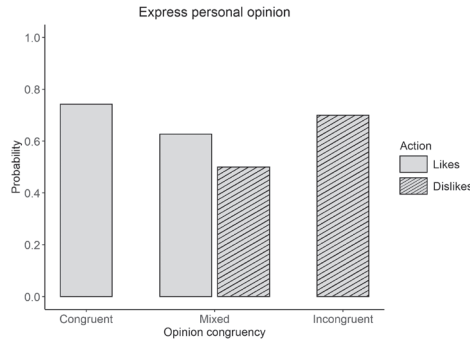
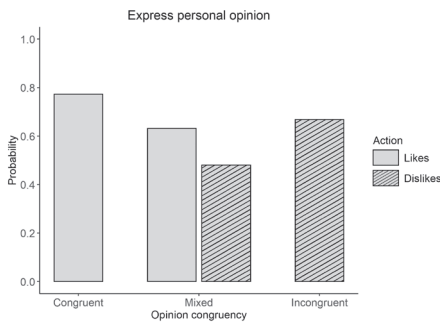


Figure C.8.1: predicted probability that participants express their personal opinion using (dis)likes by opinion congruency. Results for (dis)likes separately. 958 discussions nested in 531 participants.

A) Ingroup condition



B) Outgroup condition

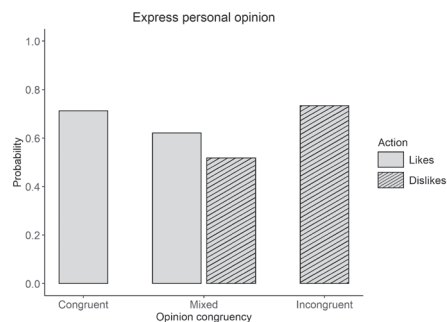
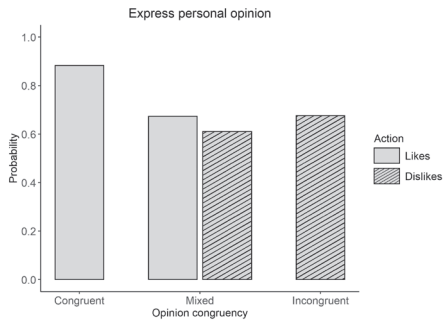


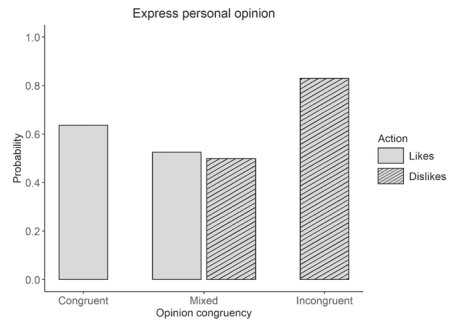
Figure C.8.2: predicted probability that participants express their personal opinion by opinion congruency in the (a) ingroup and (b) outgroup condition. Results for (dis)likes separately. 958 discussions nested in 531 participants.

Participants can express their personal opinion by liking congruent comments in the congruent and mixed opinion climate, and by disliking incongruent comments in the mixed and incongruent opinion climate. Participants in the mixed opinion climate who either like a congruent comment or dislike an incongruent comment are considered to express their personal opinion. 67% of the observations that express their personal opinion in the mixed opinion climate do so both by liking congruent and disliking incongruent comments. Therefore, the total probability that participants express their personal opinions in the mixed opinion climate is much smaller than the sum of the probability that participants like congruent comments and dislike incongruent comments.

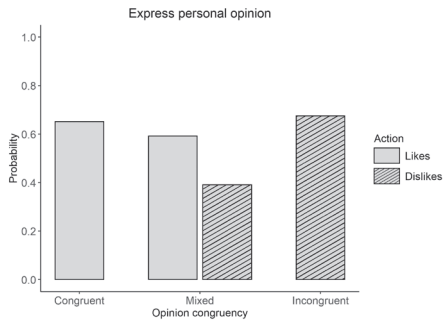
A) Ethnic majority Dutch - Ingroup



B) Ethnic majority Dutch – Outgroup



C) Turkish/Moroccan-Dutch – Ingroup



D) Turkish/Moroccan-Dutch – Outgroup

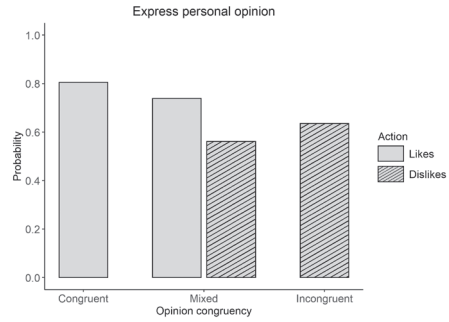


Figure C.8.3: Predicted probability that participants express their personal opinion using (dis)likes in the ingroup (left column) and outgroup condition (right column). Separate graphs for ethnic majority Dutch (top row) and Turkish-Dutch and Moroccan-Dutch (bottom row). Results for (dis)likes separately. 958 discussions nested in 531 participants.

C.9 Model to explain opinion deviation for (dis)likes separately

Table C.9.1: Multilevel logistic regression to predict the probability that participants deviate from their personal opinion using (dis)likes. Results for likes and dislikes separately.

	Model 1		Model 2		Model 3	
	Likes	Dislikes	Likes	Dislikes	Likes	Dislikes
Fixed part						
Constant	-2.85*** (.49)	-3.24*** (.49)	-3.30*** (.61)	-3.07*** (.54)	-3.99*** (1.01)	-2.61** (.79)
<i>Independent variables</i>						
<i>Opinion congruency</i> (ref = mixed)						
Congruent	.76 (.42)	.36 (.39)	1.07 (.61)	.71 (.53)	.71 (.86)	.77 (.60)
Incongruent						
<i>In- and outgroup</i> (ref = outgroup)						
Ingroup condition			.96 (.61)	-.22 (.54)	.27 (.89)	-1.77* (.86)
* Congruent norm				-.79 (.77)		-.41 (1.13)
* Incongruent norm			-.61 (.82)		.73 (1.18)	
<i>Ethnicity</i> (ref = ethnic majority Dutch)						
Turkish/Moroccan-Dutch					1.55 (.88)	-.87 (.78)
* Congruent norm					-.07 (1.15)	-.24 (1.01)
* Incongruent norm					.32 (1.17)	2.90* (1.16)
* Ingroup condition						-.25 (1.53)
* Congruent norm						
* Incongruent norm					-1.23 (1.58)	

Table C.9.1 (continued): Multilevel logistic regression to predict the probability that participants deviate from their personal opinion using (dis)likes. Results for likes and dislikes separately.

	Model 1		Model 2		Model 3	
	Likes	Dislikes	Likes	Dislikes	Likes	Dislikes
<i>Control variables</i>						
Attitude (ref = conservative)						
Progressive					-.93* (.46)	-.86* (.41)
Age					.01 (.02)	.03* (.01)
Female					1.01* (.45)	-.22 (.38)
Random part						
Var(discussions)	3.29 *** (.00)	3.29 *** (.00)	3.29 *** (.00)	3.29 *** (.00)	3.29 *** (.00)	3.29 *** (.00)
Var(participants)	9.25 (3.69)	4.37 (1.88)	8.73 (3.44)	4.08 (1.80)	6.21 (2.35)	2.68 (1.40)
Cov(likes, dislikes)	5.19 ** (1.50)		5.06 *** (1.43)		3.87 *** (1.05)	
Fit statistics						
$N_{\text{discussions}}$	958		958		958	
$N_{\text{participants}}$	531		531		531	
AIC	1373		1377		1351	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests). Standard errors between parentheses. Participants cannot express their opinion using dislikes in the congruent opinion climate and likes in the incongruent opinion climate.

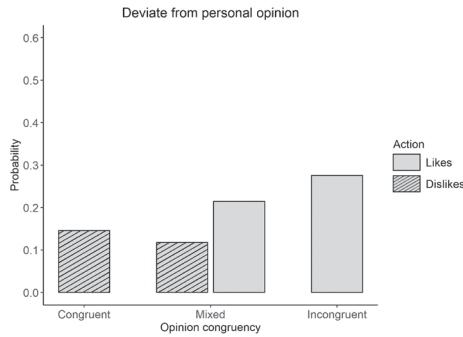
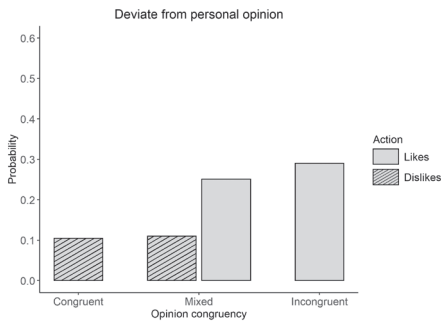


Figure C.9.1: predicted probability that participants deviate from their personal opinion by opinion congruency. Results for (dis)likes separately. 958 discussions nested in 531 participants.

A) Ingroup condition



B) Outgroup condition

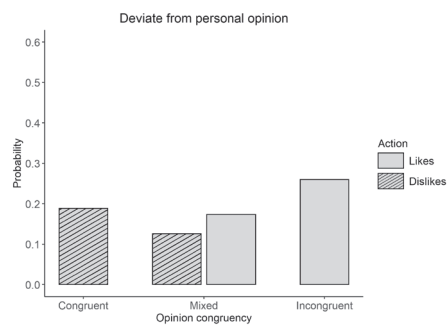
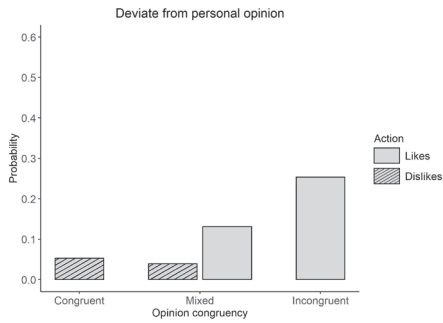


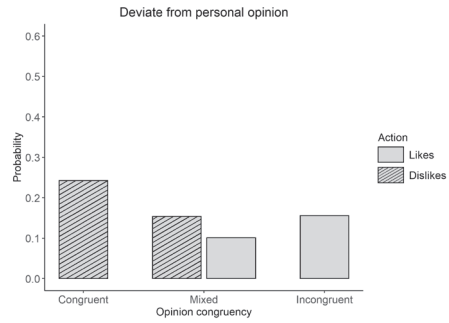
Figure C.9.2: predicted probability that participants deviate from their personal opinion by opinion congruency in the (a) ingroup and (b) outgroup condition. Results for (dis)likes separately. 958 discussions nested in 531 participants.

Participants can deviate from their personal opinion by disliking congruent comments in the congruent and mixed opinion climate, and by liking incongruent comments in the mixed and incongruent opinion climate. Participants in the mixed opinion climate who either dislike a congruent comment or like an incongruent comment are considered to deviate from their personal opinion. 24% of the observations that deviate from their personal opinion in the mixed opinion climate do so both by disliking congruent and liking incongruent comments. Therefore, the total probability that participants deviate from their personal opinions in the mixed opinion climate is smaller than the sum of the probability that participants dislike congruent comments and like incongruent comments.

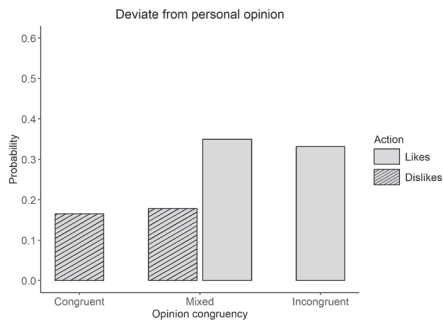
A) Ethnic majority Dutch - Ingroup



B) Ethnic majority Dutch - Outgroup



C) Turkish/Moroccan-Dutch – Ingroup



D) Turkish/Moroccan-Dutch – Outgroup

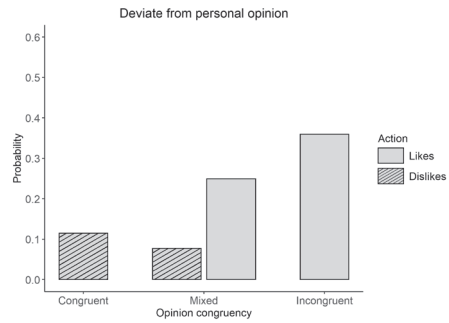


Figure C.9.3: Predicted probability that participants deviate from their personal opinion using (dis)likes in the ingroup (left column) and outgroup condition (right column). Separate graphs for ethnic majority Dutch (top row) and Turkish-Dutch and Moroccan-Dutch (bottom row). 958 discussions nested in 531 participants

Appendix D

Supplements to Chapter 5

D.1 Reliability of simple difference scores

The reliability of a simple difference score becomes an issue only when the measurement of self-reports and other-reports is unreliable, when these components are highly correlated, and when the ratio of the components' standard deviation is close to 1 (Williams & Zimmerman, 1996). Therefore, rather than disregarding absolute difference scores a priori, we assess how reliable this score is in our data. We can use the following formula to calculate the reliability of difference scores r_D :

$$r_D = \frac{\sigma_1^2 r_{11} + \sigma_2^2 r_{22} - 2r_{12}\sigma_1\sigma_2}{\sigma_1^2 + \sigma_2^2 - 2r_{12}\sigma_1\sigma_2}$$

Where r_{11} and r_{22} are the reliabilities of the self-reports and other-reports, respectively, σ_1 and σ_2 are the standard deviations of these components, and r_{12} is the correlation between these components (Johns, 1981). In our data, the correlation between self-reported and other-reported opinions r_{12} is .49, the standard deviation of self-reported opinions σ_1 is 3.74, and the standard deviation of perceived opinions σ_2 is 3.47. It is not possible to assess the reliability of the single-item self-reported and perceived opinions about homosexuality. However, in previous studies (for an overview, see Grey, Robinson, Coleman, & Bockting, 2013), multi-item measures for opinions about homosexuality are very reliable, with most scales exceeding a reliability score of .90. Single-item measures for opinions about homosexuality, like we use in this study, are often highly correlated with these multi-item measures (Herek & McLemore, 2013). In our data, a reliability of .90 for the measurement of self-reported and perceived opinions about homosexuality would result in a reliability of the difference score r_D of .81. We are therefore confident that using absolute difference scores will result in a correct interpretation of our data.

D.2 Model to explain misperception for social network properties separately

Table D.2.1: Multilevel linear regression analysis explaining misperception of alters' opinions.

	Model 1	Model 2	Model 3	Model 4
Fixed part				
Intercept	2.84*** (.16)	2.91*** (.16)	3.33*** (.26)	3.19*** (.25)
Willingness to share opinion	-.52** (.17)	-.32 (.18)	-.44* (.17)	-.53** (.17)
Friendship		-.49** (.18)		
Non-Muslim minority egos			.03 (.23)	
Muslim minority egos			.11 (.27)	
Non-Muslim minority alters			.01 (.28)	
Muslim minority alters			-1.03** (.31)	
Same ethno-religious group			-.62*** (.17)	
Female egos				-.52* (.22)
Female alters				-.26 (.27)
Same gender				.05 (.20)
Random part				
Var(dyads)	4.35	4.31	4.30	4.36
Var(alters)	1.91	1.95	1.69	1.86
Var(egos)	.65	.63	.64	.62
Fit statistics				
N_{dyads}	877	877	877	877
N_{alters}	220	220	220	220
N_{egos}	219	219	219	219
AIC	4092	4088	4077	4092

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-sided tests). Standard errors between parentheses.

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Nederlandse samenvatting

Achtergrond

In de afgelopen decennia is de etnische diversiteit in veel West-Europese landen sterk toegenomen. Zo bestond in de jaren '70 slechts 9% van de bevolking in Nederland uit eerste- en tweedegeneratie immigranten. Inmiddels is dit aandeel gestegen tot 25% in 2022. Deze toestroom van immigranten heeft het culturele landschap van West-Europa aanzienlijk veranderd. Terwijl West-Europese landen worden gekenmerkt door relatief progressieve waarden over bijvoorbeeld gender en seksualiteit, komen veel immigranten uit relatief conservatieve en Islamitische landen. Een deel van de bevolking zonder migratieachtergrond (de *etnische meerderheid*) beschouwt de meer conservatieve opvattingen van personen met een migratieachtergrond (de *etnische minderheid*) als een bedreiging voor hun seculiere en liberale cultuur, en daarmee voor de cohesie van West-Europese samenlevingen.

Het thema seksuele liberalisering speelt in dit maatschappelijke debat een centrale rol. Seksuele liberalisering verwijst naar de steun voor houdingen, beleid en normen die de seksuele autonomie van individuen stimuleren. Denk bijvoorbeeld aan abortus, seks voor het huwelijk en homoseksualiteit. Voor veel etnische meerderheden is seksuele liberalisering sterk verankerd in de nationale identiteit en democratische traditie van West-Europese landen. Zij stellen daarom dat de meer conservatieve etnische minderheden de tolerantie en individuele vrijheid bedreigen die kenmerkend zijn voor de maatschappij waarin zij leven.

Er is veel wetenschappelijk onderzoek gedaan naar de vraag waarom de houdingen van progressieve etnische meerderheidsgroepen en conservatieve etnische minderheidsgroepen over thema's als seksuele liberalisering zo verschillen. Deze studies benadrukken dat de waarden van etnische minderheden het resultaat zijn van verschillende en soms contrasterende sociale krachten. Enerzijds worden de waarden van etnische minderheden in de loop van de tijd steeds progressiever door blootstelling aan de nationale cultuur van West-Europese landen, bijvoorbeeld door contact met de etnische meerderheidsgroep of door werk en onderwijs. Anderzijds leiden andere factoren er juist toe dat hun waarden conservatiever worden. Denk hierbij aan contact met andere etnische minderheden of door hun verbondenheid met religieuze instituties.

Vanwege de grote culturele verschillen tussen etnische groepen voelen veel minderheden in West-Europa zich verbonden met twee ogenschijnlijk onverenigbare groepen. Enerzijds maken ze deel uit van een conservatieve etnisch-religieuze gemeenschap, maar anderzijds leven ze in een progressieve liberale samenleving. Veel etnische minderheden identificeren zich met zowel de etnische minderheid als meerderheid en maken ook onderdeel uit van sociale netwerken van beide

groepen. Dit levert een continu spanningsveld op voor etnische minderheden: terwijl progressieve houdingen rondom seksuele liberalisering niet worden ondersteund door conservatieve etnische minderheden, worden conservatieve houdingen niet getolereerd door de progressieve etnische meerderheden. Veel etnische minderheden schipperen daarom continu tussen de contrasterende verwachtingen van de progressieve meerderheidsgroep en de conservatieve minderheidsgroep, wat negatieve gevolgen heeft voor hun welzijn.

Ander onderzoek richt zich daarom op de vraag hoe etnische minderheden omgaan met deze conflicterende verwachtingen. Deze studies concluderen dat veel etnische minderheden hun gedrag aanpassen aan de verwachtingen van hun sociale omgeving (de *sociale norm*), in plaats van de cultuur van de etnische minderheid of etnische meerderheid consequent uit te dragen. Door middel van deze strategie kunnen ze ervoor zorgen dat ze geaccepteerd worden door beide groepen. Deze bevinding voegt een interessante nuance toe aan het huidige debat over de gevolgen van etnische diversiteit voor de samenleving. Hoewel een groot deel van dit debat zich richt op de culturele verschillen tussen etnische groepen, laten deze studies zien dat culturele verschillen zich niet noodzakelijk vertalen in gedragsverschillen. Met andere woorden: ook al zijn etnische minderheden gemiddeld genomen conservatiever dan de etnische meerderheid, zijn dit niet per se de houdingen die ze ook uitdragen. Dit komt doordat individuen hun gedrag aanpassen aan wat zij als passend beschouwen in hun sociale omgeving, zelfs wanneer dit gedrag niet overeenkomt met hun eigen voorkeur. Op basis van enkel de culturele verschillen tussen groepen kan je daarom mogelijk geen conclusies trekken over de gevolgen van etnische diversiteit voor de samenleving.

Doel van dit proefschrift

Er is nog veel onbekend over hoe etnische minderheden de cultuur van de etnische minderheid en etnische meerderheid combineren in hun dagelijks leven. Dit heeft meerdere redenen. Allereerst heeft voorgaand onderzoek veel gebruik gemaakt van enquête- en dagboekstudies om dit onderwerp te bestuderen. Gezien de gevoeligheid van dit onderwerp zijn deze methodes echter niet heel betrouwbaar, omdat deelnemers bij deze methodes zelf reflecteren op hun gedrag. Individen willen graag authentiek zijn en consequent handelen, en geven daarom mogelijk niet aan wanneer ze hun gedrag aanpassen aan hun sociale omgeving. Ook wordt in eerder onderzoek weinig aandacht besteed aan de verschillende strategieën die etnische minderheden kunnen gebruiken om om te gaan met de contrasterende verwachtingen. Het is bijvoorbeeld mogelijk dat ze besluiten om hun eigen mening helemaal niet te uiten wanneer deze niet overeenkomt met de sociale norm, of dat ze juist een mening uiten die haaks staat op hun persoonlijke voorkeur, maar die wel aansluit bij wat anderen vinden.

Daarnaast wordt er niet vaak gekeken naar de mogelijke gevolgen van dit gedrag. Wanneer iemand niet naar zijn persoonlijke voorkeur handelt, is het bijvoorbeeld mogelijk dat anderen niet goed kunnen inschatten wat diegene echt vindt. Omdat deze perceptie een belangrijke basis vormt voor het gedrag van anderen, zou dit er zelfs voor kunnen zorgen dat zij hun gedrag aanpassen aan dit onjuiste beeld (wat op zijn beurt weer kan leiden tot nog meer misperceptie bij anderen). Als laatste is eerder onderzoek voornamelijk uitgevoerd in offline omgevingen. In de afgelopen 20 jaar hebben maatschappelijke discussies zich echter steeds meer naar online omgevingen verplaatst. Dergelijke discussieplatforms zijn daarmee steeds belangrijker geworden om de publieke opinie over een onderwerp te peilen en om de eigen mening te vormen. Maar wanneer niet iedereen hun (ware) mening uit, zou het zomaar kunnen dat de online norm een vertekend beeld geeft van de werkelijke publieke opinie.

In dit proefschrift dragen wij op verschillende manieren bij aan voorgaand onderzoek naar dit onderwerp. Allereerst gebruiken we experimentele methodes om de gedragsstrategieën van individuen expliciet te meten, in plaats van dat de deelnemers zelf reflecteren op hun gedrag. Wij maken hierin onderscheid tussen twee soorten strategieën, namelijk het besluit om je mening niet te uiten wanneer deze niet aansluit op de sociale norm, en het besluit om een mening te uiten die aansluit op de sociale norm, ook al sluit deze mening niet aan op je eigen mening. Daarnaast kijken we naar de gevolgen van deze gedragsstrategieën. Specifiek onderzoeken we of het delen van meningen leidt tot een lagere misperceptie door anderen. Ook voeren wij ons onderzoek uit in zowel online als offline omgevingen. Wij doen dit door middel van een online discussieplatform dat wij zelf hebben ontworpen en met enquêtes die zijn afgenomen onder jongeren in schoolklassen.

Overzicht van dit proefschrift

Dit proefschrift onderzoekt in hoeverre, en onder welke omstandigheden, (i) etnische minderheden en etnische meerderheden publiekelijk steun uiten voor seksuele liberalisering, (ii) deze publieke uitingen hun persoonlijke voorkeuren weerspiegelen, en (iii) of het verschil tussen persoonlijke voorkeuren en publieke uitingen samenhangt met een (mis)perceptie van de persoonlijke voorkeuren door anderen. Hoofdstuk 2 onderzoekt welke sociale factoren van invloed zijn op de houdingen ten opzichte van homoseksualiteit onder scholieren met en zonder een migratieachtergrond. In Hoofdstukken 3 en 4 onderzoeken we in hoeverre, en onder welke omstandigheden, persoonlijke voorkeuren over seksuele liberalisering zich vertalen naar publieke uitingen. In Hoofdstuk 5 verleggen we onze focus naar een mogelijke consequentie van de discrepantie tussen persoonlijke meningen en publieke uitingen, namelijk dat

persoonlijke meningen verkeerd worden waargenomen door anderen. In de komende secties lichten wij de hoofdstukken in meer detail toe.

Hoofdstuk 2

In Hoofdstuk 2 onderzoeken we de relatie tussen de etnische samenstelling van de schoolklas en de houding ten opzichte van homoseksualiteit van middelbare scholieren. Hiervoor maken wij gebruik van de Children of Immigrant Longitudinal Survey in Four European Countries (CILS4EU), een enquête die is uitgevoerd onder 18.716 jongeren in 958 klassen in Engeland, Duitsland, Nederland en Zweden. We vinden dat studenten die in conservatievere schoolklassen zitten gemiddeld zelf ook een conservatievere houding ten opzichte van homoseksualiteit hebben. We hebben ook onderzocht of het effect van de schoolklas verschilt tussen studenten op basis van individuele kenmerken, zoals (i) de culturele afstand tussen de eigen cultuur en die van de klas (ii) het aandeel klasgenoten met dezelfde etniciteit en (iii) de etnisch-religieuze groep van de student (etnische meerderheid, niet-moslim minderheid, en moslim minderheid). We vinden echter weinig significante resultaten, die ook nog eens erg inconsistent zijn over de landen die we bestuderen. Hieruit concluderen we dat de klas een belangrijke socialiserende context is in de vorming van houdingen ten opzichte van homoseksualiteit, en dat de invloed van de klas relatief uniform is over verschillende groepen scholieren.

Hoofdstuk 3

In Hoofdstuk 3 onderzoeken we in hoeverre, en onder welke omstandigheden, de persoonlijke voorkeuren van etnische minderheden overeenkomen met de meningen die ze online uiten. Hiervoor bouwen wij een online discussieplatform waarop 188 tweede generatie Turkse en Marokkaanse Nederlanders deelnemen aan discussies over homoseksualiteit, abortus en seks voor het huwelijk. We onderzoeken hoe de persoonlijke mening van de deelnemers, en de overeenstemming van deze mening met de online norm, invloed heeft op de mate waarin deelnemers (i) hun mening uiten of niet en (ii) een mening uiten die overeenkomt met hun persoonlijke mening of niet.

We vinden dat de meningen die deelnemers online uiten over het algemeen overeenkomt met de meningen die ze hebben. Deelnemers zijn echter minder geneigd om hun persoonlijke mening te uiten, en meer geneigd om af te wijken van hun persoonlijke mening, wanneer de online norm niet overeenkomt met hun eigen mening (*incongruente discussies*) dan wanneer dit wel overeenkomt (*congruente discussies*). De samenhang tussen persoonlijke meningen en online uitingen is sterker voor progressieve deelnemers dan voor conservatieve deelnemers. Vergeleken met progressieve deelnemers zijn conservatieve deelnemers over het algemeen minder geneigd om hun mening te uiten en meer geneigd om van hun mening af te wijken.

Ook is voor conservatieve deelnemers het verschil tussen hun persoonlijke mening en hun online uitingen groter in incongruente online discussies dan in congruente online discussies. Voor progressieve deelnemers is dit niet het geval.

Hoofdstuk 4

In Hoofdstuk 4 bouwen wij voort op de resultaten van het vorige hoofdstuk door te kijken naar de rol van groepslidmaatschap in de relatie tussen persoonlijke meningen en online uitingen. Op een vergelijkbaar online discussieplatform nemen 280 Nederlandse deelnemers zonder migratieachtergrond en 251 deelnemers met een migratieachtergrond (Turkse en Marokkaanse Nederlanders) deel aan online discussies over homoseksualiteit en abortus. Deze online discussies vinden plaats onder Nederlanders zonder een migratieachtergrond of onder Turkse en Marokkaanse Nederlanders. We onderzoeken hoe de relatie tussen persoonlijke meningen en online uitingen wordt beïnvloedt door (i) de congruentie van de online norm met de persoonlijke meningen van de deelnemers en (ii) de overeenkomst in etniciteit met de andere deelnemers.

We vinden dat Turkse en Marokkaanse Nederlanders minder geneigd zijn om hun persoonlijke mening te uiten wanneer ze worden blootgesteld aan incongruente discussies onder Nederlanders zonder migratieachtergrond. In deze discussies zijn Turkse en Marokkaanse Nederlanders ook meer geneigd om af te wijken van hun persoonlijke mening. Voor Nederlanders zonder migratieachtergrond vinden we juist het tegenovergestelde: wanneer zij worden blootgesteld aan een incongruente discussie onder Turkse en Marokkaanse Nederlanders zijn zij juist meer geneigd om hun mening te uiten en minder geneigd om af te wijken van deze mening.

Hoofdstuk 5

In Hoofdstuk 5 bestuderen wij in hoeverre studenten de mening over homoseksualiteit van hun klasgenoten verkeerd inschatten, en in hoeverre deze misperceptie van invloed is op hun bereidheid om hun eigen mening te delen. Om dit te onderzoeken hebben we een enquête uitgezet onder 234 studenten in 26 klassen op een grote mbo-school in Nederland. Eerst onderzoeken we hoe verschillende kenmerken van de sociale relaties van studenten (vriendschap en groepslidmaatschap) de misperceptie van meningen over homoseksualiteit beïnvloeden. Vervolgens bestuderen we hoe deze (mis)perceptie de bereidheid van studenten om de eigen mening te delen beïnvloedt. Dit doen wij door de huidige bereidheid te vergelijken met een hypothetische situatie waarin studenten de meningen van anderen volledig nauwkeurig waarnemen.

We vinden dat mispercepties van meningen over homoseksualiteit veel voorkomen in de klas: gemiddeld genomen denken studenten dat anderen conservatiever zijn dan dat deze klasgenoten zelf aangeven. Ook overschatten studenten in hoeverre hun mening

overeenkomt met die van anderen. We vinden dat de gemiddelde misperceptie lager is voor vrienden (vergeleken met niet-vrienden) en voor klasgenoten die tot dezelfde etnisch-religieuze groep behoren (vergeleken met een andere groep). Studenten zijn meer bereid om hun mening te delen met anderen van wie zij denken dat zij dezelfde mening hebben. Ook zijn studenten meer bereid om hun mening te delen met progressieve klasgenoten, bevriende klasgenoten en klasgenoten die tot dezelfde etnisch-religieuze groep behoren.

Wanneer we de mispercepties corrigeren in onze hypothetische situatie, zijn studenten meer bereid zijn om hun mening te delen met anderen van wie ze oorspronkelijk dachten dat ze een hele verschillende mening hadden. Ook zijn studenten minder bereid om hun mening te delen met klasgenoten van wie zij oorspronkelijk dachten dat ze progressief waren (want eigenlijk is hun mening conservatiever). Daarnaast vinden we slechts een kleine afname in de bereidheid om meningen te delen met vrienden, en een kleine toename in de bereidheid om meningen te delen met klasgenoten uit dezelfde etnisch-religieuze groep. Deze veranderingen zijn zo klein omdat studenten meer bereid zijn om hun mening te delen met vrienden en klasgenoten uit dezelfde etnische-religieuze groep, of ze nou dezelfde mening hebben of niet.

Conclusie

In het huidige publieke en politieke debat worden de culturele verschillen tussen etnische groepen regelmatig beschouwd als een bedreiging voor de samenhang van West-Europese samenlevingen. Deze dissertatie toont echter aan dat, hoewel de culturele verschillen tussen etnische groepen groot kunnen zijn, deze verschillen zich lang niet altijd vertalen in gedragsverschillen. Individuen passen hun gedrag namelijk aan aan de sociale normen die zij waarnemen in hun omgeving, zelfs als dit betekent dat hun gedrag niet aansluit op hun persoonlijke voorkeuren. Doordat voorgaand onderzoek zich voornamelijk concentreert op de culturele verschillen tussen groepen, zonder rekening te houden met de sociale context waarin deze houdingen tot uiting komen, leren we daarom weinig over hoe etnische diversiteit van invloed is op hedendaagse samenlevingen. Sterker nog: de culturele verschillen die in voorgaand onderzoek worden gevonden, dragen mogelijk alleen maar bij aan de marginalisering van etnische minderheidsgroepen door te suggereren dat zij zich niet of nauwelijks aanpassen aan de nationale cultuur van West-Europese samenlevingen. In deze dissertatie vinden we echter precies het tegenovergestelde: terwijl conservatieve etnische minderheden zich aanpassen aan progressieve normen van de etnische meerderheid, passen progressieve etnische minderheden en etnische meerderheid zich niet aan aan de conservatieve normen van etnische minderheden. De resultaten van dit proefschrift benadrukken hiermee de cruciale rol die de sociale context speelt bij het vormgeven van gedragsuitkomsten van etnische minderheids- en meerderheidsgroepen.

Dankwoord

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Biography

Nick Harmen Wuestenenk was born in Rotterdam on August 28th, 1994. He obtained his bachelor's degree in Arts and Culture Studies (2016) and Sociology (2017) at the Erasmus University Rotterdam. In 2019, he completed the research master program Sociology and Social Research at Utrecht University, graduating cum laude. In the same year, he started his Ph.D. titled 'Ethnic Diversity, Norms, and Social Networks' at Utrecht University, as part of the Interuniversity Center for Social Science Theory and Methodology (ICS) and Sustainable Cooperation – Roadmaps to Resilient Societies (SCOOP). He was supervised by Prof. dr. Frank van Tubergen, dr. Tobias Stark, and Prof. dr. Naomi Ellemers. As part of his Ph.D., he spent two months at the European University Institute in Florence as a visiting Ph.D. student under the supervision of Prof. dr. Arnout van der Rijt. Currently, he works as a researcher in Housing & Demography at ABF Research in Delft.

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