Outgroup Avoidance[*]

Alexandra Scacco[†]   Alexandra Siegel[‡]   Chagai M. Weiss[§]

July 26, 2023

Abstract

Encouraging engagement with outgroup perspectives is a popular strategy to improve inter-group relations. But in deeply divided societies, individuals often actively avoid outgroup members. In a Facebook field experiment, we embedded Palestinian posts in Jewish Israelis' Facebook timelines for a period of 14 days. We find no effect on attitudes toward the outgroup and a modest decrease in subsequent consumption of outgroup content, a pattern we attribute to participants' avoidance of constructive engagement. To better understand this avoidance, we conducted a set of survey-embedded behavioral tasks. Results suggest that outgroup avoidance online is widespread, associated with outgroup prejudice, explained by feelings of discomfort, anger, mistrust in outgroups, and pessimism, and challenging to overcome. Our findings indicate that avoidance is a barrier to constructive intergroup engagement in naturalistic settings, rendering many interventions that may be effective in controlled environments difficult to implement or scale in practice.

[†]Senior Research Fellow, WZB Berlin. ✉: alex.scacco@wzb.eu
[‡]Assistant Professor, University of Colorado at Boulder. ✉: alexandra.siegel@colorado.edu
[§]Postdoctoral Fellow fellow, Stanford University. ✉: cmweiss@stanford.edu

Decades of social science research points to engagement with outgroup members and their viewpoints as a means to improve intergroup relations under optimal conditions.[1] Scholars have designed various interventions to promote ideal forms of outgroup exposure. From crafting soap operas that provide positive representations of outgroups (White et al., 2021), to integrating soccer leagues in post-conflict settings (Mousa, 2020), and exposing individuals to the perspectives of particularly likable outgroup members (Ramasubramanian, 2015), recent studies offer a wealth of creative approaches to engineering interactions that are most likely to improve intergroup relations.

But opportunities for optimal forms of intergroup engagement are often extremely limited outside of carefully curated experiments, particularly in conflict and post-conflict settings. In deeply divided societies, segregation can pose steep social, economic, and psychological barriers to intergroup engagement (Enos, 2017; Joyce and Harwood, 2014; Alrababah et al., 2021; Landry and Halperin, 2023). Self-selection into information environments that reinforce existing opinions, beliefs, and identities can further reinforce patterns of outgroup avoidance (Takahashi, Jefferson and Earl, 2023; Landry and Halperin, 2023). As Schieferdecker and Wessler (2017) conclude, "those who would potentially benefit the most from outgroup exposure might also be those who are least likely to be exposed."

While recent research suggests that social media might help to overcome some of these barriers (Aday et al., 2010; Siegel et al., 2021; Levy, 2020; Asimovic et al., 2021), the homogeneity of online networks often limits the potential for online information to cross group lines. Moreover, online content created organically in conflict settings is rarely designed for outgroup consumption, making it less than optimal for use in cross-group engagement. Content that is extreme or contains anti-outgroup messaging tends to "go viral" and reach wider audiences than moderate or conciliatory content (Rathje, Van Bavel and Van Der Linden, 2021). Additionally, content often becomes more extreme and ideologically polarized during major news events, when people are most likely to be engaged online (Jakli, 2020).

Given these challenges, we ask whether online encounters with outgroup viewpoints in more naturalistic settings can actually reduce prejudice and promote intergroup engagement. The literature on social media's potential in this area is only just emerging, with few studies providing direct causal evidence of the effects of online exposure to outgroup-generated content on intergroup at-

---

[1]Exposure to diverse viewpoints —through in-person discussion or media—may promote tolerance through multiple channels. One set of channels focuses on the role of new information in countering prior beliefs about outgroups as monolithic, unchanging, or unreasonable (Mutz, 2001, 2002; Prentice, N.d.; Paluck, 2010; Siegel et al., 2021), or by increasing perceived similarities between ingroup and outgroup members (Batson, 2009; Galinsky and Moskowitz, 2000). Intergroup contact (Allport, 1954)—including vicarious, mediated, or parasocial contact—has also been shown to curb prejudicial attitudes and behavior through non-informational channels, for instance, by reducing anxiety about outgroup encounters and fostering empathy for outgroup members (Pettigrew and Tropp, 2006; Paluck, Green and Green, 2018; Paluck et al., 2020; Scacco and Warren, 2018; Mousa, 2020; Lowe, 2020; Weiss, 2021).

titudes or behaviors.[2] To address this question, we examine the effects of exposure to outgroup viewpoints in Jerusalem, a deeply divided city, where optimal conditions for positive exposure are difficult to achieve.

We first use quantitative text analysis of data from public Facebook pages in Jerusalem to document that Israeli and Palestinian online social networks are highly segregated and focus on dramatically different topics (Figure 1). We then examine the consequences of desegregating online environments by conducting a Facebook field experiment in collaboration with a Jerusalem-based NGO that translates popular Facebook posts and disseminates them to Facebook users across religious communities in Jerusalem in an attempt to promote information across group lines and bridge social divides (Study 1).[3] To do so, we randomly assigned Jewish Israeli Facebook users residing in West Jerusalem to receive daily posts containing stories about the life of Palestinians in East Jerusalem in their newsfeeds for two weeks, and collected attitudinal and behavioral outcomes 1 to 14 days post-treatment. We find that exposure to Palestinian posts does not meaningfully affect Jewish Israelis' attitudes toward Palestinians or spark self-reported interest in consuming additional outgroup-oriented content. Our behavioral measures suggest that, in fact, exposure to outgroup posts modestly reduces subsequent online engagement with Palestinian content. We argue and provide suggestive evidence that exposure may be ineffective in shaping intergroup attitudes because Jewish Israelis actively avoid constructive engagement with Palestinian viewpoints when they come across this content on Facebook.

Seeking to better understand the prevalence, correlates, and motivations of outgroup avoidance online, we designed a set of survey-embedded behavioral exercises (Study 2) in which we asked respondents to select and engage with Facebook posts written by Jerusalem residents from various social groups, including Palestinians. We find that Jewish-Israeli survey respondents generally avoid engaging with Palestinian content, and this avoidance is correlated with individual-level attributes such as baseline prejudice, religiosity, and right-leaning ideology. Additionally, avoidance is often motivated by feelings of discomfort and anger, mistrust of outgroup sources, and pessimism about the future of intergroup relations. These findings demonstrate that a strong preference for avoidance is a central challenge for designing and scaling naturalistic interventions to increase constructive online exposure to outgroup viewpoints.

Motivated by the results of Study 1 and Study 2, we designed and tested a range of theoretically-informed strategies to combat intergroup avoidance and encourage constructive Jewish-Israeli engagement with Facebook content written by Palestinians (Study 3). Specifically, we modified the

---

[2]For a detailed discussion of this emerging literature, see pages 7-8.

[3]This experiment was designed to help our partner NGO determine whether the content they create can increase West Jerusalem residents' interest in Palestinian current events.

behavioral task featured in Study 2, by randomly assigning survey respondents to receive brief treatments aimed at addressing the most commonly articulated reasons for outgroup avoidance before asking them whether they would like to engage with Facebook posts written by various social group members, including Palestinians. Our results suggest that most treatments did not reduce avoidance. Apart from providing monetary incentives, which successfully reduced avoidance of Palestinian posts, and providing fact-checking labels, which marginally reduced avoidance, all other approaches yielded small and imprecisely estimated effects.

Taken together, our findings highlights two central challenges of applying lessons from "optimally engineered" intergroup interactions to real-world, organic exposure in deeply divided societies. First, even if language barriers can be overcome, and content is shared across group lines, the type of content that is most likely to be produced within ingroup social networks may not improve attitudes toward outgroup members. Second, even if researchers and policymakers are able to identify the optimal content for outgroup consumption, entrenched patterns of avoidant behavior may simply be too difficult to overcome. Indeed, we demonstrate that avoidance is commonplace and persistent. Moreover, other than paying ingroups to engage with outgroup content, none of our theoretically informed approaches effectively reduced avoidance. This points to the need to find creative ways to align people's incentives with positive exposure to outgroups.

This paper proceeds as follows: The next section provides background on our case and offers observational evidence of segregation of Israeli and Palestinian social networks. In the following sections we present theory, research designs, and findings for Studies 1 (Exposure field experiment), 2 (Avoidance behavioral task), and 3 (Avoidance reduction experiment) respectively, followed by our discussion and conclusion.

Jerusalem: Deeply Segregated On- and Offline

Our research focuses on Jerusalem, a city marked by severe residential and social segregation and cycles of violent intergroup conflict. The origin of Jerusalem's segregation is rooted in the aftermath of the 1948 war, when control of the city was divided between Israeli and Jordanian rule. Following the 1967 war, Israel gained control over the Eastern-Palestinian component of the city, and later annexed this territory and the Palestinians residing within it (Bollens, 2000).

Scholars of Jerusalem's politics and geography have suggested that "social integration is virtually nonexistent," and argue that intergroup dynamics in Jerusalem have "psychological power to foment violence and conflict" across Israel (Shlay and Rosen, 2010). As of 2019, nearly a million people live in Jerusalem. 38% of these residents are Palestinian, while the other 62% of residents

in Jerusalem are Jewish-Israeli (Korach and Hoshen, 2021). Understanding intergroup relations in Jerusalem requires paying close attention to two key dynamics: state repression and segregation.

State Repression

Palestinians living in Jerusalem face routine hardships, as a direct consequence of municipal and national policies directed to promote Jewish control over the contested city (Yiftachel and Yacobi, 2006). For example, the Israeli state has confiscated significant portions of Palestinian land in East Jerusalem, in order to build large-scale Jewish neighborhoods, while devoting limited resources toward urban planning and development in Palestinian areas of the city (Shlay and Rosen, 2010; Nassar, 2015). Moreover, since Palestinian neighborhoods do not have recognized urban zoning plans, newly constructed Palestinian homes are often considered "illegal" under municipal or national laws. These homes are therefore often subject to threats of demolition (Freedman and Klor, 2022; Shlay and Rosen, 2010).

State repression extends beyond matters relating to land inequality and urban development. Palestinians in Jerusalem are heavily policed and surveilled (Abu Zayad, 2015). Such policing is often invasive, for example, disrupting cultural or sporting events, and classifying them as illegal national Palestinian activities (Avni, 2020). Further complicating life in East Jerusalem is the fact that most Palestinians living in the city are Jerusalem residents but not Israeli citizens. Under this legal status, Palestinian residents of Jerusalem are eligible to receive Israeli healthcare, social security, and municipal voting rights, but they cannot vote for the national parliament, and they must pay taxes and remain living in Jerusalem, in order to maintain their legal status (Shlay and Rosen, 2010). Accordingly, Palestinians are a vulnerable community whose legal status can be revoked by the Israeli state.

Segregation

The social and geographic segregation of Jerusalem makes it easy for Jewish Israelis to avoid information about the challenges Palestinian residents of the city routinely face. Segregation is a strikingly salient feature of residential patterns and social life in Jerusalem. The city is politically and socially divided into two segments: West Jerusalem — overwhelmingly comprised of Jewish Israeli neighborhoods — and East Jerusalem — largely made up of Palestinian neighborhoods (Rokem, Weiss and Miodownik, 2018). Public service provision in Jerusalem is also highly segregated. For example, within Jerusalem, there are two public transportation systems, and two education systems, which provide separate services for Jewish residents in West Jerusalem and Palestinian residents in East Jerusalem (Romann, 2006).

Despite these stark patterns of residential segregation and institutional separation, it is not uncommon for Jewish and Palestinian residents of Jerusalem to cross paths with each other in daily life. Intergroup contact between both groups occurs in commercial spaces (e.g, shopping malls), public parks, and health clinics, typically located in Jewish segments of the city. Unlike Palestinians, who may have many reasons to venture into West Jerusalem (such as employment or access to services), Jewish residents of Jerusalem are much less likely to visit Palestinian neighborhoods in East Jerusalem (Shtern, 2015). This disparity has been exacerbated as a result of violence that occurred during the First and Second Intifadas (Romann, 2006; Shlay and Rosen, 2010). In light of these patterns, Jewish Israeli residents of Jerusalem are relatively uninformed about the realities of day-to-day life in Palestinian neighborhoods of Jerusalem.

The adverse consequences of segregation in Jerusalem are exacerbated by linguistic barriers, which inhibit Jewish Israelis' ability to consume any type of native content about Palestinian life in East Jerusalem. Not only is Jerusalem a physically segregated city, but recent research suggests that Jewish and Palestinian online spaces are highly segregated as well (Mor, Ron and Maoz, 2016; Lissitsa, 2017; Harel, Jameson and Maoz, 2020). In a 2017 representative survey of Jewish Israelis who regularly use social media, about three-quarters of respondents reported no online contact with Arabs whatsoever, 17% reported low frequency of online contact, 6% reported medium frequency and only 3% indicated high or very high frequency of online contact with Arabs (Lissitsa, 2017). Given these high levels of segregation both on and offline, Jerusalem is an important case for studies of desegregation, and specifically studies that consider how outgroup exposure online may affect social and political attitudes.

Not only is online intergroup engagement rare, but our analysis of data from public Facebook pages and groups from local communities in East and West Jerusalem indicates a city divided in the substance of its online content. While state repression and Israeli-Palestinian relations are highly salient for Palestinians, they are rarely discussed by Israelis.[4] Figure 1 shows the results of structural topic models (Roberts et al., 2013),[5] displaying the most prevalent topics in public Facebook groups and pages from East Jerusalem (left) and West Jerusalem (right). Top topics from the East Jerusalem neighborhood pages often reference political violence and state repression. These include Violence and Clashes, Demolitions and Destruction, Israeli Crimes, Movement Restrictions, Martyrs, and Prisoners. Dictionary analysis also suggests that discussion of the occupation

---

[4]We searched Crowdtangle for all public groups and pages with neighborhoods in East or West Jerusalem (in Arabic of Hebrew respectively) in their names. We added each page with over 1000 followers to the Crowdtangle database and downloaded all posts from 2018-2022.

[5]Topic models are a form of unsupervised machine learning that automatically infers latent topics from text. Topics are defined as distributions over a vocabulary of words that represent semantically interpretable themes. We estimate separate topic models for the Arabic and Hebrew datasets. We use the R package `quanteda` to pre-process our data (removing punctuation, URLs, and stopwords) and the R package `stm` to conduct our analysis.

(a) Top Topics on East Jerusalem Pages & Groups

(b) Top Topics on West Jerusalem Pages & Groups
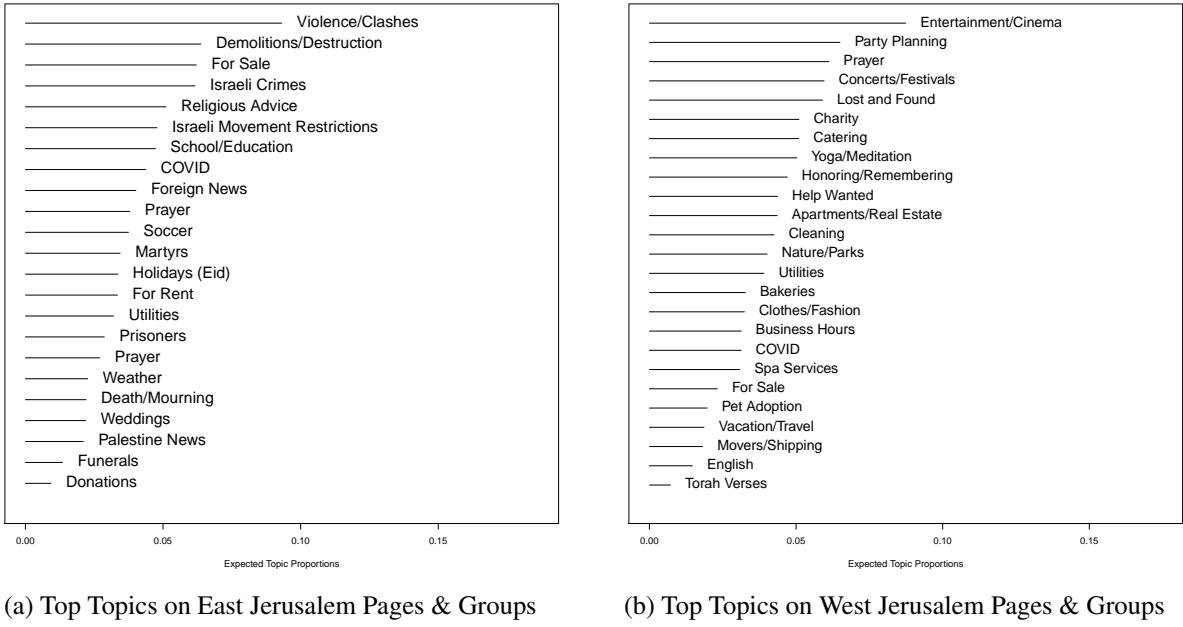
Figure 1: **Conflict-related topics are the most prevalent topics of Facebook posts from Palestinians in East Jerusalem. However, conflict is rarely discussed in posts written by Jewish-Israelis from West Jerusalem.** This figure reports structural topic models displaying the most prevalent topics in posts on public groups and pages from East and West Jerusalem neighborhoods.

is highly salient for Palestinians, with one in every five posts referencing the occupation. On the West Jerusalem pages, there is extremely little discussion of the conflict or of Palestinians with top topics including Entertainment and Cinema, Party Planning, Prayer, Concerts and Festivals, Catering, Lost and Found, Yoga and Meditation, Help Wanted, and Nature and Parks. Dictionary analysis suggests that fewer than 1% of posts on average reference either Palestinians, violence, or intergroup conflict.

The differences in topics discussed on East and West Jerusalem community Facebook pages are striking, and they follow a commonly observed pattern in which group identity and intergroup conflict are typically more salient for members of subordinated groups than for members of dominant groups (Pratto and Stewart, 2012). Indeed, the ability to avoid thinking about intergroup divisions or conflict is itself a privilege afforded to members of dominant groups (Tropp et al., 2006).

6

Study 1: Bridging Information Gaps in Jerusalem

To test the effects of desegregating online environments and exposing Jewish Israelis to Palestinian points of view, we first designed and implemented a pre-registered[6] Facebook field experiment from November 2020 to February 2021 in Jerusalem. In the experiment, we exposed a sample of Israeli residents of West Jerusalem to content produced by Palestinian residents of East Jerusalem at least once per day over a 14-day period.

To carry out our first study, we partnered with a Jewish-Palestinian NGO that seeks to combat online segregation by exposing Jerusalem residents to a more diverse set of Facebook posts about community and daily life across the city. The organization's mission is to provide an unfiltered glimpse into the daily life of different communities in Jerusalem. To that end, they translate Arabic-language Facebook posts about local Jerusalem experiences into Hebrew (and vice versa) and post this content daily in their 35,000+ Facebook followers' news-feeds. As we describe below, our study evaluates how Jewish residents of Jerusalem who do not already follow our partner NGO's Facebook page react to exposure to this type of content.

Facebook is well-suited for a test of the effects of exposure to Palestinian viewpoints and experiences. Israel leads the world in social media use, with 77% of the population using social media as of 2019 (Taylor and Silver, 2019). Social media marketing data suggests that around 85% of Israeli internet users regularly use Facebook, and Israelis spend an astounding average of eleven hours daily on social networks, which is almost double the world average of six hours (Stats, 2018). The following sections describe Study 1's theoretical motivation, experimental design, and primary results.

Theoretical Motivation

A large and growing body of evidence suggests that residential segregation along ethnic, racial, or religious lines can impair intergroup relations. Geographical segregation in diverse societies has been shown to erode intergroup trust (Kasara, 2013; Robinson, 2020), increase prejudice (Enos, 2017), discrimination (Enos and Gidron, 2018; Scacco and Warren, 2018) and violent conflict (Kasara, 2017; Scacco, 2023). The negative consequences of segregation are a result of multiple mechanisms. In settings as diverse as Kenya, Nigeria, Israel, and the United States, segregation has been shown to increase the salience of boundaries and the psychological distance between groups (Enos, 2017), heighten fear of outgroup members and anxiety about intergroup encounters (Pettigrew and Tropp, 2006), exacerbate local-level security dilemmas (Scacco, 2023), and in-

---

[6]Our design was pre-registered at: https://osf.io/xz2yv/

crease incentives for political elites to stoke communal tensions, making it easier for perpetrators of communal violence to justify their behavior (Kasara, 2017). Simply spending more time around ingroup members can lead to higher levels of discrimination against outgroups (Enos and Gidron, 2018), particularly if higher levels of generosity within groups come at the expense of cross-group generosity (Scacco and Warren, 2018).

Online segregation—amplified by language barriers and limited information about how to access outgroup networks (Asimovic, 2023)—can have similarly negative consequences for intergroup relations. Recent studies suggest that spending more time in homogeneous social media networks increases intolerance and polarization (Siegel et al., 2021; Levy, 2020; Stroud, 2010), and amplifies the spread of misinformation (Acemoglu, Ozdaglar and Siderius, 2021; Rhodes, 2022), extremist content, and hate speech (Siegel and Badaan, 2020; Goel et al., 2023).

Because real-world opportunities to overcome segregation are often limited, techno-optimists argue that social media has created new opportunities for individuals from different groups to gather and interact, breaking down barriers between groups (Amichai-Hamburger and McKenna, 2006; Schwab and Greitemeyer, 2015). Existing evidence on the effects of exposure to outgroup perspectives on social media has only begun to emerge, however, and early findings are mixed. Levy (2020) demonstrates that exposure to counter-attitudinal news in the United States can improve attitudes toward the opposing political party. Similarly, Siegel et al. (2021) find that Egyptian Twitter users embedded in more diverse networks express more tolerant views over time. Along these lines, Asimovic et al. (2021) finds that individuals who are randomly assigned to deactivate Facebook during periods of intergroup tension in Bosnia express more prejudice toward outgroups than those who remain online. In contrast, Bail et al. (2018) provide evidence from the U.S. context that exposure to opposing political views on Twitter may actually increase ideological polarization, while Guess and Coppock (2020) find little to no effect of exposure in three large-scale survey experiments.

Given these disparate findings, we do not yet have clear expectations about the effect of exposure to Palestinian viewpoints on Jewish attitudes and behaviors. On the one hand, online exposure to perspectives from Palestinians living in the same city might generate empathy by humanizing and differentiating between outgroup members, sparking interest in consuming additional information about outgroup viewpoints among Jewish Jerusalem residents. On the other hand, we might expect exposure to be ineffective at reducing prejudice or promoting intergroup engagement if it reinforces negative beliefs, triggers concerns about outgroup threat, or encourages Jewish participants to attempt to justify or defend the behavior of Israeli state authorities in East Jerusalem. Importantly, providing rigorous empirical evidence on the effects of online exposure is essential not only to inform ongoing theoretical conversations but also to shed constructive, empirical, and

theoretical light on the impact of our partner organization's routine activities.

Experimental Design

To test whether online exposure to outgroup narratives shapes attitudes and behavior, we designed and implemented a field experiment in collaboration with our partner organization. The goal of the experiment was to evaluate the routine activities of our partner organization, and determine whether and how their work may affect Jerusalem Facebook users' attitudes and online behavior. Our experiment followed four steps, including: (1) a baseline survey, (2) a 14-day Facebook intervention exposing treated participants to daily posts from our partner organization, (3) an endline survey, and (4) two post-treatment behavioral measures. Figure 2 summarizes this design, which we describe in more detail below. For a detailed discussion of ethical considerations, please refer to the supplementary materials.
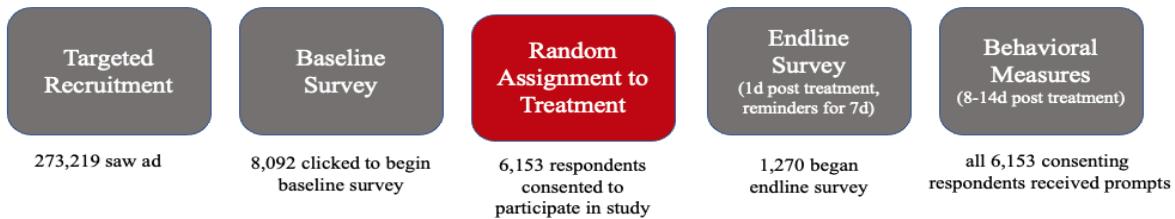
Figure 2: **Primary Experimental Design**

Recruitment and Baseline Survey

To recruit participants, we targeted Jewish Facebook users from West Jerusalem with advertisements in Hebrew inviting them to participate in two waves of a short survey. To encourage participation, we offered respondents the opportunity to enter a raffle to win an iPhone as well as ten 50 NIS (Israeli Shekel) vouchers.[7] Participants who clicked on our advertisement were redirected to Facebook Messenger, where we administered our survey natively within Messenger using a digital marketing platform called SurveyBot.[8]

---

[7]This recruitment strategy is not expected to yield a representative sample of Facebook users from Jerusalem. However, evidence regarding the similarity of average treatment effects implemented on convenience and representative samples (Mullinix et al., 2015) increases our confidence that even if our sample is not representative of the population of Facebook users in Jerusalem, our average treatment effects will be a meaningful quantity of interest.

[8]For more information about SurveyBot see: https://surveybot.io/.

If respondents consented to participate in the baseline survey, they were asked a short set of demographic questions, feeling thermometer questions about several types of outgroups, questions relating to empathy and perspective-taking, and items relating to social media consumption. The survey was designed to take no more than ten minutes to complete. A description of all items collected in our baseline survey is depicted in Section S1.3 of the supplementary materials.

Our recruitment advertisement reached 273,219 unique Facebook users living in Jersualem. This is about 40% of the 700,000 estimated Facebook users living in Jerusalem.[9] 8,092 people clicked on the ad to take our baseline survey. This represents a 3% click-through rate, about three times the average rate for ads across industries.[10] 6,153 of these individuals consented to participate in our study. Of the 6,153 people who consented to participate in our study, 4,532 answered at least one baseline survey question and 3,041 completed all 23 questions at baseline.

Treatment

To administer treatment, we focused on Jewish Facebook users living in Jerusalem who consented to participate in our study, even if those consenting users did not complete our baseline survey, and randomly assigned them to receive 14 posts in their Facebook newsfeeds over a period of two weeks (approximately one post per day). Users were block randomized by self-reported political leaning,[11] to receive Facebook posts about Palestinians' daily lives in East Jerusalem, which largely focus on Palestinians' interactions with Israeli authorities. Common topics in these posts include arrests, destruction of property, targeted violence, harassment by state authorities, and other difficult features of daily life. We present an example post in Figure 3, and the full set of post in Section S1.1 of the appendix.

The content of these posts may seem unpleasant. However, they reflect the topics that most frequently appear on public Palestinian Facebook pages, as Figure 1a demonstrates. Moreover, the posts we select for our treatment have been employed by our partner organization as part of their routine activity, in an attempt to bridge information gaps in Jerusalem.[12]

Because the SurveyBot platform we employ to collect baseline data stored unique identifiers

---

[9]Estimate provided by Facebook's Ads Manager.

[10]https://bit.ly/39w9n50

[11]Our right-left ideology score ranges from 1-7, and study subjects who did not respond to this question were randomized as an eighth block into treatment and control conditions.

[12]Our design also allows us to compare the effects three treatments (1) Facebook posts about Palestinians' interactions with Israeli that center the stories of individuals (personal posts), (2) Facebook posts about Palestinians' interactions with Israeli authorities that do not highlight individual stories (non-personal posts), 3) A more diverse set of Facebook posts employed by our partner organization at the time of the study. We present disaggregated analyses of our various treatment effects in the appendix and focus on pooled analysis in the main paper.

Figure 3: **Example of 0202 Facebook Post.** This post provides information about the arrest of a Palestinian woman working as a head of guards in the al-Aqsa mosque.

for each person who consented to participate in our study, we were able to randomly assign each treated individual to receive Palestinian content in their personal Facebook newsfeeds. Targeting individuals with Facebook advertisements does not guarantee that the ads will appear on their newsfeeds, but we optimized spending to increase the visibility of our ads. According to Facebook Ads Manager metrics, 92% of our treated participants saw our ads over the course of the treatment period, and these users saw an average of 14.3 posts, suggesting that the vast majority of our treated users indeed received all 14 days of treatment.[13]

Our treatment ads received high levels of engagement relative to typical Facebook ads. The click-through rate for our ads was 12%, more than 12 times the average click-through rate of promoted posts on Facebook. This offers some reassurance that our treatment was delivered effectively to study participants' newsfeeds. In turn, study participants interacted with our experimental content at much higher rates then the common interaction with promoted posts on Facebook.

Outcomes

One day after the treatment period, we invited all subjects to participate in an endline survey by sending them a private message via SurveyBot. To increase response rates, we sent reminders to

---

[13]In some cases, study subjects saw the same post more than once on their Facebook timelines.

subjects for seven additional days. Our endline includes measures of attitudes toward the outgroup —including prejudice, empathy, perspective-taking— and interest in consuming outgroup-oriented media. A detailed description of all attitudinal outcomes used in the main analysis is reported appendix S1.4. Like the baseline survey, the endline was administered natively within Facebook Messenger using SurveyBot.

Out of a total of 6,153 treated Facebook users, 1,270 users responded to at least one question on the endline survey. In Section S1.6 of the appendix, we address potential concerns that might arise from attrition in three ways. First, we demonstrate that treatment status does not predict participation in our endline survey. Second, we show that treatment status does not predict non-response to particular questions on our endline survey. Third, we use baseline survey data to examine correlates of participation in the endline. We are reassured by the fact that, although age and gender predict endline participation, religiosity and affect towards Palestinians (measured via a feeling thermometer) do not correlate with non-response to our survey.

We supplemented our endline survey with two behavioral measures tracking whether users click on promoted advertisements embedded in their Facebook newsfeeds. As reported in Figure 4, these promoted advertisements asked respondents to (1) click in order to follow a Facebook page sharing news from East Jerusalem, and (2) click in order to watch a video sharing the perspective of an East Jerusalem Palestinian resident. Both behavioral outcomes were measured from 8 to 14 days after the treatment period. Because behavioral measures were administered to all consenting participants in our study—whether or not they completed a baseline or endline survey—they do not suffer from the same attrition concerns as our attitudinal measures.

Results

In the left-hand panel of Figure 5 we report treatment effects on our main measures of attitudes toward the outgroup — affect toward Palestinians, beliefs about whether Palestinians want to live in peace, an empathy index (composed of one measure of empathy for the outgroup and one measure of respondents' beliefs about the importance of perspective-taking), and an exposure index (measuring respondent interest in being exposed to Palestinian viewpoints). These estimates are taken from OLS models in which we regress an outcome of interest over a treatment indicator, block fixed effects, and pre-treatment outcome measures (when available). We find no evidence that treatment affected attitudes toward Palestinians. Across all attitudinal outcomes, point estimates are very small and imprecisely estimated.

The right-hand panel displays the effects of treatment on revealed preferences for additional exposure to outgroup content. Focusing on these behavioral outcomes, we find a modest *decrease*

(a) Like 0202 Page Ad
(b) Watch Video Ad

Figure 4: **Behavioral Measures.** The left-hand side advertisement states: "Interested in learning what is happening in East Jerusalem? Follow 0202 Points of View from Jerusalem in order to receive daily updates regarding Palestinian life in Jerusalem." The right-hand side advertisement states: "Palestinians in East Jerusalem experience many challenges in their daily life. Take a moment to view a video about these challenges."

in treated subjects' engagement with additional outgroup viewpoints, as measured by following our partner organizations' Facebook page. While the effect on study subjects' willingness to watch a video on Palestinian experiences in East Jerusalem is imprecisely estimated, the direction of the effect is negative as well. Finally, our combined measure of behavioral engagement is negative and precisely estimated, suggesting that sustained exposure to Palestinian Facebook content for a period of fourteen days modestly reduced Jewish Israelis' future engagement with Palestinian content online.

The findings reported in Figure 5 suggest that exposure to organically generated outgroup viewpoints on Facebook does not shift prejudice and modestly increases avoidant behavior. Our pre-registered analyses in Study 1 do not provide direct evidence on the matter; however, we posit that our treatments were largely ineffective due to Jewish Israelis' limited interest in constructively engaging with Palestinian content. Although the click-through rate on our treatment posts was high relative to average promoted posts, other forms of engagement were quite low, with just 3% of participants leaving comments and 5% of participants leaving emoji reactions on treatment posts.

Exploratory analysis suggests that comments (which were hidden from other participants using content moderation filters) were typically negative in tone, often expressing frustration with seeing Palestinian content at all. Similarly, the most common reaction emojis left on our posts (also not visible to study other participants) were angry faces and laughing faces (likely expressing sarcasm

13
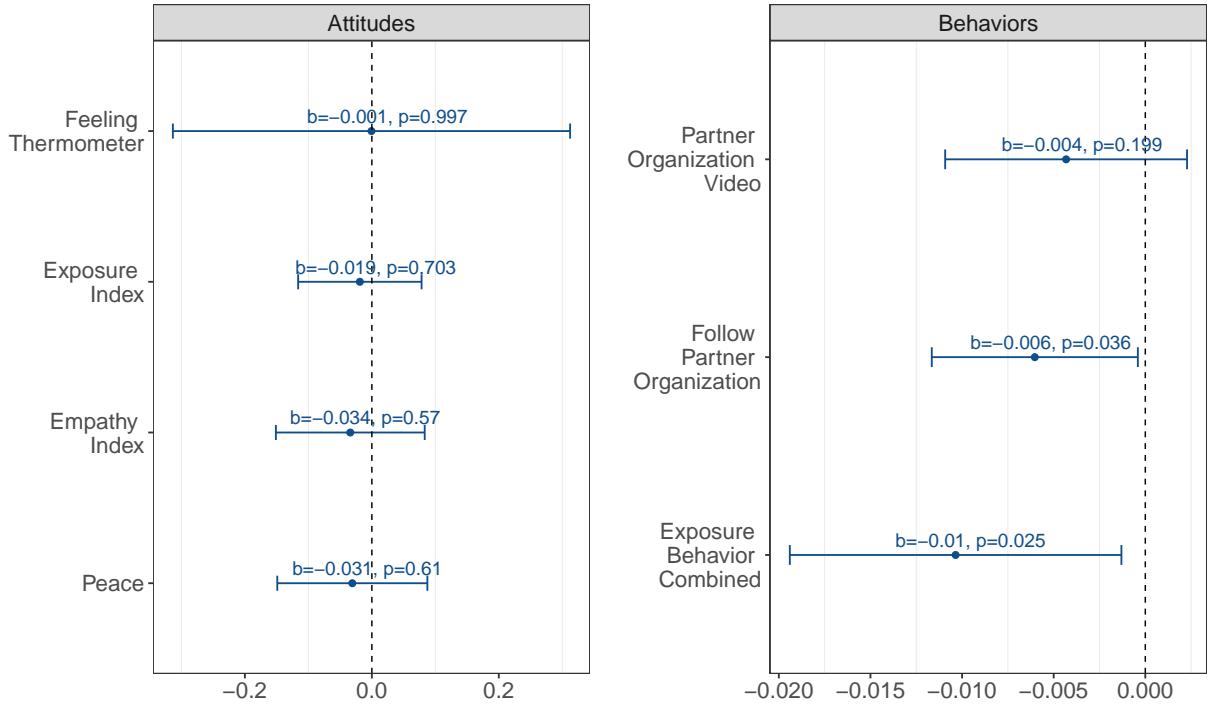
Figure 5: **Facebook field experiment results**. Attitudes—each point estimate in the lefthand panel is extracted from an OLS regression with block fixed effects, where we regressed a survey outcome over our pooled treatment indicator and pre-treatment measure of the outcome. Behaviors—each point estimate in the righthand panel is extracted from an OLS regression with block fixed effects, where we regressed a behavioral outcome over our pooled treatment indicator.

given the serious nature of some of the content). This type of reaction may be particularly prevalent in settings of repeated or ongoing conflict. Building on these insights that emphasize avoidance as a central challenge for constructive exposure to outgroups, we turn to empirically investigate the prevalence, correlates, and motivations underpinning outgroup avoidance.

Study 2: Understanding Outgroup Avoidance

How common is the outgroup avoidance that we suggest might account for the results of Study 1, and what explains it? To better understand the dynamics of intergroup avoidance online, we designed a follow-up study that included a survey-embedded behavioral task to document the prevalence, correlates, and underlying motivations of Jewish Israelis' avoidance of outgroup Facebook content.

14

Theoretical Motivation

Outgroup avoidance is likely driven by a range of personal-motivational and situational factors. Building on research in social and political psychology, we outline four potential motivations for intergroup avoidance. First, psychologists and political scientists have argued that *cognitive dissonance* may lead to avoidant behavior (Gubler et al., 2022; Gubler, Halperin and Hirschberger, 2015). Specifically, ingroup members often feel uncomfortable with the realization that their own group is at fault in settings of intergroup conflict. For that reason, they may be wary of constructive engagement with outgroup viewpoints (Takahashi, Jefferson and Earl, 2023). Indeed, applied to our context, theories of cognitive dissonance suggest that ingroups may avoid engaging with outgroup content online in anticipation of experiencing discomfort, guilt, shame, anxiety, and stress.

Second, psychologists have suggested a mechanism known as *naive realism* to explain the reluctance of ingroups to engage with outgroup viewpoints (Ross, Ward et al., 1996; Porter et al., 2020; Minson and Dorison, 2022). Naive realism refers to the belief in the truth and objectivity of one's own attitudes and the belief that counter-attitudinal or outgroup arguments are less truthful or objective. Theory and evidence on naive realism suggest that exposure to counter-arguments should lead to feelings of anger or frustration, a factor that might motivate many people in conflict settings to avoid any form of constructive engagement with outgroup points of view.

A third potential explanation for intergroup avoidance is *cognitive lethargy* (Stanovich, 2021). The starting point of this explanation is an assumption that people are "cognitive misers" who instinctively avoid engaging with complex or oppositional arguments because they require considerable mental effort. In turn, disinterest in engaging with "hard topics" might lead ingroups to avoid engagement with outgroup content.

Finally, a fourth explanation for avoidance, which may be particularly important in the context of protracted conflict, relates to *pessimism or hopelessness* about present-day or future intergroup relations (Cohen-Chen, van Zomeren and Halperin, 2015; Friend and Malhotra, 2019). Indeed, believing that engaging with outgroup viewpoints will not lead to improvements in intergroup interactions may be a powerful motivator for avoidance because constructive engagement might seem like an ineffective or counterproductive behavior to pessimists.

Together, these explanations suggest that we should expect to see high levels of avoidance in conflict settings such as Israel for various reasons. Therefore, in this second study, we seek to provide descriprtive evidence on three main questions: 1) How prevalent is intergroup avoidance in the general Israeli population? 2) What types of Israelis are most likely to avoid outgroup exposure? 3) What are the most common (self-reported) explanations for avoidance?

Research Design

To better understand the dynamics of intergroup avoidance, we designed a follow-up survey fielded among a sample of 1,210 Israeli Internet users, matching the general Jewish population in terms of age, gender, education, and geographical location (We provide a full description of our survey instrument in Appendix S2.1). Working with IPanel, an Israeli survey firm, we fielded our survey in August 2022.[14] The main outcome of interest in our survey was respondents' revealed preference in a brief behavioral task, in which they were asked to engage with Facebook posts originating from different communities in Jerusalem. Respondents were given a chance to *select* whether they read posts written by various social groups, including Palestinian residents of Jerusalem, and our key outcome of interest is whether respondents select to engage with Palestinian Facebook posts. Specifically, when introduced to our behavioral task, participants received the following prompt:

> *"The main goal of our study is to understand how people consume different types of social media content. To that end, we will now present you with the option to read two Facebook posts. These posts were either originally written in Hebrew, or were translated into Hebrew, by people living in Israel. Below is a list of different kinds of Facebook posts written by different people. All posts will be presented in Hebrew. Please select the type of posts you would like to read."*

Types of posts include: posts by secular Jews in Jerusalem about their daily life, posts written by religious Jews in Jerusalem about their daily life, posts written by Ultra Orthodox Jews in Jerusalem about their daily life, and posts written by Palestinians in East Jerusalem about their daily life. To address measurement concerns, we randomly varied the number of posts respondents could select in the choice task. Half of our sample was asked to select a single type of posts to be read, and the other half was allowed to select as many types of posts as they liked from our list. After participating in the choice task, all participants were asked to explain their selection, and participants who did not select to engage with Palestinian posts were further asked to explain why they did not choose to engage with Palestinian posts.

Through this simple design, we are able to examine the prevalence of intergroup avoidance in a controlled setting, understand the degree to which Israelis of different demographic backgrounds avoid Palestinian content online, and explore their (stated) reasons for doing so. Each of our descriptive analyses was pre-registered on AsPredicted before data collection began[15] and our survey and choice task received IRB approval from CU Boulder.

---
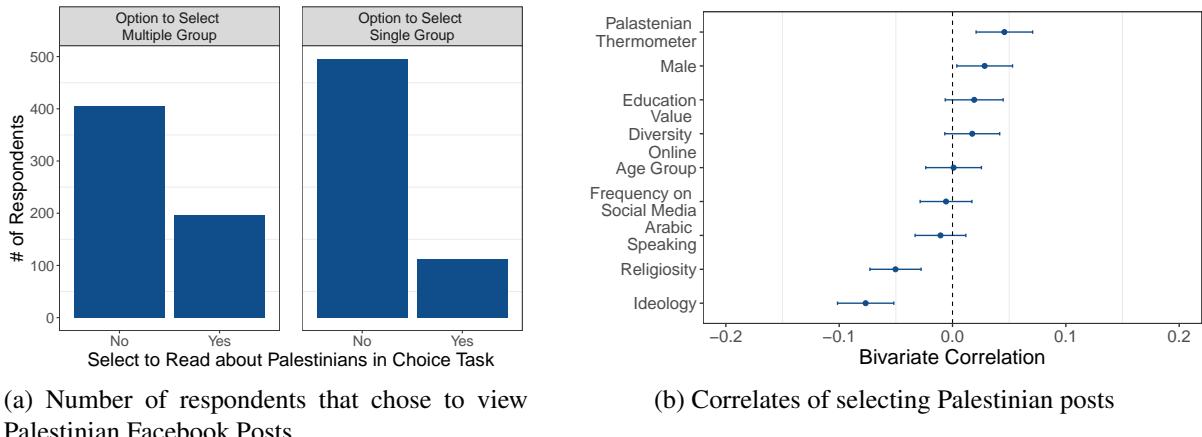
[14]IPanel is a common survey firm used in various publications focusing on Israeli public opinion and behavior (e.g., (Bassan-Nygate and Weiss, 2022; Manekin, Grossman and Mitts, 2019)).

[15]Pre-registration is available at: https://aspredicted.org/si6b3.pdf.

Results

In our main analyses, we find strong evidence Jewish Israeli survey respondents avoid engaging with Palestinian Facebook posts. As the left-hand panel of Figure 6 demonstrates, a majority of respondents avoid Palestinian Facebook posts. Specifically, among respondents that were assigned to an unconstrained task in which they could select as many posts as they wanted, only 32% selected to engage with Palestinian content. Among respondents assigned to a constrained task, in which they were instructed to select a single type of posts, only 18% of respondents engage with Palestinian content.

After establishing these patterns of intergroup avoidance, we turn to examine the individual-level correlates of such behavior. Bivariate correlations in the right-hand panel of Figure 6 suggest that Israelis who have higher ratings of Palestinians on a feeling thermometer as well as men were more likely to select to read Palestinian posts, while religious and right-wing respondents were less likely to select to read Palestinian posts. These correlations confirm existing arguments suggesting that parochial individuals are less likely to constructively engage with outgroup content (Schieferdecker and Wessler, 2017).

(a) Number of respondents that chose to view Palestinian Facebook Posts

(b) Correlates of selecting Palestinian posts

Figure 6: **This Figure presents the main results from Study 2.** Panel (a) demonstrates that a majority of Jewish respondents avoid engaging with Facebook posts written by Palestinians and that this tendency is extenuated when selection is limited to a single group. Panel (b) reports bivariate correlations of respondent covariates with a binary measure taking a value of 1 if a respondent engaged with Palestinian posts.

Using post-task survey items, we descriptively examine self-reported avoidance reasoning. Specifically, Figure 7 displays the prevalence of reasons for avoiding Palestinian content expressed by respondents. These reasons map onto the primary motivations for avoidance highlighted in the literature, including cognitive dissonance, naive realism, cognitive miserliness, and hopelessness

or pessimism. Column 2 of Table 1 demonstrates how each response maps onto a theoretical determinant of avoidance. Notably, the most prevalent motivations for avoidance were "will feel uncomfortable," "will feel anger," "reading will not change anything," "no patience for Palestinian posts," and "Palestinian posts are not based on facts." These are in line with theoretical frameworks of cognitive dissonance, naive realism, cognitive miserliness, and pessimistic intergroup perceptions.
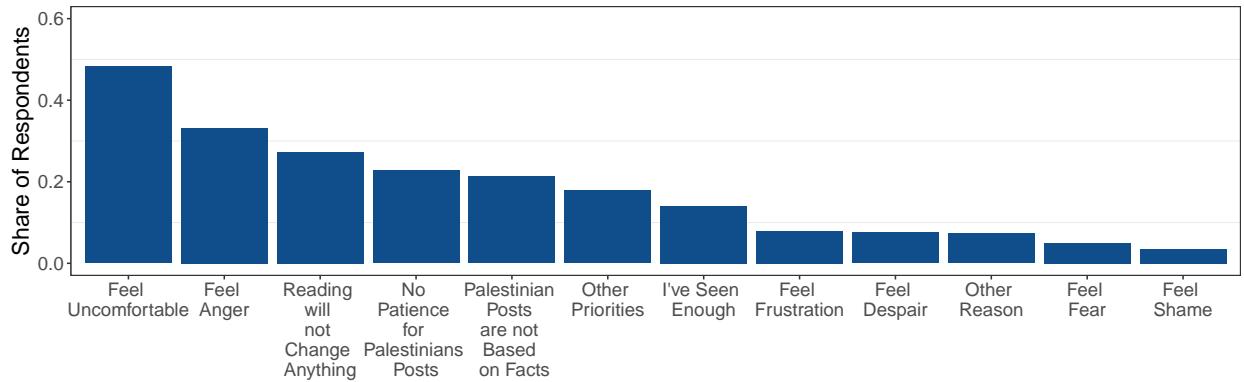

Figure 7: **Distribution of reasons for avoidance.**

Taken together, the results from Study 2 emphasize that intergroup avoidance is a commonplace. In the Israeli context, such avoidance correlates with baseline levels of prejudice, ideology, religiosity and gender, and is rationalized by respondents in terms of cognitive miserliness and dissonance, naive realism, and hopelessness and pessimism. Building on these insights, we turn to develop and test theoretically informed approaches that might be used to reduce intergroup avoidance.

Study 3: Combating Outgroup Avoidance

Drawing on the descriptive evidence reported from Study 2, we designed a final study to identify promising strategies to reduce outgroup avoidance. Specifically, through a final survey distributed amongst Israeli internet users, we experimentally evaluate how interventions targeting cognitive dissonance, naive realism, cognitive lethargy, and hopelessness or pessimism might mitigate outgroup avoidance.

Theoretical Motivation

The political psychology literature offers key insights into potential avenues for addressing the primary mechanisms driving avoidance documented in Study 2. First, *cognitive dissonance* research suggests that people are motivated to maintain cognitive consistency to avoid psychological discomfort. Self-affirmation is a form of self-awareness that helps people achieve and maintain cognitive consistency (Stone and Cooper, 2001). Self-affirmation exercises are therefore thought to help mitigate cognitive dissonance by reducing feelings of anxiety, guilt, or discomfort (Cohen and Sherman, 2014). Therefore, we theorize that such exercises may be effective in reducing outgroup avoidance.

Turning to *naive realism*, often described as the belief in the objectivity of one's own attitudes and the biased nature of counter-attitudinal messages, intellectual humility offers promise. Intellectual humility frees individuals to seek out and evaluate evidence so that they are less influenced by self-oriented motives and more oriented toward reality. Psychologists have increasingly documented that increasing intellectual humility makes individuals more sensitive to counterevidence, less defensive when beliefs are challenged, and less concerned about appearing to be right (Ballantyne, 2021). Recent research suggests that simply reading about the benefits of intellectual humility can help mitigate naive realism (Porter et al., 2020; López-Rodríguez et al., 2022), encouraging individuals to seek out alternative viewpoints.

To combat *cognitive lethargy*—avoiding outgroup content because it requires too much effort to engage with—evidence from social psychology indicates that in-group endorsements can offer intellectual shortcuts or heuristics to help cut through a noisy information environment. The heuristic of ingroup consensus—other group members engaged with this content and endorsed it—might be particularly powerful in reducing avoidance because it signals ingroup relevance and ingroup norms (Hodson and Sorrentino, 2003).

Turning to *hopelessness or pessimism*, a growing body of experimental evidence suggests that group malleability treatments are especially effective in sparking optimism and motivating individuals to take action in the context of ongoing intergroup conflict (Halperin et al., 2011; Cohen-Chen et al., 2014; Goldenberg et al., 2018). Those who believe that people and groups are malleable are less likely to attribute wrongdoing to innate qualities, less likely to support punishing wrongdoers, and more likely to recommend negotiation, relative to those who believe groups and individuals are fixed (Chiu et al., 1997). Group malleability treatments include those that emphasize that people can change their attitudes and behaviors at the individual, group, and intergroup levels (Halperin et al., 2011). Given their ability transform pessimism into optimism, we expect such treatment to reduce avoidance of outgroup content.

Finally, though not directly related to the psychological mechanism we uncover in Study 2, a growing body of literature points to the potential efficacy of instrumental incentives—including economic and strategic incentives—in facilitating intergroup interactions and improving intergroup relations (Jha, 2013; Zhou and Grossman, 2022). Given the challenges of positively shifting attitudes and behaviors in conflict settings, we expect that interventions that align ingroup incentives with outgroup engagement are a promising route for reducing outgroup avoidance.

Drawing on these insights, we hypothesize that interventions designed to increase self-affirmation, intellectual humility, ingroup support, and group malleability, as well as those that incentivize exposure to outgroups, should increase willingness to engage with Palestinian content.

Research Design

For our third study, we recruited a large sample of participants from IPanel ($n = 4294$) that match the general internet-using Jewish population in terms of age, gender, education, and geographical location (A full description of our survey instrument is reported in Appendix S3.1). After answering demographic questions, participants were randomly assigned to one of eight conditions. Specifically, participants were either assigned to receive one of six treatments designed to reduce avoidance, a placebo treatment, or a pure control condition. Following treatment assignment, respondents participated in the choice task described in Study 2, enabling us to evaluate the degree to which each treatment (relative to either a placebo or control) could effectively reduce outgroup avoidance, and encourage Jewish Israelis to engage with Facebook posts describing Palestinians' daily lives in Jerusalem.

Interventions

In Table 1, we report all our interventions alongside their related theoretical frameworks and empirical manifestations in study 2. In order to combat cognitive dissonance, we draw on a commonly used 10 question "Kindness Questionnaire," which has been shown to be as effective as longer essay-writing tasks for boosting self-affirmation (Cohen and Sherman, 2014; Sherman, Brookfield and Ortosky, 2017). The questionnaire consists of 10 yes or no questions written, so all participants should be able to say "yes" to each and affirm a positive view of themselves (e.g., "Have you ever been considerate of another person's feelings?"). Each question also prompts respondents to think of concrete examples of when they have engaged in each type of kind behavior.[16]

---

[16]To evaluate the success of this intervention, all respondents responded to a manipulation check measuring self-affirmation.

Theory	Measures (Study 2)	Interventions (Study 3)
Cognitive Dissonance	anticipate feelings of discomfort, frustration, despair, fear, or shame.	self-affirmation exercise
Naive Realism	belief in truth or objectivity of one's own views	intellectual humility exercise
Naive Realism	belief that outgroup narratives are less truthful or biased; anticipate anger when exposed to counter-arguments	ingroup fact check
Cognitive Lethargy	no patience for outgroup posts; have seen enough already; other priorities	ingroup endorsement
Hopelessness or Pessimism	reading posts will not change anything; seen enough	group malleability exercise
Instrumental Incentives	NA	monetary incentive

Table 1: **Avoidance Theories, Measures, and Interventions**

To combat naive realism, we assigned respondents to participate in an intellectual humility exercise in which they complete a short reading on the benefits of recognizing and owning their own intellectual limitations in the service of pursuing deeper knowledge, truth, and understanding.[17] As another approach to combating naive realism—specifically, the belief that oppositional information is less likely to be truthful—we display a fact check banner next to the choice task, which says, "All Palestinian posts have been fact-checked by Israeli researchers." Recent research suggests that fact checks—particularly from ingroup sources—can combat misinformation and increase belief in counter-attitudinal facts (Pasquetto et al., 2022).

Following literature demonstrating that ingroup endorsements can help overcome cognitive lethargy (Hodson and Sorrentino, 2003), our fourth treatment displays a customized banner next to the choice task, which says, "Palestinian posts were liked and shared by Israeli Jews." Additionally, inspired by previous studies (Halperin et al., 2011; Goldenberg et al., 2018), participants assigned to the group malleability treatment read a short reading passage introducing the concept of group malleability and its relevance to various social dynamics, including intergroup conflict.[18]

To test whether and how instrumental incentives can reduce outgroup avoidance, we also include a monetary incentive intervention in which participants were told they would receive additional compensation (equal to the total compensation they receive for participation in the entire

---

[17]To evaluate the success of this intervention, all respondents responded to a manipulation check measuring intellectual humility.

[18]To evaluate the success of this intervention, all respondents reported answers to a manipulation check measuring perceptions of group malleability.

survey) if they engaged with Palestinian content in the choice task.

Finally, we also include a placebo treatment. This treatment is a questionnaire that is commonly used as a placebo for cognitive dissonance interventions. The questions, initially developed by Reed and Aspinwall (1998), ask people to consider their personal opinions on a number of apolitical topics—e.g., chocolate is the best ice cream flavor, or winter is the best season of the year.

Results

We report our main results from Study 3 in Figure 8. As demonstrated in panel (a), we replicate the key insight from Study 2, demonstrating that patterns of intergroup avoidance are stark in our sample. That is, only 14% of Jewish Israeli respondents in our control and placebo groups selected to engage with Palestinian posts.

(a) Distribution of Survey Respondents Selecting to read Palestinian Posts in Control and Placebo Conditions.

(b) Treatment Effects on Selection of Palestinian Posts.
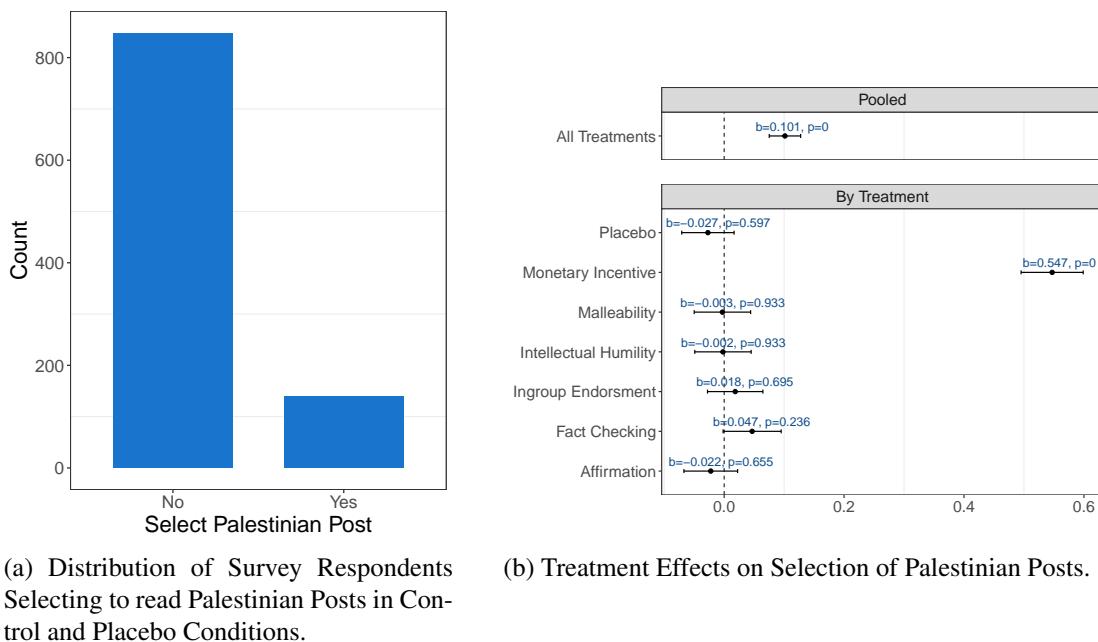
Figure 8: **This Figure presents the main results from Study 3.** Panel (a) reports the distribution of control and placebo group Jewish Israeli survey respondents selecting to read Palestinian posts (rather than posts written by secular, religious, or ultra-orthodox Jews). Panel (b) reports the effects of all treatments and the placebo condition on our main outcome of interest: selecting to read about Palestinians in the online choice task. We report Benjamini Hochberg corrected p. values for treatment-specific point estimates.

In panel (b), we examine how our various treatments reduced respondents' tendencies toward intergroup avoidance. We show that, in the aggregate, our treatments were effective in overcoming

avoidance of Palestinian posts (Top panel of Figure 8(b)). However, this effect is almost entirely driven by the monetary incentive treatment. Indeed, no other treatments were effective in increasing outgroup engagement, with the possible exception of fact-checking, which had a positive, very small, and statistically significant effect relative to the placebo treatment (see S6) and a small, positive though imprecisely estimated effect relative to the control group.

In substantive terms, we find that among those respondents who received the monetary incentive, 70% chose to read Palestinian content, relative to 15% in the control group. By contrast, in the fact-checking treatment, which had the next largest (though imprecisely estimated) effect, just 20% of respondents chose to read Palestinian content. These patterns emphasize the large impact of monetary incentives, which have a strong and meaningful influence on behavioral tendencies of avoidance in our survey context.

Although our treatments did not effectively reduce avoidance, our manipulation checks suggest that most treatments primed the intended psychological constructs of interest. Indeed our intellectual humility treatment increased respondents' scores on a humility index, and our malleability treatment increased respondents' scores on the malleability index (See Table S4). The self-affirmation treatment was not associated with more positive scores on our affirmation index. In turn, these additional analyses suggest that with the possible exception of self-affirmation, our null results are not a consequence of ineffective psychological stimuli. Instead, we interpret our overall findings to suggest that existing psychological stimuli may have direct effects on personal dispositions that are associated with outgroup avoidance. However, to the extent that such stimuli generate downstream effects on actual avoidant behavior, those effects are either very small or non-existent.[19]

Discussion and Conclusion

In this paper, we explore the dynamics of online exposure to outgroups in Jerusalem, a contested city situated in the center of one of the world's most intractable conflicts. We begin by demonstrating that online networks are not only socially segregated, but the content discussed in Jewish and Palestinian Facebook groups and public pages is fundamentally different (Figure 1). Whereas 20% of Palestinian posts reference the Israeli occupation directly, fewer than 1% of Jewish Israeli posts relate to Israeli repression, violence, and conflict.

Study 1 bridges this information gap online by exposing Jewish Israeli Facebook users to Pales-

---

[19]We further substantiate this argument in Appendix S3.3. Specifically, we employ an instrumental variable approach, using our treatment as an instrument for perceptions of malleability, intellectual humility, and affirmation. These analyses are generally in line with the main results reported in Figure 8.

tinian posts. We find that sustained exposure does not shape Jewish users' intergroup attitudes but actually has a modest negative effect on their consumption of additional outgroup content (Figure 5). We argue that exposure is ineffective in shaping intergroup attitudes because Jewish Israelis actively avoid constructive engagement with Palestinian content. Our finding that exposure to Palestinian viewpoints reduces future consumption of Palestinian Facebook content, as well as exploratory analysis suggesting that respondents primarily produced negative comments and emoji reactions in response to the content they observed, provides suggestive evidence in support of this interpretation. In turn, the results of our first study indicate that avoidance is a challenging hurdle because it reduces not only opportunities for outgroup exposure but also the quality of engagement conditional on exposure.

Study 2 substantiates this interpretation by revealing patterns of intergroup avoidance in a behavioral task administered as part of an online survey of Jewish Israelis. When given a chance to engage with Facebook content from various groups residing in Jerusalem, a majority of respondents avoid engagement with Palestinian Facebook posts, a tendency that correlates with outgroup prejudice, ideology, gender, and religiosity (Figure 6). Self-reported rationalizations of avoidance align with several well-documented psychological mechanisms, including cognitive dissonance, naive realism, cognitive lethargy, and hopelessness and pessimism.

Our final study (Study 3) highlights the limitations of applying theoretically motivated approaches for reducing avoidance in a setting of ongoing intergroup conflict. While economic incentives are effective in increasing engagement with Palestinian Facebook content, interventions designed to overcome social and psychological barriers to intergroup exposure are largely ineffective.

Taken together, our results offer several lessons for scholars and policymakers designing interventions to improve intergroup relations in deeply divided societies. First, organic naturally-produced content, which is not generally designed for outgroup consumption and is often divisive, is unlikely to improve attitudes and may increase intergroup avoidance. This maybe particularly true in conflict settings, where social media is exploited by diverse conflict actors to achieve strategic goals (Zeitzoff, 2017). Second, intergroup avoidance is a common behavioral tendency in deeply divided societies, which must be taken into consideration when designing prejudice reduction and peace-building interventions. Specifically, within an experimental context, avoidance may shape the extent to which people constructively engage with outgroup content, reducing the potential for meaningful attitudinal change among treated respondents. More importantly, when seeking to scale insights from controlled experimental contexts, intergroup avoidance remains a barrier to naturalistic exposure, rendering many interventions effective in theory but ultimately ineffective in practice. Relatedly, individuals who would most benefit from constructive engagement with out-

groups are often those most likely to avoid them, further emphasizing why overcoming avoidance should be a salient concern for scholars and practitioners.

There are several limitations to our analyses. First, while the Israeli context represents a critical and difficult setting through which to understand the dynamics of intergroup conflict and prejudice, our studies only offer evidence from a single case. Future research should investigate the dynamics of outgroup avoidance—and online avoidance in particular—in a wider range of settings. Second, our analyses are based on convenience samples of Facebook users who consented to participate in Study 1, and Israeli Internet users who have opted into IPanel's survey pool (Studies 2 and 3). While research suggests that average treatment effects often generalize across samples due to limited treatment effect heterogeneity (Coppock, 2019), and while our IPanel sample was selected to reflect the broader Israeli population in terms of common demographic characteristics, like many applications in political science, our analyses generate estimates of a sample average treatment effect rather than a population average treatment effect. Additionally, like all naturalistic online field experiments, Study 1 suffers from attrition, whereas our controlled survey exercises in (Studies 2 and 3) generated complete responses from all participants but are less naturalistic.

Acknowledging the limitations of each of our studies, together our three iterative studies offer a set of consistent findings from both naturalistic and more controlled research environments that document the prevalence and durability of intergroup avoidance, and the challenges it poses to efforts promoting constructive intergroup exposure. Our results suggest that reducing avoidance is not only very important but also extremely challenging. While numerous studies offer insights into how to overcome the psychological underpinnings of avoidance, our experimental findings suggest that directly targeting these psychological mechanisms does little to increase engagement with outgroup points of view. More promisingly, our monetary incentive treatment dramatically altered participants' engagement, highlighting the potential of aligning individuals' incentives with constructive outgroup exposure, as a promising route to reducing outgroup avoidance.

When discussing broader impact and scalability, many experimental studies of prejudice reduction implicitly assume that (conditional on assignment) individuals will not avoid exposure to outgroups. Our findings indicate that this may not be the case in conflict settings and deeply divided societies. Therefore, developing productive approaches that increase willingness to seek out outgroup viewpoints and engage with them constructively is a crucial first step when designing these interventions. We hope that future research on intergroup relations will build on our work, and continue to develop effective strategies for overcoming avoidance both on and offline.

References

Abu Zayad, Ziad Khalil. 2015. "Freedom of expression and social media in Palestine." *Palestine-Israel Journal of Politics, Economics, and Culture* 21(2):40.

Acemoglu, Daron, Asuman Ozdaglar and James Siderius. 2021. *Misinformation: Strategic sharing, homophily, and endogenous echo chambers*. National Bureau of Economic Research.

Aday, Sean, Henry Farrell, Marc Lynch, John Sides, John Kelly and Ethan Zuckerman. 2010. "Blogs and bullets: New media in contentious politics." *United States Institute of Peace* 65:1–31.

Allport, Gordon W. 1954. *The Nature of Prejudice*. 25 ed. Cambridge, Massachusetts: Perseus Books Publishing, L.L.C.

Alrababah, Ala, William Marble, Salma Mousa and Alexandra Siegel. 2021. "Can exposure to celebrities reduce prejudice? The effect of Mohamed Salah on Islamophobic behaviors and attitudes." *The American Political Science Review* .

Amichai-Hamburger, Yair and Katelyn YA McKenna. 2006. "The contact hypothesis reconsidered: Interacting via the Internet." *Journal of Computer-Mediated Communication* 11(3):825–843.

Asimovic, Nejla. 2023. "How Do Social Media and Language Barriers Shape Interethnic Relations? Evidence From Cyprus." *Unpublished Working Paper* .

Asimovic, Nejla, Jonathan Nagler, Richard Bonneau and Joshua A Tucker. 2021. "Testing the effects of Facebook usage in an ethnically polarized setting." *Proceedings of the National Academy of Sciences* 118(25):e2022819118.

Avni, Nufar. 2020. "Between exclusionary nationalism and urban citizenship in East Jerusalem/al-Quds." *Political Geography* p. 102314.

Bail, Christopher A, Lisa P Argyle, Taylor W Brown, John P Bumpus, Haohan Chen, MB Fallin Hunzaker, Jaemin Lee, Marcus Mann, Friedolin Merhout and Alexander Volfovsky. 2018. "Exposure to opposing views on social media can increase political polarization." *Proceedings of the National Academy of Sciences* 115(37):9216–9221.

Ballantyne, Nathan. 2021. "Recent work on intellectual humility: A philosopher's perspective." *The Journal of Positive Psychology* pp. 1–21.

Bassan-Nygate, Lotem and Chagai M Weiss. 2022. "Party competition and cooperation shape affective polarization: evidence from natural and survey experiments in Israel." *Comparative Political Studies* 55(2):287–318.

Batson, C Daniel. 2009. "Two forms of perspective taking: Imagining how another feels and imagining how you would feel.".

Bollens, Scott A. 2000. *On narrow ground: Urban policy and ethnic conflict in Jerusalem and Belfast*. Suny Press.

Chiu, Chi-yue, Carol S Dweck, Jennifer Yuk-yue Tong and Jeanne Ho-ying Fu. 1997. "Implicit theories and conceptions of morality." *Journal of personality and social psychology* 73(5):923.

Cohen-Chen, Smadar, Eran Halperin, Tamar Saguy and Martijn van Zomeren. 2014. "Beliefs about the malleability of immoral groups facilitate collective action." *Social Psychological and Personality Science* 5(2):203–210.

Cohen-Chen, Smadar, Martijn van Zomeren and Eran Halperin. 2015. *Hope (lessness) and collective (in) action in intractable intergroup conflict*. Springer.

Cohen, Geoffrey L and David K Sherman. 2014. "The psychology of change: Self-affirmation and social psychological intervention." *Annual review of psychology* 65:333–371.

Coppock, Alexander. 2019. "Generalizing from survey experiments conducted on Mechanical Turk: A replication approach." *Political Science Research and Methods* 7(3):613–628.

Enos, Ryan D. 2017. *The space between us: Social geography and politics*. Cambridge University Press.

Enos, Ryan D and Noam Gidron. 2018. "Exclusion and cooperation in diverse societies: Experimental evidence from Israel." *American Political Science Review* 112(4):742–757.

Freedman, Michael and Esteban F Klor. 2022. "When Deterrence Backfires: House Demolitions, Palestinian Radicalization, and Israeli Fatalities." *Journal of Conflict Resolution* p. 00220027221139432.

Friend, William and Deepak Malhotra. 2019. "Psychological barriers to resolving intergroup conflict: An extensive review and consolidation of the literature." *Negotiation Journal* 35(4):407–442.

Galinsky, Adam D and Gordon B Moskowitz. 2000. "Perspective-taking: decreasing stereotype expression, stereotype accessibility, and in-group favoritism." *Journal of personality and social psychology* 78(4):708.

Goel, Vasu, Dhruv Sahnan, Subhabrata Dutta, Anil Bandhakavi and Tanmoy Chakraborty. 2023. "Hatemongers ride on echo chambers to escalate hate speech diffusion." *PNAS nexus* 2(3):pgad041.

Goldenberg, Amit, Smadar Cohen-Chen, J Parker Goyer, Carol S Dweck, James J Gross and Eran Halperin. 2018. "Testing the impact and durability of a group malleability intervention in the context of the Israeli–Palestinian conflict." *Proceedings of the national academy of sciences* 115(4):696–701.

Gubler, Joshua R, Christopher F Karpowitz, J Quin Monson, David A Romney and Mikle South. 2022. "Changing Hearts and Minds? Why Media Messages Designed to Foster Empathy Often Fail." *The Journal of Politics* 84(4):2156–2171.

Gubler, Joshua Ronald, Eran Halperin and Gilad Hirschberger. 2015. "Humanizing the outgroup in contexts of protracted intergroup conflict." *Journal of Experimental Political Science* 2(1):36–46.

Guess, Andrew and Alexander Coppock. 2020. "Does counter-attitudinal information cause backlash? Results from three large survey experiments." *British Journal of Political Science* 50(4):1497–1515.

Guess, Andrew M. 2021. "Experiments Using Social Media Data." *Advances in Experimental Political Science* p. 184.

Halperin, Eran, Alexandra G Russell, Kali H Trzesniewski, James J Gross and Carol S Dweck. 2011. "Promoting the Middle East peace process by changing beliefs about group malleability." *Science* 333(6050):1767–1769.

Harel, Tal Orian, Jessica Katz Jameson and Ifat Maoz. 2020. "The normalization of hatred: Identity, affective polarization, and dehumanization on Facebook in the context of intractable political conflict." *Social Media+ Society* 6(2):2056305120913983.

Hodson, Gordon and Richard M Sorrentino. 2003. "Uncertainty orientation in the group context: Categorization effects on persuasive message processing." *The Journal of social psychology* 143(3):291–312.

Jakli, Laura Viktoria. 2020. *Estimating Extremism: New Measures of Extreme Party Preferences and Issue Positions*. University of California, Berkeley.

Jha, Saumitra. 2013. "Trade, institutions, and ethnic tolerance: Evidence from South Asia." *American political Science review* 107(4):806–832.

Joyce, Nick and Jake Harwood. 2014. "Improving intergroup attitudes through televised vicarious intergroup contact: Social cognitive processing of ingroup and outgroup information." *Communication Research* 41(5):627–643.

Kasara, K. 2017. "Do parties matter for ethnic violence? Evidence from India." *Quart. J. Polit. Sci.* 11:441–470.

Kasara, Kimuli. 2013. "Separate and suspicious: Local social and political context and ethnic tolerance in Kenya." *the Journal of Politics* 75(4):921–936.

Korach, Michal and Maya Hoshen. 2021. *Al Netunaich Yerushalaim: Matzav Kayam ve-Megamot Shinui*. Jerusalem Institute for Policy Research.

Landry, A and Eran Halperin. 2023. "Intergroup Psychological Interventions: The Motivational Challenge.".

Levy, Roee. 2020. "Social Media, News Consumption, and Polarization: Evidence from a Field Experiment." *American Economic Review* .

Lissitsa, Sabina. 2017. "Online political participation, online contacts with out-groups members and social distances." *Asian Journal of Communication* 27(1):18–32.

López-Rodríguez, Lucía, Eran Halperin, Alexandra Vázquez, Isabel Cuadrado, Marisol Navas and Ángel Gómez. 2022. "Awareness of the psychological bias of naïve realism can increase acceptance of cultural differences." *Personality and Social Psychology Bulletin* 48(6):888–900.

Lowe, Matt. 2020. "Types of contact: A field experiment on collaborative and adversarial caste integration.".

Manekin, Devorah, Guy Grossman and Tamar Mitts. 2019. "Contested ground: Disentangling material and symbolic attachment to disputed territory." *Political Science Research and Methods* 7(4):679–697.

Minson, Julia A and Charles A Dorison. 2022. "Toward a psychology of attitude conflict." *Current opinion in psychology* 43:182–188.

Mor, Yifat, Yiftach Ron and Ifat Maoz. 2016. ""Likes" for peace: Can Facebook promote dialogue in the Israeli–Palestinian conflict?" *Media and Communication* 4(1):15–26.

Mousa, Salma. 2020. "Building social cohesion between Christians and Muslims through soccer in post-ISIS Iraq." *Science* 369(6505):866–870.

Mullinix, Kevin J., Thomas J. Leeper, James N. Druckman and Jeremy Freese. 2015. "The Generalizability of Survey Experiments." *Journal of Experimental Political Science* 2(2):109?138.

Mutz, Diana C. 2001. "Facilitating communication across lines of political difference: The role of mass media." *American political science review* 95(1):97–114.

Mutz, Diana C. 2002. "The consequences of cross-cutting networks for political participation." *American Journal of Political Science* pp. 838–855.

Nassar, Tariq S. 2015. "Israelization of East Jerusalem, Land through Identity and the Question of Citizenship." *Palestine-Israel Journal of Politics, Economics, and Culture* 21(2):5.

Paluck, Elizabeth Levy. 2010. "Is it better not to talk? Group polarization, extended contact, and perspective taking in eastern Democratic Republic of Congo." *Personality and Social Psychology Bulletin* 36(9):1170–1185.

Paluck, Elizabeth Levy, Roni Porat, Chelsey S Clark and Donald P Green. 2020. "Prejudice reduction: Progress and challenges." *Annual Review of Psychology* 72.

Paluck, Elizabeth Levy, Seth Green and Donald P Green. 2018. "The contact hypothesis reevaluated." *Behavioural Public Policy* pp. 1–30.

Pasquetto, Irene V, Eaman Jahani, Shubham Atreja and Matthew Baum. 2022. "Social Debunking of Misinformation on WhatsApp: The Case for Strong and In-group Ties." *Proceedings of the ACM on Human-Computer Interaction* 6(CSCW1):1–35.

Pettigrew, Thomas F and Linda R Tropp. 2006. "A meta-analytic test of intergroup contact theory." *Journal of personality and social psychology* 90(5):751.

Porter, Tenelle, Karina Schumann, Diana Selmeczy and Kali Trzesniewski. 2020. "Intellectual humility predicts mastery behaviors when learning." *Learning and Individual Differences* 80:101888.

Pratto, Felicia and Andrew L Stewart. 2012. "Group dominance and the half-blindness of privilege." *Journal of Social Issues* 68(1):28–45.

Prentice, Deborah A. N.d. "Psychological perspectives on disagreement and dispute resolution: Lessons from the lab and the real world." *Behavioral Foundations of Policy*. Forthcoming.

Ramasubramanian, Srividya. 2015. "Using celebrity news stories to effectively reduce racial/ethnic prejudice." *Journal of Social Issues* 71(1):123–138.

Rathje, Steve, Jay J Van Bavel and Sander Van Der Linden. 2021. "Out-group animosity drives engagement on social media." *Proceedings of the National Academy of Sciences* 118(26):e2024292118.

Reed, Mark B and Lisa G Aspinwall. 1998. "Self-affirmation reduces biased processing of health-risk information." *Motivation and emotion* 22:99–132.

Rhodes, Samuel C. 2022. "Filter bubbles, echo chambers, and fake news: how social media conditions individuals to be less critical of political misinformation." *Political Communication* 39(1):1–22.

Roberts, Margaret E, Brandon M Stewart, Dustin Tingley, Edoardo M Airoldi et al. 2013. The structural topic model and applied social science. In *Advances in neural information processing systems workshop on topic models: computation, application, and evaluation*. Vol. 4 Harrahs and Harveys, Lake Tahoe pp. 1–20.

Robinson, Amanda Lea. 2020. "Ethnic diversity, segregation and ethnocentric trust in Africa." *British Journal of Political Science* 50(1):217–239.

Rokem, Jonathan, Chagai M Weiss and Dan Miodownik. 2018. "Geographies of violence in Jerusalem: the spatial logic of urban intergroup conflict." *Political Geography* 66:88–97.

Romann, Michael. 2006. Integration, Segregation, and Control. In *City of Collision*. Springer pp. 295–301.

Ross, Lee, Andrew Ward et al. 1996. "Naive realism in everyday life: Implications for social conflict and misunderstanding." *Values and knowledge* pp. 103–135.

Scacco, Alexandra. 2023. *Anatomy of a Riot: Why Ordinary People Particiate in Ethnic Violence*. Forthcoming Cambridge University Press.

Scacco, Alexandra and Shana S Warren. 2018. "Can social contact reduce prejudice and discrimination? Evidence from a field experiment in Nigeria." *American Political Science Review* 112(3):654–677.

Schieferdecker, David and Hartmut Wessler. 2017. "Bridging segregation via media exposure? Ingroup identification, outgroup distance, and low direct contact reduce outgroup appearance in media repertoires." *Journal of Communication* 67(6):993–1014.

Schwab, Anne K and Tobias Greitemeyer. 2015. "The world's biggest salad bowl: Facebook connecting cultures." *Journal of Applied Social Psychology* 45(4):243–252.

Sherman, David K, Jacob Brookfield and Lauren Ortosky. 2017. "Intergroup conflict and barriers to common ground: A self-affirmation perspective." *Social and Personality Psychology Compass* 11(12):e12364.

Shlay, Anne B and Gillad Rosen. 2010. "Making place: The shifting green line and the development of "Greater" metropolitan Jerusalem." *City & Community* 9(4):358–389.

Shtern, Marik. 2015. "Palestinians in West Jerusalem: Economic Dependency Amid Violent Contestation." *Palestine-Israel Journal of Politics, Economics, and Culture* 21(2):12.

Siegel, Alexandra A and Vivienne Badaan. 2020. "# No2Sectarianism: Experimental approaches to reducing sectarian hate speech online." *American Political Science Review* 114(3):837–855.

Siegel, Alexandra, Jonathan Nagler, RIchard Bonneau and Joshua Tucker. 2021. "Tweeting Beyond Tahrir: Ideological Diversity and Political Intolerance in Egyptian Twitter Networks." *World Politics* .

Stanovich, Keith E. 2021. "Why humans are cognitive misers and what it means for the great rationality debate." *Routledge handbook of bounded rationality* pp. 196–206.

Stats, StatCounter Global. 2018. "Mobile Operating System Market Share Worldwide— StatCounter Global Stats.".

Stone, Jeff and Joel Cooper. 2001. "A self-standards model of cognitive dissonance." *Journal of experimental social psychology* 37(3):228–243.

Stroud, Natalie Jomini. 2010. "Polarization and partisan selective exposure." *Journal of communication* 60(3):556–576.

Takahashi, Koji, Hakeem Jefferson and Allison Earl. 2023. "White racial identity, political attitudes, and selective exposure to information about racism.".

Taylor, K and L Silver. 2019. "Digital connectivity growing rapidly in emerging economies." *Pew Research* .

Tropp, Linda R, Amanda M Stout, Chenelle Boatswain, Stephen C Wright and Thomas F Pettigrew. 2006. "Trust and Acceptance in Response to References to Group Membership: Minority and Majority Perspectives on Cross-Group Interactions 1." *Journal of Applied Social Psychology* 36(3):769–794.

Weiss, Chagai M. 2021. "Diversity in health care institutions reduces Israeli patients' prejudice toward Arabs." *Proceedings of the National Academy of Sciences* 118(14).

White, Fiona A, Islam Borinca, Loris Vezzali, Katherine J Reynolds, Johanna K Blomster Lyshol, Stefano Verrelli and Juan M Falomir-Pichastor. 2021. "Beyond direct contact: The theoretical and societal relevance of indirect contact for improving intergroup relations." *Journal of Social Issues* 77(1):132–153.

Yiftachel, Oren and Haim Yacobi. 2006. Barriers, walls, and urban ethnocracy in Jerusalem. In *City of Collision*. Springer pp. 171–175.

Zeitzoff, Thomas. 2017. "How social media is changing conflict." *Journal of Conflict Resolution* 61(9):1970–1991.

Zhou, Yang-Yang and Guy Grossman. 2022. When Refugee Presence Increases Incumbent Support through Development. Technical report Working Paper.

Outgroup Avoidance

Supplementary Information

Contents

S1 Study 1 Supplementary Materials

S1.1 Selection of Facebook posts for Treatment Conditions

We followed four steps in selecting a total of 28 Facebook posts from the posts used by our partner organization in their routine activity. In designing our study, we planned to examine treatment effects across different types of posts. Specifically, we intended to compare the treatment effects of personal posts (containing an individual's story and photo) and non-personal posts (containing a story and photo describing a group of people). For that reason, we selected 14 personal and 14 non-personal posts. Below we describe our selection procedure.[20]

1. We viewed the full set of posts from our partner organization about East Jerusalem, spanning the period November 1, 2020 through January 26, 2021. (Note that one treatment post is dated from February 16, 2021. One post was rejected by Facebook due to relatively poor photo image quality. We replaced this post with a post from February 16, 2021.)

2. We excluded any posts that did not focus directly on East Jerusalem residents' interactions with the Israeli state (what East Jerusalem residents would describe as experiences of occupation. In practice, this material primarily focused on arrests and other law enforcement). We, therefore, excluded all posts focused on sports, entertainment, art and culture, and news unrelated to East Jerusalem residents' day-to-day experiences interacting with the Israeli state. These interactions typically involved Israeli law enforcement. Importantly, as we show in Figure 1 this content is the most popular and prevalent content in East Jerusalem social networks.

3. We then sorted all topically relevant posts into two categories: (a) those focused on individual or personal news, and (b) those focused on non-personal or communal news. Personal posts focus on the experiences of one specific individual (or, in a few cases, several individuals). They refer to this person by name and focus on that individual's experiences of interacting with the Israeli state. In all personal posts, a picture of the individual's face is shown in the post.

4. We deliberately excluded all posts that:

   (a) could not clearly be categorized as either personal or non-personal in their focus.
   (b) included graphic or disturbing images of violence or the consequences of violence on human bodies, out of a concern that such images might trigger or traumatize study subjects.
   (c) included blurry photographs.
   (d) contained video clips.

---

[20]We also included an "organic condition," that exposed a subset of respondents to the daily post circulated by our partner organization online each day.

S1.2   Selected Posts

In this section, we present all personal and non-personal posts used in our intervention. As is evident in Figures S2-S3, the content employed in our personal condition included 5 posts about arrests, 4 posts about house demolitions, 2 posts about targeted violence, and 3 posts about harassment by the state. Similarly, the content employed in our non-personal condition included 5 posts about arrests, 2 posts about house demolitions, and 9 posts about harassment by the state. Each post included a Hebrew translation followed by an original Arabic Facebook post and an image. A translation of all posts is reported below:

S1.2.1   Non-Personal Post Translation

1. The manager of Wadi Hilwa Center, Juad Siam, informed [the journal] "The Palestinian Voice": Since the start of the year, the occupation forces demolished 150 homes in al-Quds [Jerusalem], half of these were self-demolished.

2. An arrest of 3 youths from the Shuafat refugee camp in the city of al-Quds [Jerusalem].

3. Israeli Special forces are demolishing a number of home doors and arresting a number of youths from their homes in the village of al-Issawiya in occupied al-Quds [Jerusalem].

   - Abdalla abu Riala
   - Akram Dari
   - Mohammad Aziz Ubaid
   - Mohammad Khaled Muhaisan
   - Samir A-Tamimi
   - Mohammad abu-Rajb
   - Mohammad abu Rajab
   - Mohammad Mamun Muhaisan

   The arrests are continuing until this moment.

4. Heart emoji Pray for them for livelihood and relief in their issues. This is a picture of the daily suffering of the workers waiting at kalandia checkpoint. We bless and strengthen each father, each brother, each husband that goes work for their livelihood in order to finance the people in their home. Heart emoji.

5. They are receiving fines up to 500 Shekel. A while ago, the occupation forces prevented tens of Makdasis [Jerusalemites] that live outside of the old city from entering the [old] city and the al-Aqsa mosque.

6. The occupation is delaying residents trying to get from the Sheikh Saed village to the Jabel al-Mukaber village, in southern occupied al-Quds, by making the rules of the checkpoint separating between both villages more stringent.

Figure S2: Personal Treatment Ads
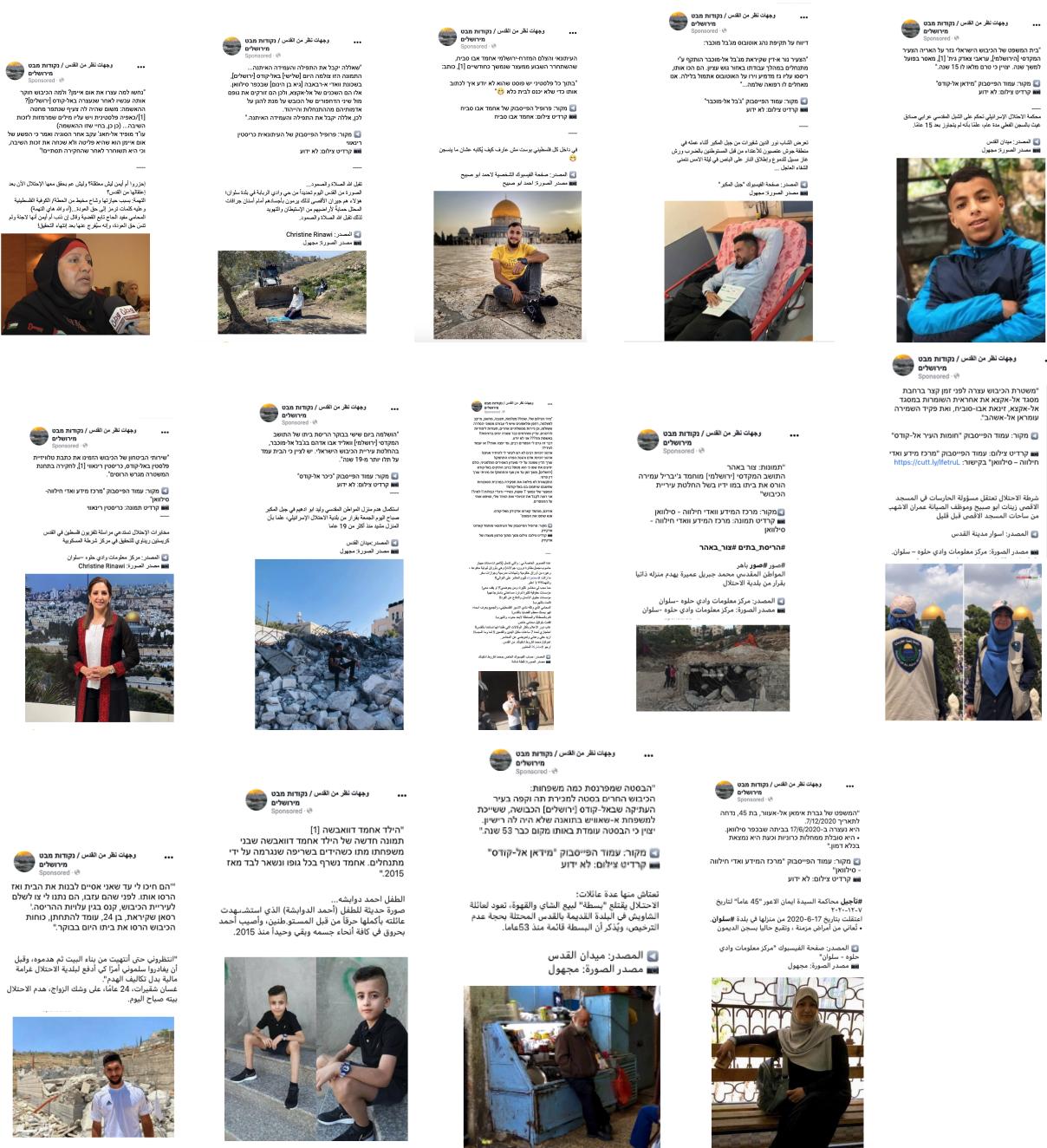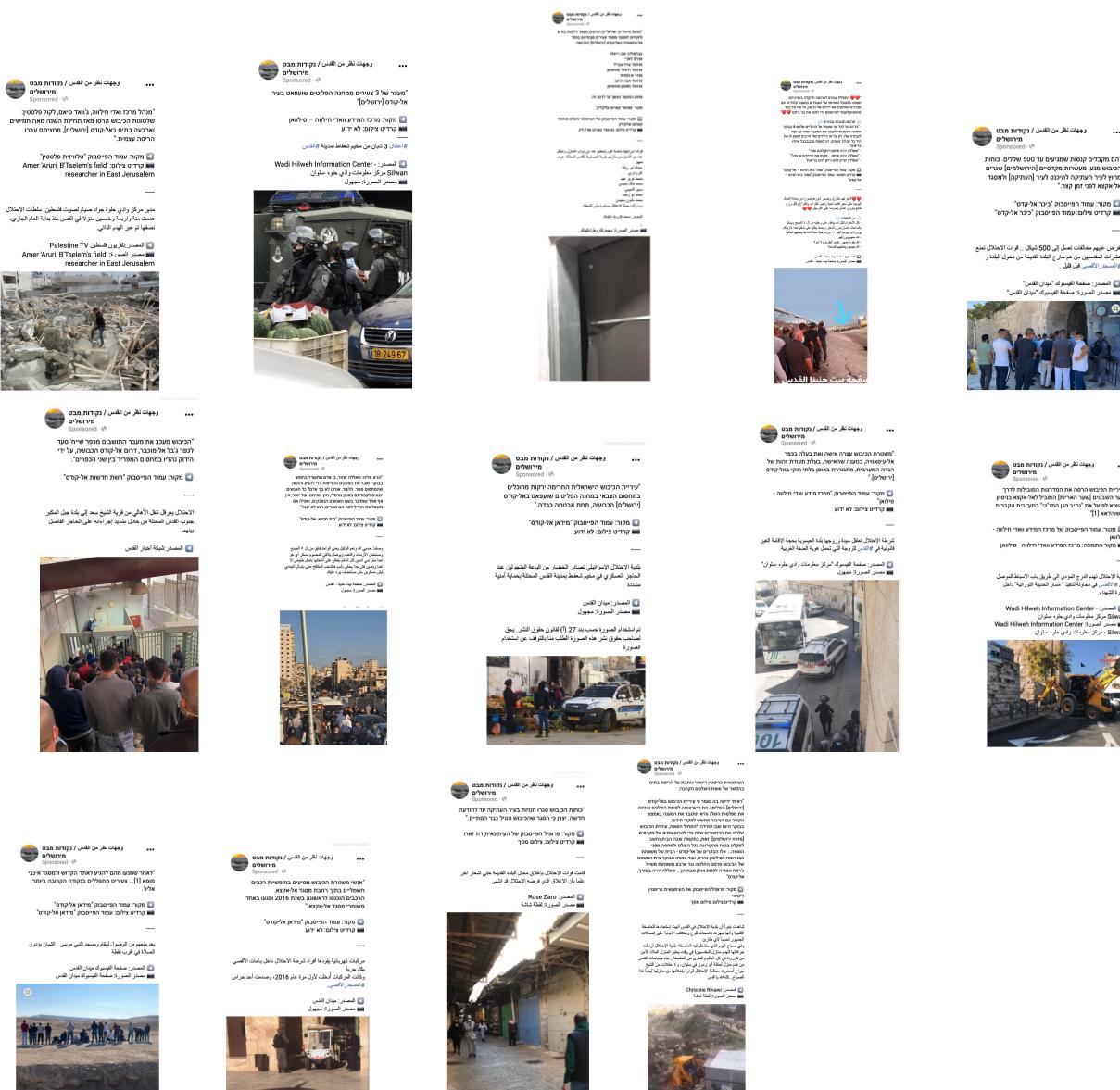
Figure S3: Non-Personal Treatment Ads

7. We received: God help, a person wakes up at 5 am, suffers the traffic jam and exhaustion, in order to arrive and find out that the checkpoint is closed. Are we not human beings? All people go out to work normally, except for us. Moreover, there is no one who raises a voice for the struggling people, and even if you ask a soldier why they are closing the checkpoint, he [the soldier] won't answer.

8. The occupation municipality confiscated vegetables from vendors at the military checkpoint in the Shuafat refugee camp in the occupied al-Quds [Jerusalem], and they were accompanied by many security forces.

9. The occupation police arrested a woman and her husband in the Issawiya village, claiming that the woman holds a West Bank identity card, and is living illegally in al-Quds [Jerusalem].

10. The occupation municipality demolished the stairs leading to The Tribe Gate [The Lions Gate] that leads to al-Aqsa in an attempt to promote "the Biblical Trail" in the Shuhadaa cemetery.

11. After they weren't allowed to enter the holy site and Bani-Mousa mosque, youth are praying in the closest location [to the mosque].

12. Policemen from the occupation police are freely driving electric cars in the main yard of the al-Aqsa mosque. The cars were first brought in 2016 and hit one of the guards of the al-Aqsa mosque.

13. The occupation forces closed stores in the old city until further notice. It is noteworthy that the [general COVID-related] lockdown that the occupation has declared is already over.

14. The journalist Kristen Rinawi writes about house demolitions in the context of the upcoming snowstorm: "I saw an article stating that the occupation municipality in al-Quds [Jerusalem] has completed its preparations for the snowstorm and prepared the snow-plow and will increase its capacities in order to stay in touch with the public, in case of emergency. On the morning the snowstorm was meant to start, the occupation municipality sent its bulldozers in order to demolish homes of Makdasis [East Jerusalem residents]! This is at a time in which the home is considered as a shelter, especially from the global COVID virus, and as a shelter from the storm. These are al-Quds mornings - the house of the abu Rumuz in Silwan was demolished, moreover on the same morning the court of the occupation announced its decision against four families in Sheikh Jarakh that calls to expel them from their houses. Allah should help you, al-Quds."

S1.2.2   Personal Post Translation

1. Guess why they arrested Umm-Ayman? And why is the occupation investigating her after she was arrested in al-Quds (Jerusalem)? The allegation: Since she had a scarf embroidered with a Palestinian kaffiya and it had words that were alluding to the right of return. (yes, yes, I swear this is the allegation). Attorney Mufid al-Hajj is following this issue and said that

Umm-Ayman's crime is that she is a refugee and she didn't forget her right of return, and she will be released after the investigation is over.

2. Allah should accept the prayer and steadfast standing. This picture was photographed today [Tuesday] in al-Quds [Jerusalem], in the Wadi al-Rababa [Gey ben Hinom], in the Silwan village. These are the neighbors of al-Aqsa, and for that reason they are standing in front of the bulldozer in order to protect their land from settlements and Judaization. For that reason, Allah should accept their prayers and steadfast perseverance.

3. The East Jerusalem journalist and photographer Ahmed Abu-Sabih, who was released from an arrest that was prolonged for two months, writes: "Within each Palestinian, there is a post that they don't know how to write so that they won't be arrested. Smiling emoji."

4. A report regarding an assault on a bus driver from Jabel Mukaber: "The young man Nur A-din Shakirat from Jabel Mukaber was attacked by settlers during his work in the area of Gush Etzion. They hit him, sprayed him with tear gas and shot at his bus last night. We wish him a full recovery."

5. The court of the Israeli occupation sentenced the young Makdasi (Jerusalemite) lion, Arabi Sadek Gith, to an active prison term of one year. It should be mentioned that he hasn't reached the age of fifteen yet.

6. The security forces of the occupation summoned the journalist Kirstin Rinawi from Palestine Television in al-Quds, for an investigation in the police station in the Russian Compound.

7. On Friday morning, the demolition of the Makdasi (Jerusalemite) resident's house, Walid Au-Adham, was completed in Jabel Mukabar, following the Israeli occupation municipality's decision. It is important to note that this house was standing for more than 19 years.

8. "My photography equipment, which includes cameras, a stand, a computer, a camera stand, a drone, and cell phones for which I have documents, and some government permits, diplomas, and passports are still confiscated for ten days!! For what reason??? I don't know. This caused me much financial loss. Who will compensate me?! Or stand on my side?! Many human rights organizations did not want to help me retrieve my belongings! Human rights and civil liberty organizations evaded the cause. The lawyer that was commissioned by the Palestinian prisinors club, everyone knows his name because he takes care of most cases in al-Quds (Jerusalem), took his time and then avoided the case! So I hired a private lawyer. The media hasn't done its job in most agencies that we thought would support us in al-Quds.!! My arrest went on for 7 hours, my hands and legs were cuffed!! Why!? I want my rights and my belongings, and to be compensated for my losses."

9. Pictures: Sur Baher, The Makdasi [Jerusalemite] resident Mohammad Jibril Amirah demolishing his one home with his own two hands due to a decision made by the Jerusalem municipality.

10. Earlier, the occupation arrested the head of guards, Zinat abu-Sabich, in the al-Aqsa yard, as well as the clerk of guards Omran al-Ashab.

11. "They waited until I completed building the house, and then demolished it. Before they left, they gave me a warrant to pay the municipality occupation in order to cover the price of demolition." Ghassan Shakirat, 24 years old, about to get married, the occupation forces demolished his house this morning.

12. The kid Ahmed Dwabsha. A new photo of the kid Ahmed Dwabsha, whose family members were killed as martyrs in a fire caused by settlers. Ahmed was burnt in his whole body and left alone since 2015.

13. The stand that supports several families: The occupation confiscated a tea and coffee stand in the old city of occupied al-Quds (Jerusalem), that belongs to the a-Shawish family claiming that they don't have a license. It should be noted that this stand has been around for 53 years.

14. The court hearing of Miss Aiman al-Awar, 45 years old, was postponed to 7/12/2020. She was arrested on 17/6/2020 in her house in Silwan village. She suffers from chronic illnesses and is currently in the Damon jail.

S1.3 Baseline Survey

In this section, we report all items we collected in our survey.

Demographics

B1 Gender

B2 Age

B3 Religion

B4 Religiosity

B5 Ethnicity

B6 Jerusalem resident?

B7 Hebrew/Arabic proficiency

B8 Ideology (Right-Left scale)

Prejudice

B9 Feeling Thermometer (Foreign workers / Left-wing supporters / Right-wing supporters / Jews in general / Ultra-Orthodox Jews / Jewish immigrants / Arabs)

Perspective Taking and empathy

B10 How well would you say the following statements describe you, where "1" does not describe you at all and "4" describes you very well:

(a) It is important try to understand ultra-Orthodox Jews by imagining their feelings, suffering, or thoughts

(b) It is important try to understand Arabs Jews by imagining their feelings, suffering, or thoughts

(c) Even if I disagree with ultra-Orthodox Jews, it is important to try to think of reasons why that group takes a different point of view

(d) Even if I disagree with Arabs Jews, it is important to try to think of reasons why that group takes a different point of view.

Social media and news consumption

B11 How much time do you spend on Facebook on an average day?

B12 Do you agree or disagree that exposure to diverse points of view on social media is valuable?

B13 How often do you see news or news headlines on Facebook?

B14 Thinking about the news you see on Facebook, do you prefer sources that share/challenge your point of view/ do not have a particular point of view?

S1.4 Endline Survey

Facebook use

E1 Do you use Facebook for any of the following reasons? (Shop / Search for a job / Play games / Meet new people / Other)

E2 Do you feel you are (Spending too much time on Facebook / Spending just enough time on Facebook / Spending too little time on Facebook)?

Prejudice

E3 Feeling thermometer (0 to 10) with respect to left-wing party supporters

E4 Feeling thermometer (0 to 10) with respect to right-wing party supporters

E5 Feeling thermometer (0 to 10) with respect to Jews

E6 Feeling thermometer (0 to 10)with respect to Arabs

E7 Do you agree or disagree: "Most Arabs in Jerusalem want to live in peace." (4 point scale)

Interest in outgroup media

E8 Do you agree with the statement: "Exposure to diverse points of view on social media is valuable?" (4 point scale)

E9 Do you agree with the statement: "I would benefit from more exposure to news about Arab life in East Jerusalem?" (4 point scale)

Empathy and perspective-taking

E10 "It is important to try to understand Arabs by imagining their feelings, suffering, or thoughts." (4 point scale of alignment/misalignment with personal views)

E11 "Even if I disagree with Arabs, it is important to try to think of reasons why that group takes a different point of view." (4 point scale of alignment/misalignment with personal views)

E12 Would you agree or disagree: "Residents of East Jerusalem face more difficult problems in their daily lives than residents of West Jerusalem." (4 point scale)

Policy preferences

E13 Do you support dividing Jerusalem into two cities - one Jewish and one Arab? (Yes/No)

E14 Do you think that Jerusalem municipality should: (Give priority to the needs of its Jewish residents over others living in the city / Give priority to the needs of its Arab residents over others living in the city / Give equal priority to the needs of its Jewish and Arab residents)?

Humanization

E15 To what extent are east Jerusalem residents rational and logical (1-7)

E16 To what extent are east Jerusalem residents refined and cultured (1-7)

E17 To what extent are east Jerusalem residents Lacking self-restraint, like animals (1-7)

E18 To what extent are east Jerusalem residents Superficial, lacking in depth (1-7)

E19 On a scale of 1-6, where 1 means "very different from one another" and 6 means "very similar to one another", please indicate how different or similar Arabs living in Jerusalem are to each other, with regards to intellect

E20 On a scale of 1-6, where 1 means "very different from one another" and 6 means "very similar to one another", please indicate how different or similar Arabs living in Jerusalem are to each other, with regards to morality

Openness to outgroup experiences

E22 How interested would you be in the following online experiences, where "1" means not interested at all and "4" means very interested:

  (a) A virtual tour of Palestinian neighborhoods in West Jerusalem

  (b) An online lecture about life in East Jerusalem

  (c) A video showcasing the life of a Palestinian resident of East Jerusalem

S1.5 Ethics

We carefully considered ethics when developing our experimental design. First, during the process of recruitment for our study, subjects were informed when asking for their consent that they would be taking part in an experimental study in partnership with a Jerusalem-based NGO whose mission is to connect members of different communities in Jerusalem through shared news about daily life in the city. During the consenting process, subjects were told in a direct way that the study "might expose you to information about local news and events in Jerusalem via Facebook" and that the researcher "will consider how you react to different prompts on Facebook," such as "how you respond to a prompt inviting you to follow specific pages or RSVP to events on Facebook." The translation of our consent form is presented in Section S1.5.1 of the appendix.

Second, while the ethics of Facebook advertisements are a subject of current debate among social scientists and practitioners (Guess, 2021), receiving advertisements is part of the standard experience for Facebook users, who see many ads and sponsored posts each day in their newsfeeds. These ads span a wide range of topics, from products advertised by retail stores and pharmaceutical companies, to advertisements from political campaigns, dating apps, charities, and religious organizations soliciting donations and recruiting members. Facebook users are generally aware that advertisements target individuals based on their demographic characteristics, previous purchasing habits, online browsing activity, and other metadata. It is common to receive advertisements from the same sources for days, weeks, or months at a time. The experience of receiving our sponsored treatment posts is therefore well within the normal range of Facebook user experiences. Furthermore, if people wish to opt out of receiving advertisements from a certain source (such as our treatment page), they are able to do so by adjusting the settings in their Facebook profiles. In practice, we did not see evidence of study participants opting out of treatment, but they were free to do so. Because we obtained informed consent at the outset and subjects had the opportunity to opt out of treatment and the study at any time, we were able to respect their autonomy throughout the experiment.

Third, the aim of our partner organization's work is to reduce intergroup prejudice by translating and disseminating outgroup-focused content online, and this was our own hope as researchers. But it is important to acknowledge that several recent studies suggest that diversifying social media environments might elicit negative online responses (Bail et al., 2018). For that reason, evaluating our partner organization's activity in light of the potential for backlash offers important insights that can inform the organization's future activities. With this possibility in mind, we took several steps to minimize the potential for harm, including the spread of online hate speech. First, given disparities in power and resources across communities within Jerusalem, we chose to limit our study to Jewish residents of Jerusalem, rather than exposing members of the more vulnerable community of Palestinians in East Jerusalem to content they might prefer to avoid. Second, we chose to disable public viewing of user comments on 0202 treatment posts and on posts inviting respondents to participate in post-treatment behavioral measures. As such, we strove to conduct this experiment in as naturalistic a way as possible, while controlling any potential public backlash.[21]

---

[21]We received IRB approval from the University of Wisconsin IRB office (Approval #: 2020-1259).

S1.5.1 Informed Consent Form

Description of the research
You are invited to participate in a research study about online information and intergroup relations implemented by researchers at UW-Madison, University of Colorado Boulder, and WZB Berlin. You have been asked to participate because we are interested in learning how you respond to information about local news and events in Jerusalem online. The purpose of the research is to better understand whether sharing information about other groups in Jerusalem affects intergroup relations. This study?s sample includes residents of Jerusalem.

What will my participation involve?
If you decide to participate in this research, you will be asked to fill out this brief survey, and you will be invited to participate in a follow up survey in several weeks. Between surveys we may expose you to information about local news and events in Jerusalem via Facebook. In addition, after the first survey, we will consider how you react to different prompts on Facebook. Specifically, we may check to see how you respond to a prompt inviting you to "follow" specific pages or RSVP to events on Facebook. These prompts will be administered by [Partner organization]. You can choose to fully ignore or engage with these different Facebook prompts which are administered by [Partner organization] as you wish. Participation in this first survey will take about five minutes to complete. Several weeks from now, we will send you an invitation to participate in another survey which will take between five and ten minutes per survey. In total, your participation will require no more than 15 minutes for all surveys.

Are there any risks to me?
Risks associated with this study include confidentiality breach. In addition, you may find parts of the surveys we distribute as upsetting, and therefore you can feel free to skip questions you feel uncomfortable answering.

Are there any benefits to me?
We don't expect any direct benefits to you from participation in this study.

Will I be compensated for my participation?
If you participate in this study, and complete the follow-up survey, you will receive a chance to win one of several prizes (an iPhone, or one of ten 100NIS gift cards from Tav Ha-Zahav which can be used in many stores across Israel) in a raffle we will conduct. The research team will conduct the raffle on December 25, 2020. The research team will distribute 11 prizes (1 iPhone, and ten 100NIS gift cards) between 10,000 possible study participants selected at random, using a computerized random selection procedure. We will notify study participants if they won or didn't win a prize via email and Facebook message, and will deliver all prizes to winners via Israeli mail by January 20, 2021.

How will my confidentiality be protected?
This study is confidential. Neither your name or any other identifiable information will be pub-

lished. Only our research team will have access to all data collected in this study. In order to enter the raffle described above, you will need to provide your full name and email address. This information will never be published, and it will only be used to contact you if you win one of the raffle prizes. Coded data will be shared between researchers on the study team, but all research data will only be used for this study and not retained for future use.

Whom should I contact if I have questions?
You may ask any questions about the research at any time. If you have questions about the research after you leave today you should contact Chagai Weiss at the following email address: cmweiss3@wisc.edu. If you are not satisfied with response of research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-265-4312. If you decide not to participate or to withdraw from the study, you may do so without penalty. If you agree to participate in the study – please select "I agree to participate".

S1.6 Attrition

As noted in the main text, not all treated respondents fully participated in our endline surveys. Such attrition can pose threats to our estimates of attitudinal measures, but not to our behavioral measures where we successfully collected outcomes for all participants. In this section, we empirically assess several concerns relating to attrition in our endline survey. First, in table S2, we demonstrate that participation in our baseline and endline surveys is not affected by treatment status. Indeed, assignment to treatment does not affect participation in our baseline survey (Pre), endline survey (Post), baseline and endline survey (Pre-Post). Similarly, treatment assignment does not increase response rate to our main survey outcome variables—Arab feeling thermometer (Therm), Empathy, Peace, or Preference for Exposure to outgroup content (Exposure).

Table S2: Correlation of Treatment with Non-Response to Surveys and Specific Items

	Outcome: Non Response = 0, Response = 1						
	Pre	Post	Pre-Post	Therm	Empathy	Peace	Exposure
Treatment	-0.001	0.002	-0.009	0.001	-0.006	0.001	0.000
	(0.011)	(0.012)	(0.011)	(0.011)	(0.010)	(0.011)	(0.011)
Num.Obs.	6153	6153	6153	6153	6153	6153	6153
R2	0.256	0.018	0.174	0.017	0.015	0.016	0.016

* $p < 0.05$

Additionally, in Table S3, we focus on respondents who reported demographics in our baseline survey and consider the extent to which reported demographics predict selection into endline survey (Post) or responding to our main outcomes of interest. We find that men were more likely to select into our endline survey, and older respondents were less likely to select into our endline survey. However, religiosity, and pre-treatment affect towards Palestinians do not predict selection into our endline survey.

Table S3: Correlation of Covariates with Non-Response to Surveys and Specific Items

	Post	Therm	Empathy	Peace	Exposure
		Outcome: Non Response = 1, Response = 0			
Male	-0.045*	-0.037*	-0.034*	-0.036*	-0.031
	(0.019)	(0.018)	(0.017)	(0.018)	(0.018)
Age	0.019*	0.016*	0.013*	0.017*	0.015*
	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)
Religiosity	0.007	0.006	-0.003	0.007	0.002
	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)
Arab Therm	0.006	0.007	0.005	0.006	0.007*
	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)
Num.Obs.	2369	2369	2369	2369	2369
R2	0.007	0.007	0.006	0.007	0.010

We focus on respondnets who reported covariates in the baseline survey.

* $p < 0.05$

S1.7   Disaggregated Results by Treatment Type

In this section, we consider a series of pre-registered analyses, examining the effects of exposure to different *types* of outgroup social media content. In line with our main results, we show in Figure S4 that when compared against the control group, all treatment types have an imprecisely estimated effect on our attitudinal measures, with the exception of non-personal posts that moderately reduce study participants' interest in future exposure to outgroup content. Interestingly, when comparing the effects of personal and non-personal posts, we find some suggestive evidence that personal content is more conducive to improving intergroup relations. Specifically, respondents assigned to personal posts are more likely to report that exposure to outgroup perspectives online is important and display higher levels of empathy towards Palestinians. Moreover, those respondents report higher scores on the Arab feeling thermometer (although our estimate for this outcome is somewhat imprecisely estimated). Based on the various comparisons reported in Figure S4, we interpret these findings to suggest that our increase in empathy towards Arabs (in the personal vs. non-personal comparison) is likely driven by a modest positive effects of personal content and a modest negative effects of non-personal content. Turning to the behavioral measures, we see that all treatments had a negative effect on engagement relative to the control group, although not all were statistically significant, likely due to decreased sample size in these restricted comparisons.
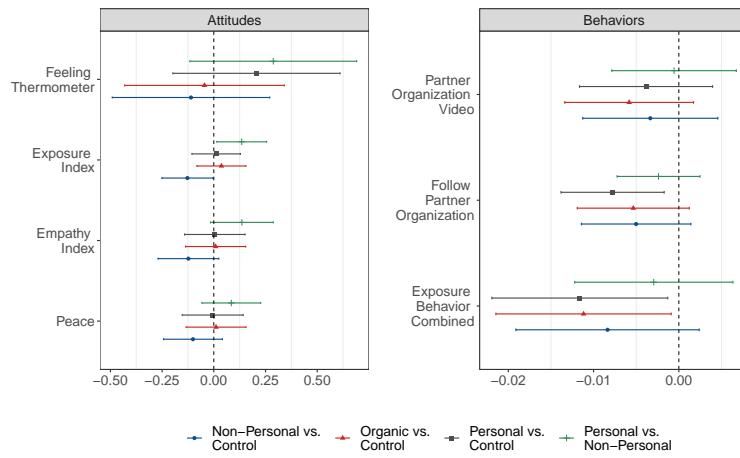
Figure S4: **Treatment Effects Disaggregated by Treatment Type** – Each point estimate is extracted from an OLS regression with block fixed effects, where we regressed our outcomes over a treatment indicator (e.g., control vs. pooled, control vs. personal, control vs. non-personal, personal vs. non-personal).

S2 Study 2 Supplementary Materials

S2.1 Survey Instrument

In Study 2, we fielded a survey among a sample of Israeli survey respondents. Our main objective was to capture a behavioral measure of intergroup avoidance, document its prevalence among Jewish Israeli survey respondents, and consider its correlates and potential explanations. Below we describe the main items collected in our survey.

1. Informed Consent

2. Attention Checks [Failing attention resulted in survey termination]

3. Demographics

    (a) Age
    (b) Gender
    (c) Locality
    (d) Religiosity
    (e) Languages spoken?
    (f) Ideology (7 point scale)

4. Social Media Usage

    (a) Usage Frequency
    (b) Agree exposure to outgroups online is positive

5. Intergroup Attitudes

    (a) Important to take outgroup perspectives
    (b) Feeling thermometers (Arabs, Foreign workers, Ultra-Orthodox Jews)

6. Choice task.

    (a) Respondents are told that they will be asked to read a number of Facebook posts. They are then instructed to select posts written by specific groups from Jerusalem, including secular Jewish residents of Jerusalem, Religious Jewish residents of Jerusalem, Ultra-Orthodox residents of Jerusalem, or Palestinian residents of Jerusalem. Respondents were randomized into one of two choice tasks in which they were forced to select posts written by a single group or alternatively select a combination of posts written by various groups.

    (b) Explain selection (open/closed response)

    (c) If Palestinian posts are not selected: Explain Palestinian avoidance (open/closed response).

    (d) Respondents read two posts and report whether they learned new information from the post.

S2.2 Correlates of Avoidance

In Figure 7, we report the various reasons that respondents provide for avoiding engagement with Palestinian Facebook posts in our survey. In Figure S5, we aggregate those reasons into four overarching motivations of avoidance (Cognitive dissonance, Cognitive Lethargy, Hopelessness, and Naive Realism), and consider their social and demographic correlates.
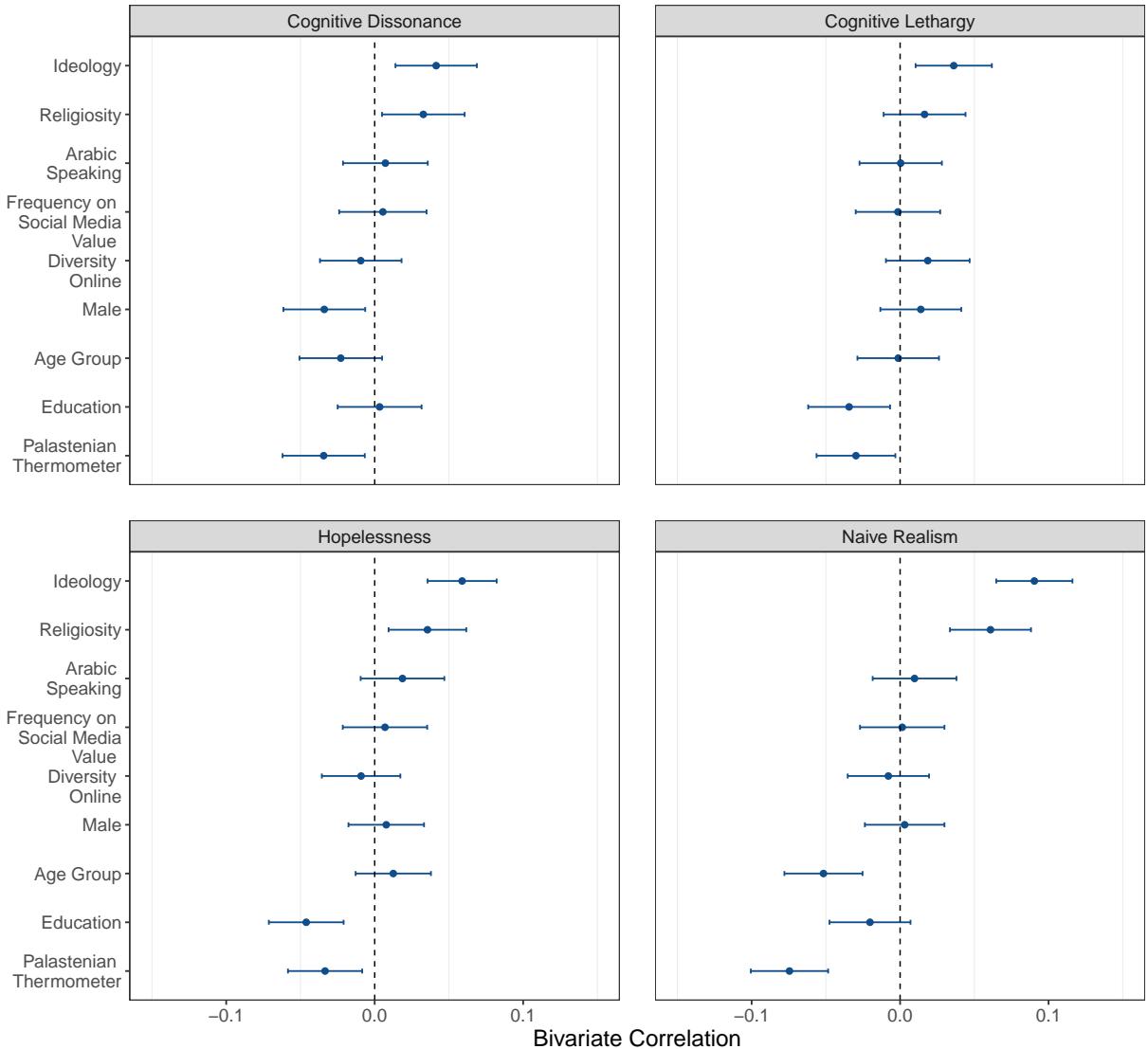

Figure S5: **Correlates of Avoidance Reasons.**

S3 Study 3 Supplementary Materials

S3.1 Survey Instrument

The main objective of Study 3 was to examine whether a set of theoretically informed treatments could reduce Jewish Israeli survey respondents' intergroup avoidance when completing our choice task (initially implemented in Study 2). To do so, we fielded a final survey. Below we report the items we collect as part of this final survey.

1. Informed Consent

2. Attention Checks [Failing attention resulted in survey termination]

3. Demographics

    (a) Age
    (b) Gender
    (c) Locality
    (d) Religiosity
    (e) Languages spoken?
    (f) Ideology (7 point scale)

4. Social Media Usage

    (a) Usage Frequency
    (b) Agree exposure to outgroups online is positive

5. Intergroup Attitudes

    (a) Important to take outgroup perspectives
    (b) Feeling thermometers (Arabs, Foreign workers, Ultra-Orthodox Jews)

6. Treatment assignment.

    (a) Affirmation, malleability, and intellectual humility treatments are implemented prior to the choice task. All other treatments are embedded within the choice task.

    (b) Prior to the choice task all respondents complete survey items measuring respondents' level of self-affirmation, perceptions of group malleability, and intellectual humility. We use these measures as manipulation checks to capture the extent to which our treatments successfully shape the psychological constructs they target.

7. Choice task.

(a) Respondents are told that they will be asked to read a number of Facebook posts. They are then instructed to select posts written by one of four specific groups from Jerusalem, including secular Jewish residents of Jerusalem, Religious Jewish residents of Jerusalem, Ultra-Orthodox residents of Jerusalem, or Palestinian residents of Jerusalem.

(b) Explain selection (open/closed response)

(c) If Palestinian posts are not selected: Explain Palestinian avoidance (open/closed response).

(d) Respondents read two posts and report whether they learned new information from the post.

S3.2   Placebo Analysis

In our pre-analysis plan for Study 3, we pre-registered additional analyses in which we would compare our main treatments with a placebo condition in which respondents answered a set of innocuous questions prior to engaging in the choice task. We report these additional analyses in Figure S6. Overall, our results remain consistent with our main analyses reported in the main text. However, when benchmarking conditions against a placebo, we find that fact-checking and ingroup endorsements have positive and precisely estimated effects. Importantly however, these effects are still substantively small when compared to the effects of the monetary incentive treatment.
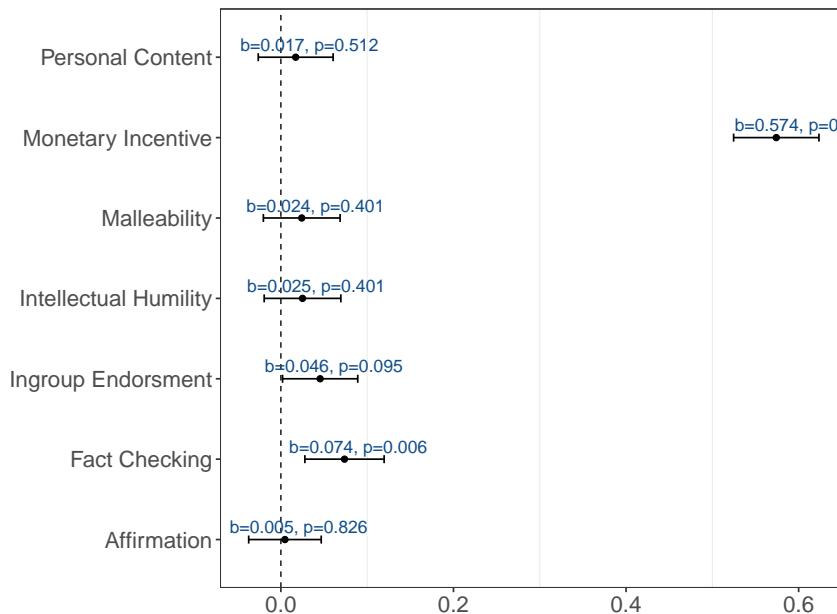

Figure S6: **This Figure plots ATEs from Study 3 using the placebo group as the reference category.**

S3.3 Manipulation Check

Three of our treatments in Study 3 were designed to target and shape psychological dispositions relating to perceptions of group malleability, intellectual humility, and self-affirmation. Our survey included batteries of related survey items, capturing these psychological constructs. We use these survey items, administered to all respondents, as manipulation checks. In Table S4, we demonstrate that our treatments increased intellectual humility by about 0.13SDs and perceptions of group malleability by 0.28 SDs. That said, the validated treatment we used to increase self-affirmation did not successfully achieve its goal. In other words, the self-affirmation treatment had a very small, imprecisely estimated negative effect on self-affirmation. These additional analyses suggest that at least with regards to intellectual humility and group malleability, the null results we report in Figure 8 are not an artifact of unsuccessful treatment.

Table S4: Average Treatment Effect on Psychological Constructs

	Affirmation Index	Humility Index	Malleability Index
Affirmation Treatment	-0.026		
	(0.026)		
Int. Humility Treatment		0.074*	
		(0.033)	
Malleability Treatment			0.150*
			(0.029)
Num.Obs.	4396	4375	4359
R2	0.000	0.001	0.005
Control Mean	4.107	4.107	4.107
Control SD	0.534	0.534	0.534

* $p < 0.05$

One concern with our analyses that focus on shifting psychological dispositions relating to perceptions of group malleability, intellectual humility, and self-affirmation is that our main estimates represent a conservative ITT. To further substantiate our null, we estimate a series of 2SLS regressions. In these analyses, which we refer to as an estimation of treatment effect on the treated (TOt), we employ treatment status as an instrument for endogenous measures of the psychological constructs under investigation. The results in Table S5, show that non of the treatments increased survey respondents' selection of Palestinian Facebook posts in our choice task. Indeed, we find null effects for our affirmation and intellectual humility treatments and a negative effect of the malleability treatment. Taken together, these analyses further emphasize our key insight from Study 3, that it is incredibly challenging to reduce intergroup avoidance with light touch treatments.

Table S5: TOT Estimates for Study 3 Psychological Treatments

	Outcome: Select Palestinian Post (0/1)		
	1	2	3
Affirmation Treatment	3.439		
	(3.269)		
Int. Humility Treatment		-0.928	
		(0.479)	
Malleability Treatment			-0.496*
			(0.160)
Num.Obs.	4294	4294	4294
R2	-19.351	-2.464	-0.587
Control Mean	0.155	0.155	0.155
Control SD	0.362	0.362	0.362

* $p < 0.05$