A fundamental cognitive bias increases support for violence against civilians in Gaza and Israel

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A fundamental cognitive bias increases support for violence against civilians in Gaza and Israel

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War is often characterised by indiscriminate violence against civilians. It is critical to understand why ordinary people might support acts such as ethnic cleansing or genocide, as popular support facilitates campaigns of indiscriminate violence[1–5]. Theory suggests that support may rest on ideologies and narratives that portray the target group as less than human and threatening[6-12], thereby creating a moral mandate for killing[13,14]. However, there has been little empirical study of these mechanisms during outbreaks of extreme violence. Here we report studies carried out in an ongoing campaign of violence in Gaza and Israel (*n* = 2462), showing that alongside such narratives, popular support for violence against civilians derives from a common cognitive error we term the *hate-motive bias*: the tendency to overestimate hate motives, and underestimate defensive motives, of outgroup aggression[15,16]. Hate-motive bias predicted support for various forms of violence against civilians even while statistically accounting for other predictors such as ideological orientation, dehumanisation of outgroups and perceived threat. Our results suggest that a common attribution bias may contribute to ordinary citizens supporting behaviour they might typically deplore. Efforts to correct this bias may offer a behavioural science lever for reducing popular support for violence against civilians.

Indiscriminate violence against civilians plays a defining role in some of the most violent intergroup conflicts, causing immense suffering to the victims and contributing towards broader political instability[17]. Between 1900 and 2018 mass atrocities have killed three times as many people worldwide (≈100 million) than have been killed by natural disasters[18]. It is estimated that genocide, one extreme example of such violence, killed or displaced over 100 million people between 1956 and 2016[19]. Such violence is facilitated by public indifference or support of attacks on civilians[1–3], thus elites frequently make use of propaganda tools to attempt to manufacture support[4,5].

Existing accounts emphasise the role of two ideological narratives that may underlie popular support for violence against civilians. First, ideological scripts that devalue or dehumanise the lives of the target population produce indifference to their suffering[8, 20–21]. Second, existential-threat narratives portray the outgroup as threatening, often recasting the target population as parasites, conspirators or contaminants, and may render violence against them as virtuous acts of self-defense[6–12]. Although these mechanisms are theoretically persuasive, empirical evidence drawn from ongoing violence remains sparse. Moreover, such explanations do not account for why indiscriminate violence against civilians is so common.

We propose that a fundamental cognitive attribution error, the *hate-motive bias*, is another important mechanism that can induce people to support acts of violence they may ordinarily deplore. Reflecting a general bias to attribute negative behaviours of other groups to relatively stable dispositional causes[16,22], the hate-motive bias is a tendency to overestimate hate motives, and underestimate self defence motives, behind the aggression of an adversary[15]. We theorised that the hate-motive bias may create a moral mandate for violence against civilians[13,14,26] by intensifying moral condemnation of the target group[23–25] and devaluing alternatives to extreme violence[9], because the threat posed by the outgroup cannot be nullified through diplomatic compromise[15].

To test this idea, we investigated support for violence against civilians in three studies with representative samples (n = 2462) of Jewish Israelis living in Israel and Palestinians living in the Gaza Strip. Our studies were conducted between May 2024 and April 2025, during the most intense period of political violence between Palestinians and Jews since 1947-1948. This round of violence was triggered by the attack on Israel on October 7, 2023 in which Hamas killed 1,195 people, the majority civilians, and took 251 people hostage[33]. As we discuss in Methods ('study context'), this attack occurred in the context of long-term systemic violence[27-32]. Israel's subsequent campaign in Gaza had, by 14 May 2025, killed at least 52,928 Palestinians and injured 119,846, with ~70% of verified fatalities being women or children[34]. International bodies have accused both Hamas and Israeli forces of committing war crimes, including deliberate targeting of civilians, hostage-taking, sexual and gender based violence, and forcible population transfer[35,36]. Thus, this is an appropriate context to test ideas about what drives popular support for indiscriminate violence against civilians.

Studies 1 (sampling Jewish Israelis) and 2 (sampling Palestinians inside Gaza) were conducted between December 2024 and January 2025, ending shortly before the announcement of a ceasefire between Israel and Hamas. Study 3 sampled Jewish Israelis at the end of March 2025, less than two weeks after Israel ended the ceasefire. Across all studies we measured: (i) *hate-motive bias* – the extent to which respondents judged the adversary's violence as driven by hatred rather than defence; (ii) contextually relevant measures of support for violence against civilians ranging from support for civilian casualties to support for

population displacement; and (iii) complementary mechanisms for popular support for violence against civilians including ideology, dehumanisation and threat perception.

Previewing our findings, hate-motive bias proved pervasive (Figs. 1 and 2) and predicted support for war, civilian harm, extreme violence and forced displacement (Fig. 3). Moreover, this effect held regardless of an individual's ideological stance, the extent to which they devalued or dehumanised the lives of target groups, perceived level of threat posed by the target group, and ingroup favouritism (all factors that also predicted support for violence against civilians), and while holding constant relevant demographic variables (Extended Data Tables 1-7). Our results isolate a robust independent cognitive mechanism that contributes to support for violence against civilians, suggesting new levers for de-escalation interventions and advancing our understanding of popular support for indiscriminate attacks of civilians in a time of war. We detail these findings below, first establishing the prevalence of the hate-motive bias and then tracing how it amplifies support for war, civilian harm and forced displacement.

The hate-motive bias is pervasive in conflicting groups

We find strong evidence for the hate-motive bias in Jewish Israelis and Palestinians living in Gaza. To measure this bias, we asked participants to indicate the extent to which they attributed the violence of the other side, and the violence of their own side, to defensive 'ingroup love' motives and to malevolent 'outgroup hate' motives (see 'Study 1 measures' in Methods). Jewish Israelis and Palestinians living in Gaza tended to believe that the other side was considerably more motivated by hatred than by defensive ingroup love motives (Fig. 1). To assess the extent to which attributions of the motives for violence of the other group differed from self-attributions of the outgroup we ran 2 (motive: hate vs. love) × 2 (source: outgroup attribution vs. outgroup self-report) mixed-design ANOVAs. We find powerful interactions between motive and source in each study, indicating that self and other motive attributions differed meaningfully in study 1 [$F(1,1310) = 371.44$, $p < 0.0001$, $\eta_p^2 = 0.09$]; study 2 [$F(1, 1310) = 224.29$, $p < 0.0001$, $\eta_p^2 = 0.06$]; and study 3 [$F(1, 1394) = 493.07$, $p < 0.0001$, $\eta_p^2 = 0.11$]). Across studies, both Jewish Israelis and Palestinians living in Gaza tended to attribute the outgroup's violence more to hatred, and less to defensive in-group love motives compared to outgroup self-reports (Fig. 1). As we report in Supplementary Information section A.1, this tendency was pervasive across both populations and not confined to particular socio-demographic segments or situational factors, except for moderate associations with nationalist orientation – confirming the hate-motive bias as a broad social phenomenon in this empirical setting.

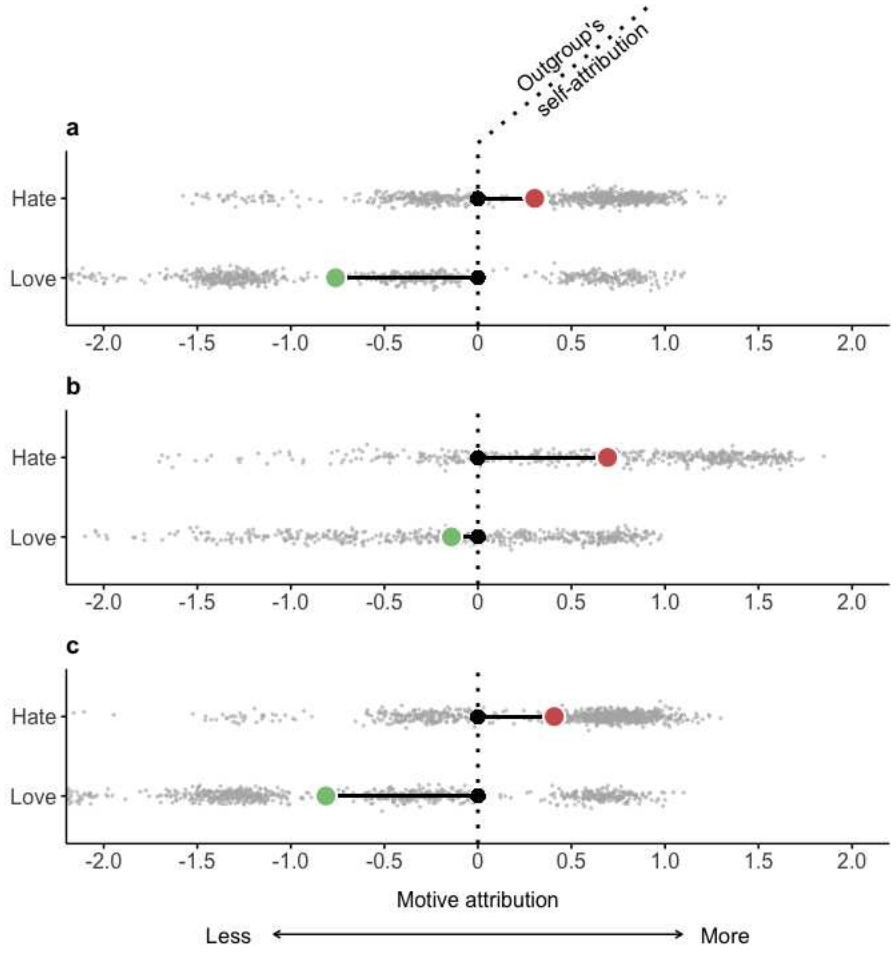

Fig. 1 | Misattributions of outgroup motives for violence. Red and green markers respectively indicate mean attributions of outgroup hate and ingroup love motives for violence by the other side, relative to the outgroup's self-reported motives (black markers; 0 means congruence with the outgroup's self-attribution). **a,** In study 1, Jewish Israelis (n = 881, representative) attributed Palestinian violence more to hatred of Israelis compared to self-attributions by Palestinians, t(1310) = 7.45, $P < 0.0001$, d = 0.43, and less to defensive ingroup love motives compared to Palestinians self-attributions, t(1310) = -14.56, p < 0.0001, d = 0.82. **b,** In study 2, Palestinians in Gaza (n = 500, representative) attributed Israeli violence more to hatred of Palestinians compared to self-attributions by Jewish Israelis, t(1310) = 14.59, $P < 0.0001$, d = 0.83, and less to defensive ingroup love motives compared to Jewish Israeli self-attributions, t(1310) = -3.11, p = 0.002, d = 0.18. **c,** In study 3, Jewish Israelis (n = 1,081, representative) again attributed Palestinian violence more to hatred of Israelis compared to self-attributions by Palestinians, t(1394) = 10.78, $P < 0.0001$, d = 0.61, and attributed Palestinian violence less to defensive ingroup love motives compared to Palestinians self-attributions, t(1394) = -15.3, p < 0.0001, d = 0.85. All mean differences are statistically different from 0 at 99.9% confidence intervals.

Heightened hate-motive bias amplifies support for violence against civilians

Next we carried out a set of preregistered regressions to test our prediction that higher levels of biased motive attribution predict support for violence against civilians. To estimate these effects of the hate-motive bias we calculated participant-level scores (referred to as HMB*)* by subtracting their attributions of violence by the other side to ingroup love motives from their attributions to outgroup hate motives. We then centred these scores on the average difference between self-reported outgroup hate and ingroup love motives for violence as reported by the relevant outgroup (Fig. 2). This approach ensures analytical consistency such that scores of HMB = 0 indicate congruent attributions with the outgroup's self-reporting, while positive scores result from overestimating the relative importance of hate over defensive motives for outgroup aggression. In our representative samples, some level of hate-motive bias was observed for more than 96.8% of Jewish Israelis (study 1, M=1.07, SD=1.13; study 3, M=1.10, SD=1.13) and 96.2% of Palestinians in Gaza (M=0.83, SD=0.62).

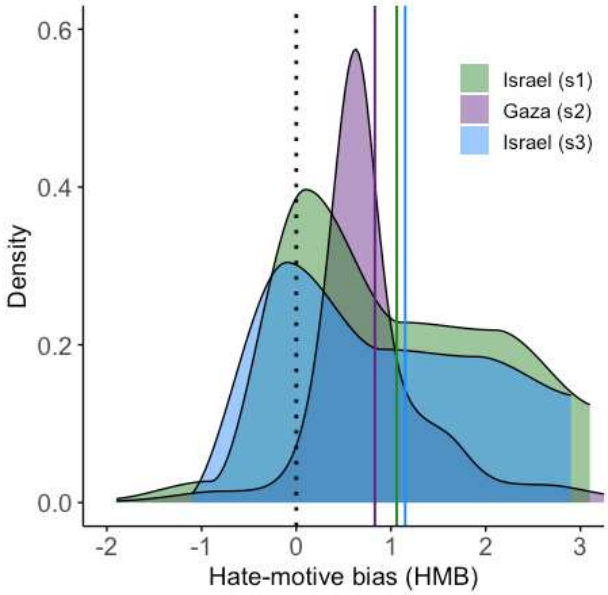

Fig. 2 | Prevalence of the hate-motive bias. Density plots of bias in the attribution of hate over love motives to the outgroup, centred on the respective outgroup's self-attributions. Positive scores of HMB indicate over-attribution of hate vs. love motives to outgroup violence. The green, purple and blue vertical lines respectively indicate mean bias in representative samples of Jewish Israelis (study 1; M = 1.07; *n* = 881), Palestinians in Gaza (study 2; M = 0.83; *n* = 500), and Jewish Israelis (study 3; M = 1.10; *n* = 1081). Line smoothing exaggerates the size of the left tail: less than 3.8% in each sample exhibited negative HMB scores.

In study 1, the larger an individual's hate-motive bias, the more likely they were to prefer war over diplomacy (Fig. 3a). Participants were asked to indicate a preference between military action ('continuing the IDF's ground and air combat activities in Gaza') or a diplomatic

action alternative ('economic blockades and negotiating hostage release deals'), if both were to be equally successful in achieving the release of hostages from Gaza. In two representative surveys we conducted over a nine month period, Jewish Israelis nominated this as the primary goal of the war (see 'Study 1 measures' in Methods). At the time of data collection, days before a temporary ceasefire deal with Hamas was announced, a minority of those with no hate-motive bias ($\mathrm{HMB} = 0$) preferred continued military action (33.7%) over diplomacy (66.3%). However, a notable shift occurs as hate-motive bias increases, with preference for war reaching 54.3% at +1SD above the mean. Consistent with these observational results, logistic estimation identified a +45.3% increase in the odds of preferring continued military violence over diplomatic action for each increase in hate-motive bias ($P < 0.001$; Extended Data Table 1).

Similarly, levels of hate-motive bias predicted support for two measures of specific violence against Palestinian civilians in Gaza. First, we measured whether participants believed that Israel's military actions should be 'against Hamas only, and not against ordinary Gazans' or whether they believed military actions should be against 'against all of Gaza', explicitly including civilians. Of those with no hate-motive bias ($\mathrm{HMB} = 0$), 47.9% believed that the war should be against 'all of Gaza'. As hate-motive bias increases so too does support for widening the scope of war to target ordinary Gazans, rising to 66.5% of our representative sample for those who scored +1SD above the mean for hate-motive bias (Fig. 3b). Logistic estimation identified a +49.8% increase in the odds of supporting indiscriminate targeting of civilians for each increase in hate-motive bias ($P < 0.001$; Extended Data Table 2).

Our second measure of support for violence against civilians in study 1 dealt with sensitivity to civilian casualties in Gaza (Fig. 3c). Here we measured the degree to which support for Israel's war conduct was sensitive to the number of Palestinian civilian casualties. Participants used a dynamic visual scale to indicate a total number of civilian deaths among the outgroup they would deem acceptable. Responses could range from what was the current estimate of civilian deaths (no more civilian deaths) to three times that number. As shown in Extended Data Fig. 2, the data were strongly bimodal with 42.5% of the sample choosing the maximum number of civilian casualties as acceptable. Thus we used a binary dependent variable comparing those who demonstrated full insensitivity to civilian deaths (coded as the value '1') with all other participants (coded as '0'). While 36.1% of respondents with no hate-motive bias ($\mathrm{HMB} = 0$) were willing to accept any number of civilian casualties, this proportion rose to 52.6% at +1SD above the mean for hate-motive bias. Corresponding logistical estimation found that the odds of being fully insensitive to civilian deaths increased by +58% with each incremental increase in hate-motive bias scores ($P < 0.001$; Extended Data Table 3).

Results from study 1 were replicated in studies 2 and 3 with different samples and new contextually relevant dependent variables. We use different dependent variables for different reasons. First, we were ethically restricted from asking about support for specific acts of violence in Gaza as we were concerned about the security of our respondents. We were also faced with other restrictions with our Palestinian sample as we included our measures of motive attribution for aggression in a broader data collection by the Palestinian Center for Policy and Survey Research (see 'Study 2 participants' in Methods). Second, we wished to ask contextually relevant questions that reflect actions involving violence against civilians in the Israeli-Palestinian conflict. In study 2, Palestinians in Gaza were asked about their support for 'continuing to engage in very extreme actions to protect and defend Palestine', on a continuous scale from 0 to 1 (see 'Study 2 measures' in Methods). As shown in Figure 3d, while participants at baseline ($\mathrm{HMB} = 0$) endorsed extreme attacks at 48.0% on average, this increased to 66.5% at +1SD of hate-motive bias. Fractional response regressions (logistic link) confirmed the average predictive effect of each increase in hate-motive bias on support for extreme actions by +19% ($P < 0.01$; Extended Data Table 4).

In study 3, which followed shortly after the breakdown of the Hamas-Israel ceasefire, we measured support for a policy of forced population transfer (FPT) of Palestinian civilians in Gaza. Following the public discussion of a 'mass relocation plan' by U.S. President Donald Trump in February 2025[37], the policy was formally endorsed by the Israeli government and subject to broad open discussion in Israeli society. We note that while Israel refers to emigration as voluntary, critics argue that the policy is predicated on creating conditions in Gaza that make continued residence impossible[38]. We investigated whether support for FPT was influenced by hate-motive bias. We presented participants with the plan in the following way: 'In a press conference with Israeli Prime Minister Benjamin Netanyahu, the United States President Donald Trump discussed a plan to relocate two million Palestinians from Gaza'. Participants were asked first about their degree of support (rated on a continuous scale) for the plan if no Palestinian civilians were to be killed (Fig. 3e), and then whether they would still support the plan (a binary choice) 'if Palestinian civilians would be killed by Israeli forces as they fight Hamas to implement the plan' (Fig 3d; see also 'Study 3 measures' in Methods). For respondents with no hate-motive bias ($\mathrm{HMB} = 0$), support for FPT stood at 78.4% in general and at 77.5% if it incurred Palestinian civilian deaths. However, at +1SD above the mean of hate-motive bias, support rose to 88.9% and 87.1%, respectively. Estimation models confirm these relationships, indicating that each increase in hate-motive bias predicted an increase in support for FPT ($d = 0.22$, $P < 0.001$; Extended Data Table 5), and a +58% increase in the odds of continuing to support FPT if it were to result in civilian deaths ($P < 0.001$; Extended Data Table 6).

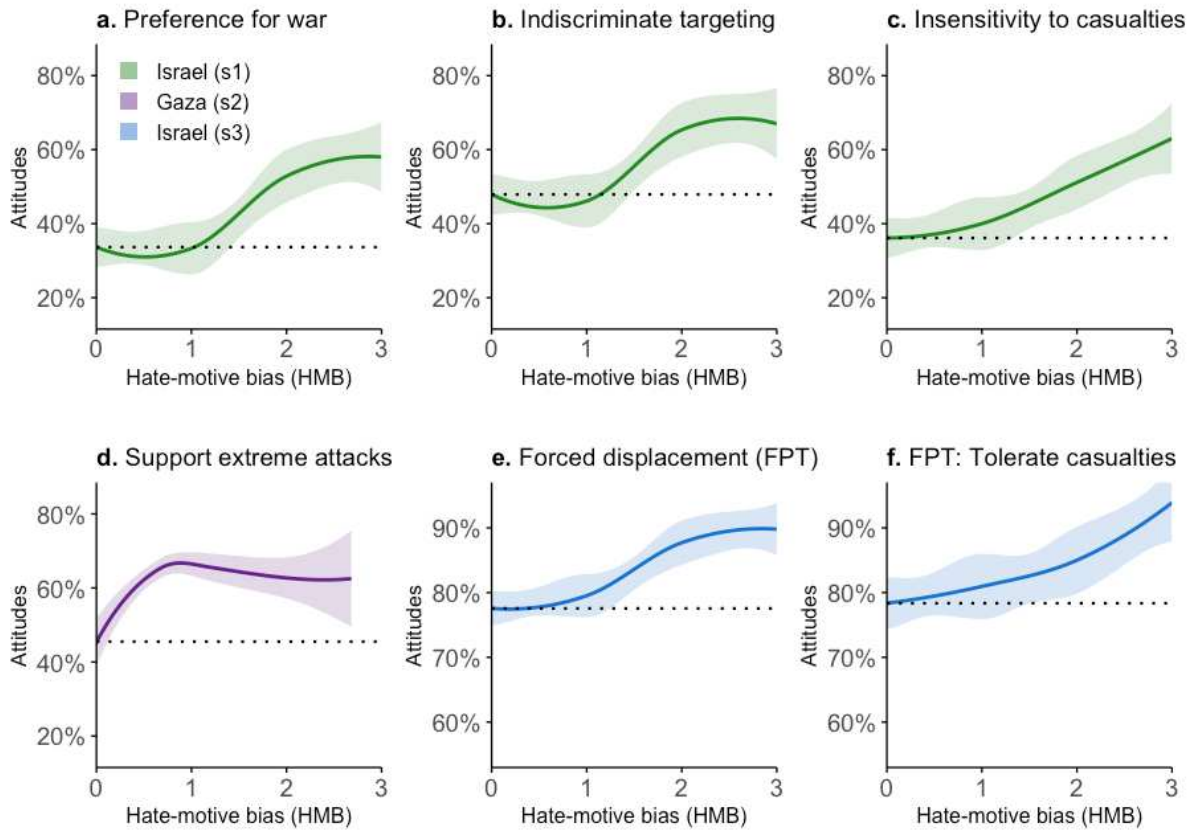

Fig. 3 | Endorsement of violence against civilians increases as a function of hate-motive bias levels. Fitted curves represent means defined by a locally estimated scatterplot smoothing (LOESS)-smoothed regression (span = 0.75) based on observed data. Error bands indicate 95% confidence intervals. **a–c,** In study 1 (*n* = 881, Jewish Israelis, representative) the three outcome measures were a preference for military over diplomatic action, defining the war as against civilians in addition to combatants, and full insensitivity to the number of additional civilian deaths among the outgroup. **d,** Study 2 (*n* = 500, Palestinians in Gaza, representative) measured support for extreme actions in the conflict with Israel. **e–f,** In study 3 (*n* = 1,081, Jewish Israelis, representative), the dependent measures were support for forcible population transfer in Gaza (FPT), and separately support for FPT if it were to result in civilian deaths. Across outcomes, effects of hate-motive bias are statistically significant for $\mathrm{HMB} \geq 1.20$ on average. As seen in Extended Data Tables 1-7, effects of hate-motive bias were robust when statistically controlling for demographic variables and other covariates including target group dehumanisation, devaluation of target group lives, perceived threat, and ideology, as well as in fully specified estimation models.

Hate-motive bias predicts support for violence against civilians independently of perceived threat and devaluation of the lives of the target group

In addition to measuring effects of hate-motive bias, we also investigated effects of other theory-derived mechanisms underlying popular support for violence against civilians. Here we were had two goals. One was to test the effects of these mechanisms as predictors of supporting violence against civilians in an ongoing conflict – and more specifically, whether they complemented hate-motive bias to allow us to better predict support for violence against

civilians. The other was to determine whether hate-motive bias acted independently of such variables.

First we investigated the effects of threat perception on support for violence against civilians. As noted in the introduction, perceived outgroup threat is a common theme in retrospective self-reports of motives for violence against civilians and in analyses of propaganda[5-9]. Thus we were interested in whether perceived threat from a target group and perceived motives of target group aggression were independent and complementary predictors of support for violence against civilians. In study 1 we measured different types of perceived threat and re-estimated the main analyses by including an index of perceived threat (alpha = 0.73) which consists of two abstract beliefs items ('Muslim Palestinians want to kill all Jewish Israelis'; 'Muslim Palestinians pose a threat to the security of Jewish Israelis.') and two perceptions of specific Palestinian goals since 7 October 2023 ('to commit genocide against us'; 'to conquer land and expel the Jews'). We report details on these measures in Extended Data Figure 3 and 'Study 1 measures' in Methods. Average perceived threat was high but with some variance (M = 4.34, SD = 0.69). Our analyses (Extended Data Tables 1-3), reveal: (a) that perceived threat strongly predicted all outcome measures – preference for war (OR = 1.60, $P < 0.001$), indiscriminate targeting (OR = 1.89, $P < 0.001$), and insensitivity to civilian outgroup deaths (OR = 2.04, $P < 0.001$) – improving model fit; and (b) that hate-motive bias independently predicted support for violence against civilians while controlling for threat perception. This suggests that threat perception and perceived outgroup motives are independent causes of support for violence against civilians. Testing specific threat perceptions individually, such as perceived genocidal intent of the outgroup, produced congruent results (range of effects from OR = 1.18 to OR = 1.84, all $P < 0.05$).

Second we investigated devaluation of the lives of members of the target group. Devaluation of lives is thought to be important in creating moral distance from immoral acts[8,20]. We were interested in whether measures of devaluation of outgroup lives would add explanatory power to our models, and whether effects of hate-motive bias were independent of effects of devaluation of outgroup lives. In study 1 we measured relative valuation of outgroup and ingroup lives by adapting a cross-culturally validated moral dilemma task[39]. In this task, participants decide whether an ingroup member should sacrifice their life to save a group of teenagers from a burning building; the identity of the teenagers was randomly manipulated to be belonging to the ingroup or to the outgroup, allowing to capture differentials in life valuation (see 'Study 1 measures' in Methods). Our analyses (Extended Data Tables 1-3) reveal: (a) that relative devaluation of outgroup lives predicted a preference for war (OR = 1.91, $P < 0.001$), indiscriminate targeting of violence (OR = 2.63, $P < 0.001$), and insensitivity to civilian outgroup deaths (OR = 1.69, $P < 0.01$); and (b) that hate-motive bias independently predicted support for violence against civilians while controlling for devaluation of human lives.

In study 2, we extended this test to a measure of blatant outgroup dehumanisation[40,41]. Palestinian participants in Gaza used a dynamic visual slider to indicate the degree to which they perceived Palestinians and Israelis as human (see 'Study 2 materials' in Methods and Supplementary Information section A.3). Analyses reveal that including dehumanisation had a statistically significant but small effect on supporting extreme attacks while improving model fit (OR = 1.01, $P < 0.001$; Extended Data Table 4). Again, hate-motive bias independently predicted support for extreme attacks while statistically controlling for dehumanisation.

Collectively these results suggest that effects of hate-motive bias operate in parallel with ideological narratives that devalue the lives of target groups or cast them as existential threats, to predict support for violence against civilians. To further rule out the risk of confounding, we conducted extensive mediation analysis of perceived threat, outgroup live devaluation and dehumanisation for each outcome (Extended Data Fig. 4). Results confirm marginal mediation effects in some cases and the distinctness of the parallel pathways throughout.

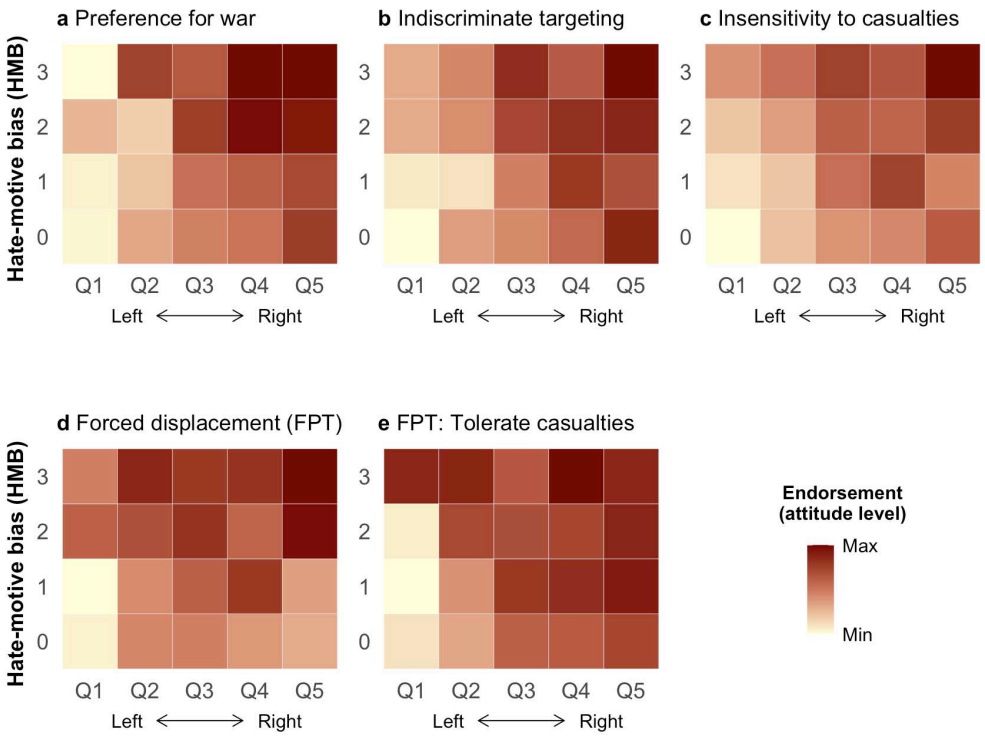

Fig. 4 | Interaction of political ideology and hate-motive bias effects. Darker cell shading indicates greater mean support for violence against civilians (minimum-maximum normalised) based on representative samples of Jewish Israelis in Israel (**a–c,** study 1, *n*=881; **d–e**, study 3, *n*=1081). Across outcomes, support increased with more right-leaning political ideology (horizontal axis, binned quintiles). Yet hate-motive bias was associated with greater support for violence against civilians across the political spectrum (vertical axis). Mean differences between cells are independently and jointly statistically significant at 99.9% confidence intervals.

Hate-motive bias predicts support for violence against civilians independently of ideological orientation

To further investigate whether effects of hate-motive bias are independent of ideological narratives we re-estimated models in studies 1 and 3 including self-reported ideology as a predictor variable. While effects of hate-motive bias are independent of our measures of threat perception and devaluation of lives, broad measures of ideology indirectly capture other ideological narratives that may contribute to support for violence against civilians. Indeed, supporters of the right-wing coalition government in Israel tend to most strongly endorse the war in Gaza[42,43].

We re-estimated the regression models including a self-reported measure of left-right political orientation (on a 1-7 scale) to examine independent and interactive effects on our measures of support for violence against civilians. In models that included ideology and hate-motive bias as predictor variables, the more respondents leaned to the right in Israeli politics the more likely they were to support violence against civilians. Specifically, in study 1

(Extended Data Tables 1-3) the more people placed themselves on the right in the Israeli political spectrum, the more likely they were to support war over diplomacy (OR = 2.19, $P < 0.001$), indiscriminate targeting of violence (OR = 1.94, $P < 0.001$), and to be fully insensitive to outgroup civilian casualties (OR = 1.69, $P < 0.001$). We found similar results in study 3 (Extended Data Tables 5-6), where the more participants identified as leaning to the right, the more they supported forcible population transfer (d = 0.13, $P < 0.001$) even when incurring civilian deaths (OR = 2.06, $P < 0.001$).

Despite the importance of ideology as a predictor variable, hate-motive bias remained an independent predictor of support for violence against civilians. As Figure 4 illustrates, both variables had independent effects such that greater hate-motive bias was associated with greater support for violence against civilians across the ideological spectrum (Fig. 4). In addition, an interactive effect emerged (OR = 1.08, $P < 0.0001$) whereby the effect of ideology is accentuated as hate-motive bias increases. By implication, the impact of biased motive attribution is not limited to people on the political right, but instead holds for broader parts of the population with less of an ideological predisposition to aggression against an outgroup. As we report in detailed characterizations across the political spectrum (Supplementary Information section A.2), this includes left- and centre-leaning individuals who were more likely to report participation in protests against the Netanyahu-led government and generally emphasised more restricted war goals for Israel in the current conflict.

Effects of hate-motive bias on supporting violence against civilians are robust

Finally, we report several robustness checks to our main findings. In each study we re-estimated regression models for each outcome variable. These extended models included the previously discussed variables alongside demographic variables including gender, age, and education and two additional variables we discuss here. To preview, in all analyses the predictive effects of hate-motive bias on support for violence against civilians was robust to the inclusion of these variables (Extended Data Table 7).

The first additional variable we included was a bias that is symmetrical to the hate-motive bias: the tendency to attribute ingroup violence more to defensive 'ingroup love' than to dispositional 'outgroup hate' motives[15]. One conceptual concern not addressed so far was that effects of hate-motive bias may reflect general ingroup favouritism rather than a distinct bias in attributing violence motives to the outgroup. However, while ingroup motive misattribution for violence predicted four out of six measures of support for violence against civilians, it was typically a weaker predictor than hate-motive bias which continued to predict all outcome variables (Extended Data Table 7). This suggests that the observed mechanisms are indeed specific to attributions about the outgroup motives for violence.

A separate interest was whether support for violence against civilians might be driven by personal exposure to the conflict. Prior research has linked direct experiences of violence to increased aggression[44]. However, several lines of evidence suggest this is unlikely to account for our findings. First, in Israel, a relatively small minority – and thus a small subset of participants in our representative samples – has been directly exposed to violent attacks by Palestinian on or since October 7, 2023. In our data, only 9.6% reported having served in the Israeli Defense Forces during that time, and support for violence did not differ among this subset compared to the rest of the population. We conducted extensive geospatial analysis of our Israeli samples in studies 1 and 3 to account for geographical exposure to the conflict (Extended Data Fig. 5 and Supplementary Fig. 1). We find no effects of proximity to either the Gaza border or known attack sites on and since October 7, 2023 on support for violence against civilians. There is also no relationship between variations in the hate-motive bias and proximity to attack sites or to Gaza. This can be seen by the uneven geographical distribution of hate-motive bias across Israel, with some notable locations (e.g., West Jerusalem) showing high levels of bias but being relatively geographically removed from recent outgroup violence. We interpret this as further evidence that hate-motive bias and its downstream effects on support for violence against civilians is driven by social perceptions and indirect conflict exposure. Finally, the full models presented here routinely control for geographical exposure, and results remain robust to these specifications (Extended Data Tables 1-7).

In Gaza meanwhile, war exposure was near-universal at the time of data collection, making it difficult to test for individual or geographical differences in conflict exposure. However, variation in the number of internal displacements showed only a weak relationship with support for extreme attacks ($r = 0.14$; $P < 0.01$; $n = 500$), and none in the fully specified regression ($P = 0.06$; Extended Data Table 4), again ruling out this confounding risk.

Discussion

In protracted conflicts that involve mass civilian suffering and the repeated breakdown of diplomatic efforts, broad popular support sustains the continuation of political violence, often on both sides. Our findings provide an explanation how such support emerges not only among ideological hardliners but also among members of the public who might normally deplore such aggression. This article identifies a novel contributor to support for violence against civilians, the *hate-motive bias*. In three studies of representative samples of two populations involved in a protracted campaign of violence against civilians, Jewish Israelis and Palestinians in Gaza, we found systematic tendencies to over-attribute the other group's violence to targeted malevolence (outgroup hate) compared to defensive concern (ingroup love). Moreover, variations in the intensity of this bias predicted multiple measures of support for violence against civilians. These effects of this cognitive bias were not limited to ideological extremes,

and complemented the influence of ideological narratives, including outgroup life devaluation, dehumanisation and perceived existential threat, previously theorised to relate to violence against civilians[5-12].

These findings advance several novel contributions. First, we report a rare empirical test of theories regarding support for violence against civilians in the context of an active violent dispute which has featured extreme acts of violence that have targeted ordinary civilians. We show the importance of specific ideological narratives that are important predictors of support for violence. Second, we identify a cognitive bias that independently predicts support for violence against civilians. The hate-motive bias likely derives from the fundamental attribution error[16, 45], the tendency to attribute negative behaviour of other groups to dispositional factors. The presented evidence suggests that attribution errors in the context of motives for intergroup hostilities can translate into supporting extreme forms of political violence. Systematically distorted perceptions about outgroup violence as hate-driven may shift moral boundaries in times of conflict, allowing violent policies to gain support across broad populations, including those who would ordinarily oppose them. Research has demonstrated that the tendency to attribute negative outgroup behaviours to dispositional causes, a key aspect of the fundamental attribution bias, is present across different cultural boundaries[46]. While this lends us some confidence in the generalisability of this work, more research is needed to investigate the effects of hate-motive bias on support for violence against civilians, in other cultural and political contexts.[47]

We identify two practical applications of our findings that should motivate future work. First, a growing literature has demonstrated that reducing misperceptions, by correcting or challenging norms[48], meta-misperceptions[49] and perceived dehumanisation[50], can effectively reduce hostilities and increase openness to reconciliation in intergroup conflicts. Work that focuses on correcting the attribution bias we identify, the hate-motive bias, could complement this work to promote support for diplomacy and restrain support for political violence. Indeed, we suggest that correcting this bias may prove critical: individuals may not only misperceive how threatening the outgroup is, or how much they are dehumanised by the outgroup, but also the motives behind outgroup violence. Recognising this may open new avenues for enhanced interventions. Additionally, the predictive importance of the hate-motive bias in our work suggests that the development of different means of measuring this bias may lead to enhanced predictive tools to assess risk of conflict escalation and civilian harm.

By capturing the process of moral legitimisation of violence – asymmetrical perceptions of outgroup hate and ingroup love for violence committed by both sides – this article may offer insight into how ordinary populations can shift toward militant support in times of polarisation or political unrest. Future research should explore its expression across other empirical

settings and evaluate whether targeted interventions can mitigate its effects before such support manifests in political violence.

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Methods

Ethics and preregistration

The research was approved by the London School of Economics and Political Science Research Ethics Committee (REC), protocol #479156 "Moral reasoning in conflict resolution dilemmas", approved on 16 December 2024. A previous ethics review was granted on 8 May 2024 (REC protocol #366932). All participants provided informed consent prior to participation.

The study design, sampling strategy and analysis plan for study 1 were preregistered at OSF [https://osf.io/mv53y] before data collection. Studies 2 and 3 replicate the main analysis plan and measures from the preregistration but were not separately preregistered. Exploratory analyses are included as part of the robustness checks and heterogeneity tests in the main text and Supplementary Information.

Study context

This research was conducted in Israel and the Gaza Strip between May 2024 and April 2025. The Gaza Strip ('Gaza') is a small segment of the broader regional district of Gaza in historic Palestine, located on the Mediterranean Sea between Israel and Egypt. The majority of its 2.1 million residents are descendants of the approximately 200,000 Palestinian refugees forced to flee their homes during the 1947-1948 war that led to the establishment of the State of Israel[27]. After another war in 1967, Israel occupied Gaza and although it withdrew its military forces and settlements in 2005[28], it is generally seen as a dominant power as it controls the borders and airspace of the territory. Shortly after, Hamas – a Palestinian Islamist political and militant organisation that is considered a terrorist group by Israel, the United States, and the European Union – assumed the role of *de facto* governing the Palestinian territory in Gaza. Since the collapse of the peace process in 2001[29] and Hamas coming to power in Gaza in 2007, there have been a number of violent conflicts between Israel and Gaza resulting in almost 6,000 casualties of which 95% were Palestinian[30]. During the same period, Israel's military control over Palestinians in the West Bank and Gaza and increasing settlement of occupied lands have drawn greater condemnation and comparisons to apartheid[31], charges that Israel denies arguing that its policies are necessary security measures[32].

As of this writing, the latest round of violence between Israel and Gaza was triggered by the attack on Israel on October 7, 2023 in which Hamas killed 1,195 people, the majority civilians, and took 251 people hostage[33]. Israel military response, characterised by intensive airstrikes, ground invasions, and blockades of food and medicine entering Gaza, has caused severe suffering. Ninety percent of the population has been displaced, at least 60,000 people have been killed, the majority civilians, and the population suffers from a lack of adequate medical care, widespread hunger and malnutrition[34]. Both Hamas and Israeli forces have been accused by international bodies of committing war crimes, including deliberate targeting of civilians, hostage-taking, sexual and gender based violence, and forcible population transfer[35,36]. Thus, our studies were created during the most intense period of political violence between Palestinians and Jews since 1947-1948.

In this context, the reported studies 1-3 examine support for violence against civilians during the war in Gaza and Israel that is ongoing as of 2025. Across all studies, we measure a common cognitive bias, the 'hate-motive bias', and examine a range of contextualised outcome variables. In the following, we report technical details on the data collection, materials, and methods used in analysis.

Study 1

Pilot. We collected data from 536 adult Jewish Israelis in May 2024 as a pilot survey on 'baseline' political attitudes about the ongoing conflict in Gaza and Israel, and to assess data quality on politically sensitive outcome measures. This pilot study was separately approved and did not include the main measure of hate-motive bias, and thus did not contribute to the samples, statistical analysis or results reported from the main studies.

Participants. On the basis of effect sizes from previous literature[15], we predetermined to recruit 800 complete responses in which participants answered the key independent and dependent variables (see measures), with the intention to have a representative sample. We recruited adult Jewish Israelis using iPanel, the leading online research panel service in Israel. Data collection took place between January 2 and January 10, 2025, adhering to socio-demographic quotas for age, gender, and religious affiliation to match census statistics from the State of Israel[50]. The surveys were self-administered in Hebrew language. We recruited a total of 881 participants of which 799 answered the key independent variable and each of the three dependent variables. We focused our main analysis and discussion on these 799 responses (for sample characteristics, see Extended Data Fig. 1). Results with incomplete responses are consistent with those reported here.

Measures.

Hate-motive bias. The central independent variable, which was administered across all studies, is a measure of how strongly attributions of motives for outgroup violence overestimate malevolent intent (outgroup hate) compared to defensive intent (ingroup love). For this, we adapted a question format[15] that involves participants first reading a prompt about recent, extreme intergroup violence ('In the ongoing conflict between Israel and Gaza, Palestinians have launched military attacks against Israel, and Israelis have launched military attacks against Gaza.'). This is followed by two questions about the motives for extreme violence among each respective group: 'Why do you think many Palestinians in Gaza [many Israelis] support attacks against Israel [against Gaza] during this conflict? (1) Is it because of their love of Palestine [love of Israel]? (2) Is it because they hate Israelis [hate Palestinians]?' These responses – hate and love motive attributions to Palestinians (outgroup) and to Israelis (ingroup) – were given on a four-point scale from 'certainly no' to 'certainly yes'. The order of target group (ingroup vs. outgroup) and motive type (love vs. hate) was randomised between participants.

We defined hate-motive bias as the difference score in outgroup motive attributions, adjusted by the relative self-attributions by the outgroup to ensure scale uniformity (scores of 0 corresponding to accurate motive predictions, while positive scores result from over-attribution of hate motives and/or under-attribution of love motives compared to self-reports from the outgroup):

$$HMB = (hate_{out} - love_{out}) - (hate_{self\_out} - love_{self\_out})$$

Where HMB is the hate-motive bias, the main predictor of interest; $hate_{out}$ and $love_{out}$ are attributions of outgroup hate and ingroup love motives to the outgroup; and $hate_{self\_out}$ and $love_{self\_out}$ are self-reported hate and love motives by the relevant outgroup. We specifically used the study 2 sample (Palestinians in Gaza) as the outgroup data source for self-attributions in studies 1 and 3, and the study 1 sample (Jewish Israelis) as the outgroup data source for self-attributions in study 2.

Preference for war. For the first dependent variable we measured the degree participants from the general population support the continuation of military attacks against the outgroup over diplomatic

action. In a pre-registered pilot as well as in this study, majorities of Jewish Israeli participants indicated the release of all remaining hostages in Gaza as Israel's primary war goal (see also Supplementary Information section A.2), which motivated the choice for aligning this measure with tangible outcomes of military vs. diplomatic action. Our measure of preference for war is linked to this priority. Participants answered the following situational question relating to the ongoing conflict: 'Imagine that you need to decide how to resolve this crisis. You have two options available with the goal of rescuing the hostages: the use of diplomatic pressure, or the use of military force. The diplomatic strategy involves economic blockades and negotiating hostage release deals. The military strategy involves continuing the IDF's ground and air combat activities in Gaza. Which strategy would you choose if you knew that all the hostages could be saved?'. The response scale was a binary choice between 'the use of diplomatic pressure' and 'the use of military force', coded as 0 and 1, respectively. The ordering of response options was randomised.

Indiscriminate targeting of violence. The second outcome measure aimed at the differentiation of active combatants from civilians. Although this distinction is often blurred and difficult to make objectively during active conflict[51], evidence suggests[52,53] that different subjective moral judgments apply between deaths of combatants compared to civilians. Conversely, the lack of making such distinction has been linked to extreme political attitudes[54]. We accounted for this by providing the following prompt ('Some Israelis see the war as being against Hamas only, and not against ordinary Gazans. Others argue that all of Gaza is the enemy, because civilians voted for Hamas and were seen to celebrate after October 7. Which do you agree with?'), after which participants indicated a choice between 'the war is against Hamas only' and 'the war is against all of Gaza'. A binary dependent variable was coded as 0 and 1, respectively.

Insensitivity to civilian casualties. This third outcome measure concerns the disregard of civilian deaths among outgroup members as a specific aspect of endorsing intergroup violence. A follow-up prompt to the *Preference for war* question read the following: 'Now imagine that avoiding further casualties in Gaza can not be guaranteed. Including the 28 thousand until now, what do you think is the highest acceptable number of civilian casualties in Gaza (approximately) for you to continue supporting the use of military force?' Participants used a dynamic slider ranging from 28,000-84,000 to indicate at which level they would still support the war 'if Gazan civilian casualties are fewer than' the number indicated. The scale range was chosen to range from the current estimate of civilian outgroup deaths at the time of data collection (no more civilian deaths) and allow for variation up to three times that number. As a dependent variable in our analysis, we coded a binary variable that takes the value 1 only if participants chose the maximum number (84,000), and 0 else.

Threat perceptions. We calculated an index of perceived existential threat based on four items, measured on a five-point scale ranging from 1 ('not at all true') to 5 ('completely true'). Two items followed a prompt ('Please answer the following as you think the average Israeli Jew would answer.') and measured general outgroup threats: 'Muslim Palestinians want to kill all Jewish Israelis'; 'Muslim

Palestinians pose a threat to the security of Jewish Israelis'. The other two items followed a prompt ('What do you think is the aim of Palestinians on October 7 and in the war since?') and measured specific outgroup threats: 'To commit genocide against us'; 'To conquer land and expel the Jews').

The item ordering was randomised. Indexing was based on item means and had good reliability (alpha = 0.73). See Extended Data Figure 3 for descriptive statistics per item and for the overall index.

Devaluation of lives. We adapted a life evaluation measure[39] that consists of a moral judgment task modelled after the trolley dilemma[55] and validated in conflict settings[56]. In the task, participants decide whether an ingroup member should sacrifice their life to save a group of teenagers from a burning building; the identity of the teenagers is randomly manipulated to be belonging to the ingroup or to the outgroup, allowing to capture differentials in life valuation. (see Supplementary Information section A.3 for the full vignettes of this measure).

Political ideology. We measured left to right political orientation with the following item: 'In Israeli politics it is customary to refer to left and right. Where would you place yourself on a scale of 1 to 7?' (for reference, 1 = 'Extremely Left', 4 = 'Centre', 7 = 'Extremely Right').

Proximity/conflict exposure. To account for geographic exposure to the conflict, we conducted a geospatial analysis of participant locations (see Extended Data Fig. 5 and Supplementary Information section A.4). We grouped observations by Internet Service Provider (ISP) location at town/city level based on a public ISP localization database with 80% accuracy in Israel. We then used QGIS to compute proximity to the Gaza Strip using the border polygon based on the Database of Global Administrative Areas (GADM).

For an alternative conceptualization of proximity we comprehensive data on political violence incidents inside Israeli territory[57], filtered to only include events between October 7, 2023 and April 7, 2025 and relevant incident types (Remote explosive/landmine/IED, armed clashes, shelling/artillery/missile attacks, grenade attacks, air/drone strikes, suicide bombings, abduction/forced disappearances, and overtaking of territory), and only those events clearly linked to Palestinian actors and allied actors (notably Hezbollah, Hamas, Al Aqsa Martyrs Brigade, Palestinian Islamic Jihad, and various suborganizations). The total event count in this time frame was 9,710 attacks of various sizes and impact, of which 111 (which caused some of the highest impact) on October 7, 2023. We then performed nearest-neighbour analysis in QGIS to calculate proximity to attack sites.

Ingroup favouritism (motives). Ingroup favouritism is defined as a conceptual counterpart to hate-motive bias (see technical details in this section). Consequentially, we defined it as the difference score in ingroup motive attributions (as opposed to centred motive attributions to the outgroup), that is, $(love_{self\_in} - hate_{self\_in})$, where $love_{self\_in}$ and $hate_{self\_out}$ are love and hate motives for violence committed by the ingroup. Higher scores indicate more favourable motive attributions to the ingroup.

Demographics. Socio-demographic information included participants' age, gender, education level, religiosity (secular, traditional, religious or orthodox), and income level (below/average/above national average household income). See Extended Data Figure 1 for sample characteristics and levels.

Study 2

Participants. A representative sample of N=500 Palestinian participants were surveyed as part of in-person interviews implemented by Artis International and the Palestinian Center for Policy and Survey Research (PSR), which regularly conducts survey research in Gaza. A large majority of participants had experienced multiple internal displacement, so representative sampling was instead based on target quotas for the location of original residence at the start of the current war. Interviews were conducted in Arabic language by trained enumerators with oversight from PSR.

Measures.

Hate-motive bias. See study 1 materials.

Support for extreme attacks. A dynamic visual slider (position coded continuously between 0 to 1) moved by participants 'to the position that best represents your view on how many people from Palestine support continuing to engage in very extreme actions to protect and defend Palestine' (see Supplementary Information section A.3 for the visual aid used).

Outgroup dehumanisation. We measured a measure of blatant dehumanisation using a widely used visual scale[40,41] and the following prompt: 'People could vary in the degree to which they appear human. Some people seem to be highly evolved, whereas other people seem not to be different from animals that are at a lowest evolutive scale.' Participants then used a continuous slider coded from 0 to 1 to respond to two items ('Please, move the slider to the position that best represents the level of human evolution that the people of Palestine have reached'; 'Please, move the slider to the position that best represents the level of human evolution that the people of Israel have reached'). The items used a visual aid of a fully evolved human and less-evolved figures (see Supplementary Information section A.3). We calculated the difference between these two ratings (ingroup minus outgroup) as a measure of dehumanisation, with higher values indicating stronger denial of human qualities to the outgroup.

Displacement experiences. As a proxy for conflict exposure with some individual variance in Gaza during the time of data collection, we measured conflict-related displacement ('How many times have you and your family been displaced since October 7, 2023?'). Responses were recorded as a count variable.

Ingroup favouritism (motives). See study 1 materials.

Demographics. Socio-demographic information included participants' age, gender, education level, religiosity ('not religious', 'somewhat religious', 'religious), and socio-economic status (using a 10-point ladder visual aid measure, see Supplementary Information section A.3). Extended Data Figure 1 reports sample characteristics and levels.

Study 3

Participants. Based on study 1 results, we chose to recruit 800 complete responses in which participants answered the key independent and dependent variables (see measures), with the intention to have a representative sample. We recruited adult Jewish Israelis using the iPanel research recruitment platform. Data collection took place between March 27 and April 7, 2025, adhering to socio-demographic quotas for age, gender, and religious affiliation to match census statistics from the State of Israel[50]. The surveys were self-administered in Hebrew language. We recruited a total of 1,081 participants of which 897 answered the key independent variable and each of the three dependent variables. We focused our main analysis and discussion on these 897 responses (for sample characteristics, see Extended Data Fig. 1). Results with incomplete responses are consistent with those reported here.

Measures.

Hate-motive bias. See study 1 materials.

Support for forced displacement (FPT). We measured support for a policy of forced population transfer (FPT) as publicly discussed by US and Israeli officials[37,38] shortly before data collection in February 2025. We presented participants with the plan in the following way: 'In a press conference with Israeli Prime Minister Benjamin Netanyahu, the United States President Donald Trump discussed a plan to relocate two million Palestinians from Gaza.' Support was then measured using the following item: 'Would you support this plan if no Palestinian civilians in Gaza would be killed?' Responses were coded on a six-point scale ranging from 1 ('strongly oppose') to 6 ('strongly support') and rescaled to range from 0 to 1 for comparable data visualization.

FPT: Tolerate casualties. A follow-up question to the *Support for forced displacement (FPT)* measure assessed support under conditions of lethal violence against civilians, using the following item: 'If the plan was to proceed, Hamas is likely to fight it. Would you support this plan if some Palestinian civilians would be killed by Israeli forces as they fight Hamas to implement the plan?' Responses were coded as a binary variable that takes the value 0 (no) or 1 (yes).

Political ideology. We measured left to right political orientation with the following item: 'In Israeli politics it is customary to refer to left and right. Where would you place yourself on a scale of 1 to 7?' (for reference, 1 = 'Extremely Left', 4 = 'Centre', 7 = 'Extremely Right').

Proximity/conflict exposure. To account for geographic exposure to the conflict, we conducted a geospatial analysis of participant locations (see Extended Data Fig. 5 and Supplementary Information section A.4). We grouped observations by Internet Service Provider (ISP) location at town/city level based on a public ISP localization database with 80% accuracy in Israel. We then used QGIS to compute proximity to the Gaza Strip using the border polygon based on the Database of Global Administrative Areas (GADM).

For an alternative conceptualization of proximity we comprehensive data on political violence incidents inside Israeli territory[57], filtered to only include events between October 7, 2023 and April 7, 2025 and relevant incident types (Remote explosive/landmine/IED, armed clashes, shelling/artillery/missile attacks, grenade attacks, air/drone strikes, suicide bombings, abduction/forced disappearances, and overtaking of territory), and only those events clearly linked to Palestinian actors and allied actors (notably Hezbollah, Hamas, Al Aqsa Martyrs Brigade, Palestinian Islamic Jihad, and various suborganizations). The total event count in this time frame was 9,710 attacks of various sizes and impact, of which 111 (which caused some of the highest impact) on October 7, 2023. We then performed nearest-neighbour analysis in QGIS to calculate proximity to attack sites.

Ingroup favouritism (motives). See study 1 materials.

Demographics. Socio-demographic information included participants' age, gender, education level, religiosity (secular, traditional, religious or orthodox), and income level (below/average/above national average household income). See Extended Data Fig. 1 for sample characteristics and levels.

Data availability

All data used in the analyses is available at OSF [osf.io/npa8b].

Code availability

All analysis code in R and Stata is available at OSF [osf.io/npa8b].

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Author contributions N.M. and J.G. initiated and designed the research. N.M. analysed the results. J.G. acquired funding. N.M. and J.G. wrote the manuscript.

Competing interests The authors declare no competing interests.

Additional information

Supplementary information Supplementary Information is available for this paper.

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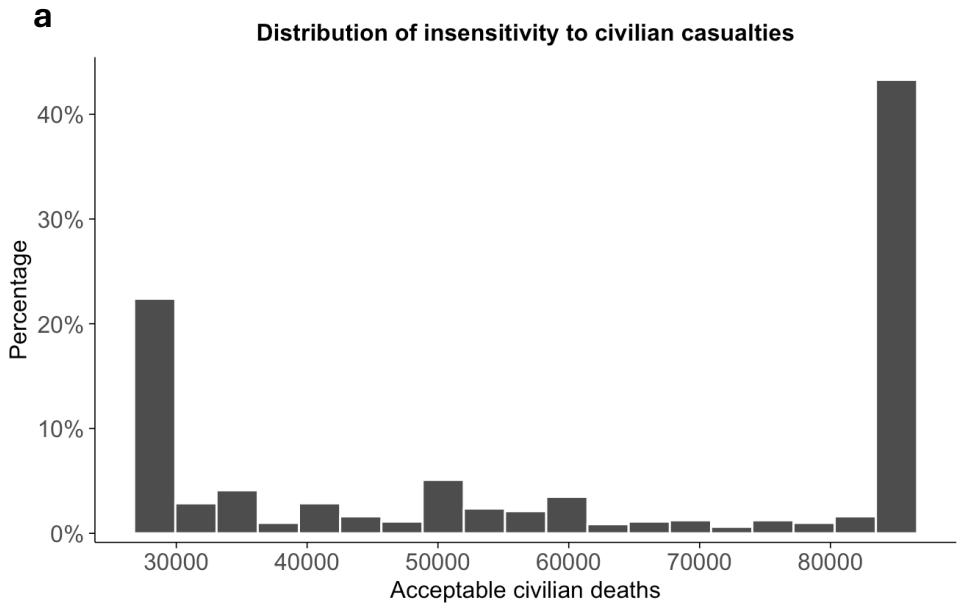
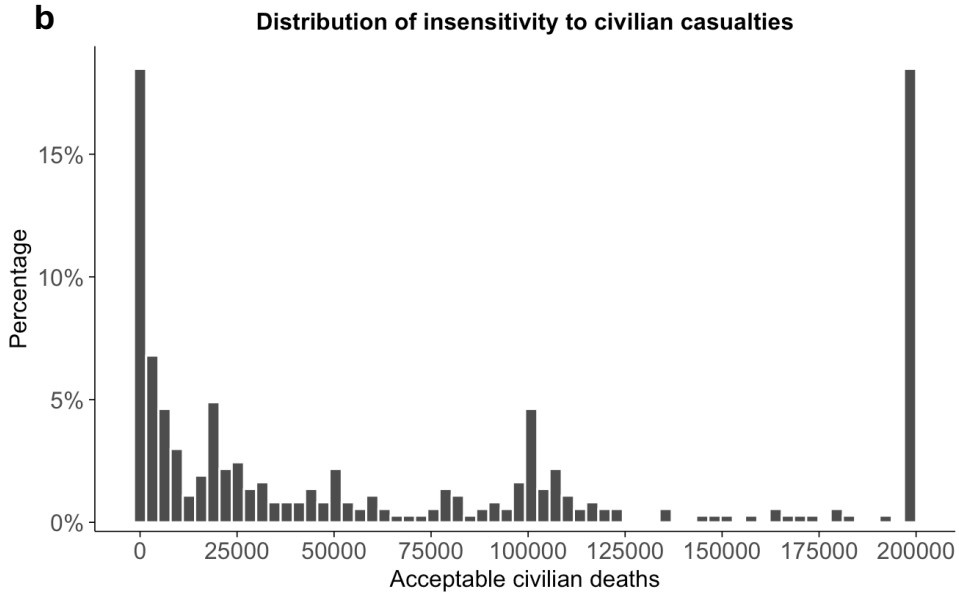
Extended Data

Extended Data Fig. 1. Sociodemographic characteristics of study samples.

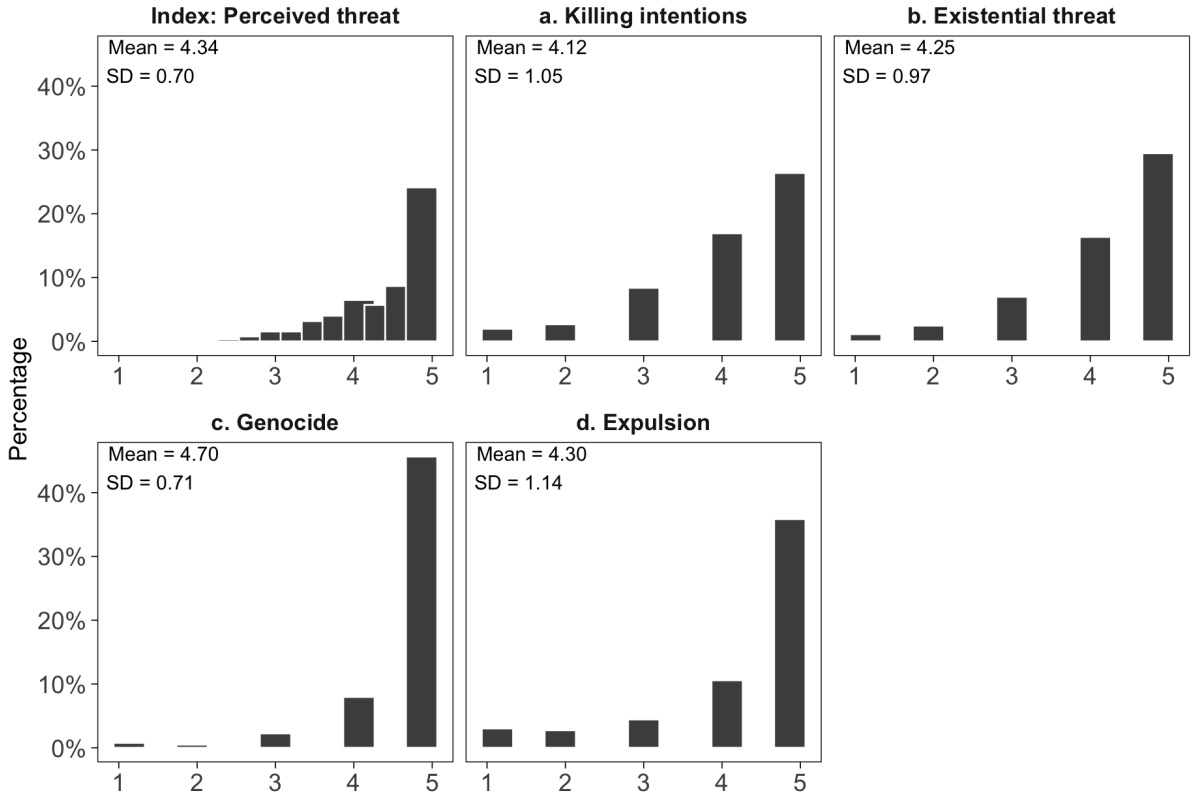
	Study 1 (Israel)		Study 2 (Gaza)		Study 3 (Israel)	
Variables	*n*	%	*n*	%	*n*	%
Israel sample	**881**	**100.00**	**500**	**100.00**	**1,081**	**100.00**
Gender						
Male	372	42.22	252	50.40	399	36.91
Female	399	45.29	248	49.60	496	45.88
Other/NA	110	12.49	0	0.00	186	17.21
Age						
18–24 years	111	12.60	108	21.60	107	9.90
25–34 years	174	19.75	136	27.20	212	19.61
35–44 years	129	14.64	106	21.20	213	19.70
45–54 years	141	16.00	83	16.60	158	14.62
55–64 years	119	13.51	54	10.80	131	12.12
≥65 years	87	9.88	13	2.60	73	6.75
NA	120	13.52	0	0.00	187	17.30
Religiosity (Israel)						
Secular	412	53.44			287	26.55
Traditional	210	27.24			167	15.45
Religious	103	13.36			277	25.62
Orthodox	46	5.97			168	15.54
Religiosity (Gaza)						
Not religious			6	1.20		
Somewhat religious			337	67.40		
Religious			157	31.40		
NA			0	0.00		
Income & SES						
Much below average	47	12.37	15	3.00	152	14.06
A little below average	82	15.66	104	20.80	136	12.58
Average	42	23.16	153	30.60	267	24.70
A little above average	23	25.31	140	28.00	250	23.13
Much above average	6	10.90	88	17.60	93	8.60
NA	111	12.60	0	0.00	183	16.93
Education level (Israel)						
Elementary or less (<8 years)	2	0.23			19	1.76
High school without Bagrut	62	7.04			93	8.60
High school with Bagrut	148	16.80			147	13.60
Post high school program	132	14.98			185	17.11
Undergraduate degree	256	29.06			259	23.96
Graduate degree	158	17.93			168	15.54
Yeshiva	13	1.48			28	2.59
Other/NA	110	12.49			182	16.84
Education level (Gaza)						
Primary school			46	9.20		
Secondary school			196	39.20		
Vocational training			59	11.80		
University			199	39.80		

Extended Data Fig. 2 | Histogram of sensitivity to civilian casualties. Participants used a dynamic visual scale to indicate a total number of civilian casualties among the outgroup they would deem acceptable in the context of the ongoing conflict. **a,** In study 1 (*n* = 881) responses could range from the current estimate of civilian deaths as of January 2025 (28,000), indicating no more civilian deaths, to three times that number (84,000). 18.2% indicated no further civilian deaths as acceptable, 39.3% indicated various limits to their support for war, and 42.5% chose the maximum possible number as acceptable. Our binary outcome variable for full insensitivity to civilian casualties is based on this last segment of the sample. **b,** For reference, we asked a similar question format in study 3 (*n* = 1081) to allow for wider variation in response numbers from 0 (no further civilian deaths) to 200,000. In study 3, 65.96% of respondents did not answer this item.

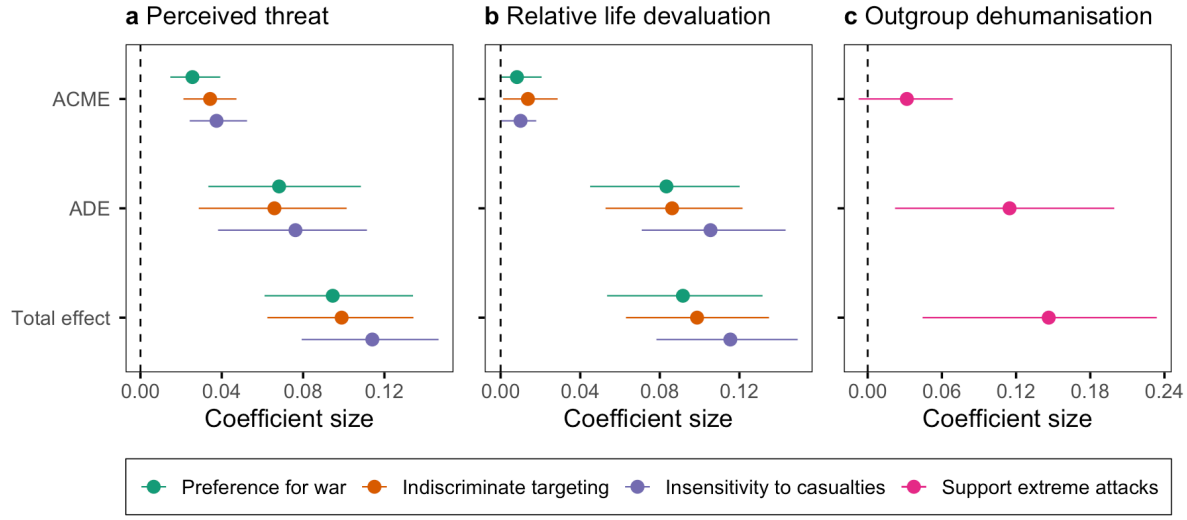




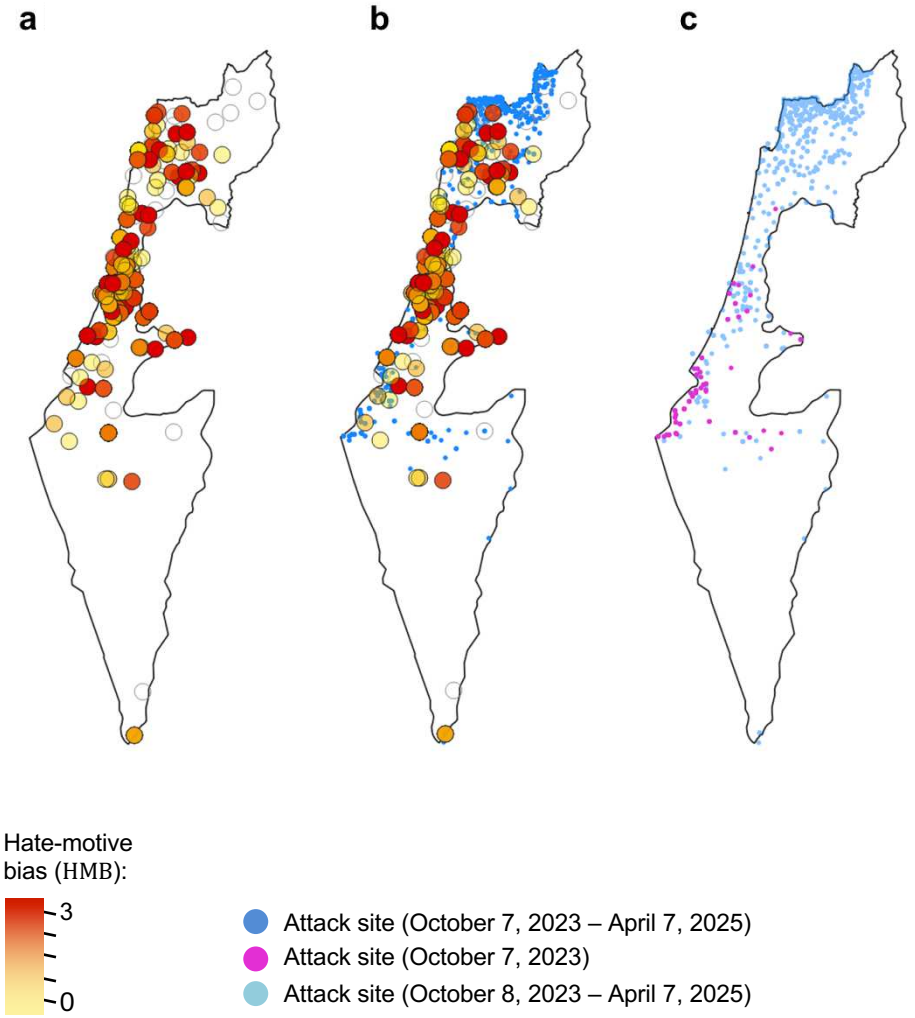
Extended Data Fig. 3 | Item descriptives for threat index. A measure of perceived outgroup threat to the ingroup was defined as a means index of four items (alpha = 0.73). Two items (**a-b**) followed a prompt ('Please answer the following as you think the average Israeli Jew would answer.') and measured general outgroup threats: 'Muslim Palestinians want to kill all Jewish Israelis'; 'Muslim Palestinians pose a threat to the security of Jewish Israelis'). The remaining two items (**c-d**) followed a prompt ('What do you think is the aim of Palestinians on October 7 and in the war since?') and measured specific outgroup threats: 'To commit genocide against us'; 'To conquer land and expel the Jews'). Responses were on a five-point Likert scale ranging from 1 ('not at all true') to 5 ('completely true'). Based on study 1 data (n=881 representative sample of Jewish Israelis collected in January 2025).



Extended Data Fig. 4 | Mediation analysis. Based on nonparametric bootstrapped analysis (1,000 simulations; logistic link), we tested for whether effects of hate-motive bias on outcomes are mediated by (**a**) perceived threat, (**b**) relative devaluation of outgroup lives, or (**c**) outgroup dehumanisation. The dots in each category represent average causal mediation effects (ACME), average direct effect (ADE), and total effect. Lines represent 95% confidence intervals. All effects are presented on probability scales such that a coefficient of +0.08 represents an eight percentage point increase in the respective binary outcome. Indirect effects (ACME) consistently account for negligible or statistically insignificant shares of the total relationships compared to the direct effect (ADE) of hate-motive bias, suggesting no meaningful mediation across outcomes.



Extended Data Fig. 5 | Geospatial exposure to conflict does not predict hate-motive bias. Based on geolocated response data in study 1 (n=881) and study 3 (n=1,081) and data from Armed Conflict Location & Event Data (ACLED) on political violence within Israel committed by Palestinian armed actors and allied actors – notably Hamas, Hezbollah, Al Aqsa Martyrs Brigade, Palestinian Islamic Jihad, and various suborganizations thereof) between October 7, 2023 and April 7, 2025 (last day of data collection). See Supplementary Information section A.4 for exact filters used. **a.** Distribution of hate-motive bias (HMB) by participant locations in Jewish Israeli samples. Darker shadings indicate stronger average levels of bias. **b.** Hate-motive bias distribution and attacks by Palestinian actors . **c.** Attacks on October 7, 2023 (pink) vs. later in the observation period (blue). Proximity to the Gaza strip or to attack sites did not correlate with hate-motive bias (see Extended Data Tables 1-3 and 5-7). Territorial borders shown are the official 1967 West Bank boundaries according to the Armistice Demarcation Line (Green Line) as per UN Geospatial Maps.



Extended Data Table 1 | Estimated effects of hate-motive bias on 'Preference for war'. Coefficients represent odds ratios based on logistical regression estimation in representative data from Jewish Israelis (N=891). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [B]Perceived threat is a mean index of threat attributed to the outgroup. [C]Devaluation of lives is a binary indicator of outgroup life devaluation in a moral dilemma task. [D]Geographical distance (in kilometre units) to the Gaza Strip or to sites of outgroup attacks since October 7, 2023. Education and religious affiliation are tested with all factor levels but jointly reported due to statistical insignificance. Standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

Logistic model specification	(I)	(II)	(III)	(IV)	(V)
Hate-motive bias (HMB) [A]	**1.453*** (0.108)**	**1.340*** (0.103)**	**1.412*** (0.106)**	**1.308*** (0.107)**	**1.241** (0.110)**
Perceived threat [B]		1.603*** (0.142)			1.265* (0.132)
Devaluation of lives [C]			1.908*** (0.317)		1.071 (0.210)
Political ideology				2.186*** (0.173)	1.964*** (0.189)
Proximity: Gaza strip [D]					1.005 (0.004)
Proximity: Attack sites [D]					1.021 (0.106)
Age					0.990 (0.006)
Gender: Female					0.336*** (0.062)
Education level (joint test)					(p=0.91)
Religious affiliation (joint test)					(p=0.60)
Income level					0.863 (0.066)
Constant	0.684*** (0.050)	0.664*** (0.051)	0.574*** (0.050)	0.015*** (0.006)	0.196* (0.138)
Observations	790	787	790	770	743
McFadden's R^2	0.025	0.056	0.039	0.142	0.199

Extended Data Table 2 | Estimated effects of hate-motive bias on 'Indiscriminate targeting of violence'. Coefficients represent odds ratios based on logistical regression estimation in representative data from Jewish Israelis (N=891). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [B]Perceived threat is a mean index of threat attributed to the outgroup. [C]Devaluation of lives is a binary indicator of outgroup life devaluation in a moral dilemma task. [D]Geographical distance (in kilometre units) to the Gaza Strip or to sites of outgroup attacks since October 7, 2023. Education and religious affiliation are tested with all factor levels but jointly reported due to statistical insignificance. Standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

Logistic model specification	(I)	(II)	(III)	(IV)	(V)
Hate-motive bias (HMB) [A]	**1.498*** (0.111)**	**1.338*** (0.105)**	**1.444*** (0.104)**	**1.315*** (0.106)**	**1.248** (0.108)**
Perceived threat [B]		1.892*** (0.167)			1.518*** (0.151)
Devaluation of lives [C]			2.633*** (0.464)		1.639** (0.323)
Political ideology				1.935*** (0.140)	1.630*** (0.144)
Proximity: Gaza strip [D]					1.003 (0.004)
Proximity: Attack sites [D]					0.972 (0.087)
Age					1.007 (0.006)
Gender: Female					1.264 (0.219)
Education level (joint test)					(p=0.90)
Religious affiliation (joint test)					(p=0.38)
Income level					1.087 (0.080)
Constant	1.113 (0.081)	1.104 (0.084)	0.873 (0.074)	0.049*** (0.017)	0.033*** (0.023)
Observations	790	787	790	770	745
McFadden's R^2	0.028	0.084	0.057	0.117	0.158

Extended Data Table 3 | Estimated effects of hate-motive bias on 'Insensitivity to casualties'. Coefficients represent odds ratios based on logistical regression estimation in representative data from Jewish Israelis (N=891). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [B]Perceived threat is a mean index of threat attributed to the outgroup. [C]Devaluation of lives is a binary indicator of outgroup life devaluation in a moral dilemma task. [D]Geographical distance (in kilometre units) to the Gaza Strip or to sites of outgroup attacks since October 7, 2023. Education and religious affiliation are tested with all factor levels but jointly reported due to statistical insignificance. Standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

Logistic model specification	(I)	(II)	(III)	(IV)	(V)
Hate-motive bias (HMB) [A]	**1.575*** (0.118)**	**1.405*** (0.111)**	**1.537*** (0.116)**	**1.437*** (0.114)**	**1.284** (0.112)**
Perceived threat [B]		2.039*** (0.197)			1.929*** (0.216)
Devaluation of lives [C]			1.694** (0.283)		1.002 (0.196)
Political ideology				1.692*** (0.120)	1.438*** (0.129)
Proximity: Gaza strip [D]					0.995 (0.004)
Proximity: Attack sites [D]					1.100 (0.113)
Age					0.978*** (0.006)
Gender: Female					0.442*** (0.079)
Education level (joint test)					(p=0.14)
Religious affiliation (joint test)					(p=0.36)
Income level					1.127 (0.085)
Constant	0.733*** (0.054)	0.692*** (0.054)	0.636*** (0.055)	0.058*** (0.021)	0.734 (0.507)
Observations	791	787	791	770	745
McFadden's R^2	0.036	0.097	0.045	0.094	0.181

Extended Data Table 4 | Estimated effects of hate-motive bias on 'Support for extreme attacks'. Coefficients represent odds ratios based on fractional response regression in representative data from Palestinians in Gaza (N=500). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [B]Dehumanisation is a difference score between the perceived level of human-ness of the ingroup and the outgroup. [C]Measured as the number of displacements experienced since October 7, 2023. Education and religious affiliation are tested with all factor levels but jointly reported. Standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

Fractional regression specification	(I)	(II)	(II)
Hate-motive bias (HMB) [A]	**1.190** (0.070)**	**1.150** (0.066)**	**1.135** (0.062)**
Outgroup dehumanisation [B]		1.012*** (0.001)	1.011*** (0.001)
Displacement experiences [C]			1.040 (0.022)
Age			1.000 (0.004)
Gender: Female			1.117 (0.110)
Education level			(p=0.00)
Religiosity (joint test)			(p=0.08)
Socio-economic status			1.059* (0.028)
Constant	1.675*** (0.086)	0.981 (0.065)	0.599* (0.143)
Observations	498	498	498
McFadden's R^2	0.005	0.052	0.062

Extended Data Table 5 | Estimated effects of hate-motive bias on 'Support for forced displacement (FPT)'. Coefficients represent standardised effects based on linear regression estimation (OLS) in representative data from Jewish Israelis (N=1,081). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [B]Geographical distance (in kilometre units) to the Gaza Strip or to sites of outgroup attacks since October 7, 2023. Education and religious affiliation are tested with all factor levels but jointly reported. Robust standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

OLS model specification	(I)	(II)	(III)
Hate-motive bias (HMB) [A]	**0.218*** (0.033)**	**0.198*** (0.033)**	**0.178*** (0.033)**
Political ideology		0.131*** (0.036)	0.076 (0.039)
Proximity: Gaza strip [B]			0.003 (0.001)
Proximity: Attack sites [B]			-0.023 (0.006)
Age			0.006 (0.002)
Gender: Female			-0.206** (0.067)
Education level (joint test)			(p=0.01)
Religious affiliation (joint test)			(p=0.00)
Income level			0.047 (0.032)
Constant	-0.00 (0.033)	-0.657*** (0.181)	-0.739** (0.273)
Observations	897	896	874
R^2	0.047	0.068	0.127

962 **Extended Data Table 6 | Estimated effects of hate-motive bias on 'FPT: Tolerate casualties'.** Coefficients
963 represent odds ratios based on logistical regression estimation in representative data from Jewish Israelis
964 (N=1,081). [A]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to
965 the outgroup. Education and religious affiliation are tested with all factor levels but jointly reported due to statistical
966 insignificance. Standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

967

Logistic model specification	(I)	(II)	(III)
Hate-motive bias (HMB) [A]	**1.582*** (0.154)**	**1.458*** (0.151)**	**1.396** (0.152)**
Political ideology		2.061*** (0.178)	1.813*** (0.187)
Proximity: Gaza strip [B]			0.998 (0.007)
Proximity: Attack sites [B]			1.069 (0.090)
Age			0.987 (0.007)
Gender: Female			0.758 (0.160)
Education level (joint test)			(p=0.21)
Religious affiliation (joint test)			(p=0.05)
Income level			1.228* (0.112)
Constant	5.036*** (0.470)	0.163*** (0.065)	0.386 (0.306)
Observations	897	896	874
McFadden's R^2	0.029	0.125	0.161)

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Extended Data Table 7 | Robustness check: Estimated effects of ingroup motive attributions. [A]Ingroup favouritism (motives) is defined as differences scores of love vs. hate motive attributions to the ingroup. [B]Hate-motive bias is defined as centred difference scores (HMB) of hate vs. love motive attributions to the outgroup. [C]Perceived threat is a mean index of threat attributed to the outgroup. [D]Devaluation of lives is a binary indicator of outgroup life devaluation in a moral dilemma task. [E]Dehumanisation is a difference score between the perceived level of human-ness of the ingroup and the outgroup. [F]Geographical distance (in kilometre units) to the Gaza Strip or to sites of outgroup attacks since October 7, 2023. [G]Relative income level for studies 1 and 3, relative socioeconomic status (SES) for study 2. Education and religious affiliation are tested with all factor levels but jointly reported due to statistical insignificance. Robust standard errors in parentheses and *** p<0.001, ** p<0.01, * p<0.05.

Dependent variable	Preference for war	Indiscr-iminate targeting	Insensi-tivity to casualties	Support extreme attacks	Forced displace-ment (FPT)	FPT: Tolerate casualties
Estimation model	Logit	Logit	Logit	Fractional	OLS	Logit
Sample	Study 1	Study 1	Study 1	Study 2	Study 3	Study 3
Ingroup favouritism (motives) [A]	1.196* (0.098)	0.916 (0.070)	1.075 (0.086)	0.808* (0.084)	0.129*** (0.030)	1.396** (0.152)
Hate-motive bias (HMB) [B]	1.209* (0.109)	1.264** (0.111)	1.271** (0.112)	1.153** (0.061)	0.157*** (0.034)	1.830*** (0.187)
Perceived threat [C]	1.248* (0.131)	1.531*** (0.152)	1.922*** (0.216)			
Devaluation of lives [D]	1.059 (0.209)	1.648* (0.325)	0.996 (0.195)			
Outgroup dehumanisation [E]				1.011*** (0.001)		
Political ideology	1.923*** (0.186)	1.654*** (0.147)	1.423*** (0.129)		0.069 (0.039)	
Proximity: Gaza strip [F]	1.006 (0.004)	1.003 (0.004)	0.995 (0.004)		0.003* (0.001)	0.998 (0.007)
Proximity: Attack sites [F]	1.029 (0.108)	0.967 (0.087)	1.105 (0.114		-0.022** (0.006)	1.069 (0.090)
Displacement experiences				1.040 (0.022)		
Age	0.989 (0.006)	1.008 (0.006)	0.977*** (0.006)	1.000 (0.004)	0.006* (0.002)	0.987 (0.007)
Gender: Female	0.347*** (0.064)	1.245 (0.216)	0.447*** (0.080)	1.131 (0.111)	-0.190** (0.067)	0.758 (0.160)
Education level (joint test)	(p=0.92)	(p=0.92)	(p=0.16)	(p=0.00)	(p=0.02)	(p=0.30)
Religious affiliation (joint test)	(p=0.60)	(p=0.33)	(p=0.40)	(p=0.06)	(p=0.00)	(p=0.06)
Income level / SES [G]	0.851* (0.066)	1.094 (0.081)	1.120 (0.085)	1.052 (0.028)	0.040 (0.032)	1.228* (0.112)
Constant	0.202* (0.142)	0.032*** (0.022)	0.751 (0.519)	0.619* (0.151)	-0.789** (0.268)	0.376 (0.306)
Observations	743	745	745	498	874	874
McFadden's R^2	0.204	0.159	0.182	0.065	0.148	0.161

Supplementary Information

A.1 Social patterns of hate-motive bias

To examine who is most likely to exhibit hate-motive bias (the tendency to attribute outgroup aggression as motivated more by hate than by defensive love), we explored a range of demographic, political, and situational predictors across both Jewish Israelis and Palestinians in Gaza. Strikingly, bias was widespread and not confined to specific subgroups. Across both populations in three representative study samples, socio-demographic characteristics including age, gender, education level, religiosity (or religious affiliation), and income were all not statistically predictive of hate-motive bias. Similarly, situational factors such as displacement experiences (among Palestinians in Gaza, measured as extensive and intensive margins) or geographical exposure to recent outgroup violence (among Jewish Israelis, measured as proximity to the Gaza Strip and separately to attack sites since October 7, 2023) had no association with hate-motive bias (see Extended Data Fig. 5 and Supplementary Information section A.4). Measures details are reported in Methods (studies 1-3). Moderate associations emerged with nationalist values, operationalised as strong identification with Palestine (Palestinians) or right-leaning political identity (Israelis), although bias was also prevalent among individuals scoring low on these traits.

Overall, these findings suggest that hate-motive bias is a broadly held cognitive attribution error, rather than one exclusive to specific social groups in the Israeli-Palestinian context. This is notwithstanding the interactive effect of ideology and other psychological mechanisms that act alongside and in interaction with the effects of hate-motive bias, as discussed in the main manuscript.

A.2 Characteristics of the political ideological spectrum in Israel

To contextualize and supplement our analysis of the role of ideology in explaining support for violence against civilians, we examined the social and psychological profiles of individuals identifying with different parts of the political spectrum in Israel, starting with those on the political right.

This population segment had higher baseline support for violence against civilians and experienced stronger additional effects of hate-motive bias, although the bias also applied to individuals in the political centre and on the left (see main manuscript and Extended Data Figs. 1-7). Right-leaning political ideology was moderately associated with being male and more religious, particularly among more strongly religious communities (it should be noted, however, that some Orthodox groups report actively opposing the political right). Compared to individuals on the left or in the political centre, those on the right expressed stronger identification with their Jewish Israeli identity and a slightly stronger attachment to their political beliefs. They also reported lower desire for (positive) interpersonal contact with Palestinians, and were more likely to view the conflict in religious rather than political terms.

Right-leaning individuals were also more likely to endorse expansive war objectives. While the largest group among Jewish Israelis overall (44.5%) cited the release of all hostages as the primary goal, those on the political right more often prioritised the toppling of Hamas and dismantling its governance in Gaza. They were also more likely to define multiple war aims, indicating a broader conception of Israel's role and mission in the ongoing conflict.

Individuals reporting left-leaning political views or those in the centre showed higher levels of participation in the protest movement against the Netanyahu-led government, both in terms of likelihood of attending and frequency of participation. However, there were no differences in recent military service (i.e. serving in the IDF since October 7, 2023) or in geographical proximity to the Gaza Strip or to recent attack sites (Extended Data Fig. 5 and Supplementary Information section A.4). Ideology was also not statistically related to income, education level, or age.

A.3 Materials

This section provides additional details on study materials used in the reported studies, as referenced in Methods. Respective texts were administered in Hebrew (studies 1 and 3) or Arabic language (study 2).

Outgroup live valuation:

In the following pages you will be randomly assigned to read a story and give a judgment. Your answers are entirely anonymous. Please do your best, your answers are important to us. Please read carefully and think deeply about your response.

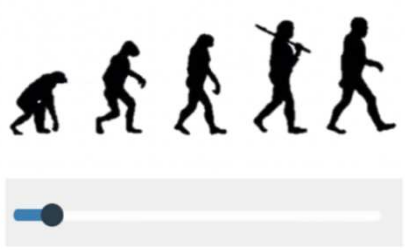
[Valuation – ingroup (order randomised)]
Now imagine that a man named Roi is walking somewhere and sees a burning house. A child tells him that there are five Jewish Israeli teenagers, who Roi does not know, trapped inside the burning house. He can save the five Jewish Israeli teenagers but he will almost surely die. What do you think Roi should do?

- He should go into the burning building to save the teenagers.
- He should not go into the burning building.

[Valuation – outgroup (order randomised)]
Now, imagine that a man named Roi is walking somewhere else and sees a burning house. A child tells him that there are five Muslim Palestinian teenagers, who Roi does not know, trapped inside the burning house. He can save the five Muslim Palestinian teenagers but he will almost surely die. What do you think Roi should do?

- He should go into the burning building to save the teenagers.
- He should not go into the burning building.

[Humanisation – outgroup (order randomised)]
Please, move the slider to the position that best represents the level of human evolution that the people of Israel have reached:



Socioeconomic status:

Please, imagine that the ladder that appears below represents the different social status that people have in your country. At the top of the ladder, we could find the groups with more money, with higher educational level and the most prestigious jobs. At the bottom of the ladder, we could find the groups with less money, with lower educational level and non-prestigious jobs or unemployed.
Please, select the position in the ladder (from 1 to 10) in which you think you are.

Conflict framing:

[Framing – self (order randomised)]
Do you believe the Palestinian-Israel conflict to be primarily religious or primarily political? Move the slider below to the position that you believe the scale would tip.

האם אתה מאמין שהסכסוך הפלסטיני–ישראל הוא בעיקרו דתי או בעיקרו פוליטי? הזז את הסמן למטה למיקום שבו לדעתך המשקל נוטה.

[Framing – ingroup (order randomised)]
What do you think most Israelis believe? Do they believe the Palestinian-Israel conflict to be primarily religious or primarily political?

במה לדעתך רוב הישראלים מאמינים? האם הם מאמינים שהסכסוך הפלסטיני–ישראל הוא בעיקרו דתי או בעיקרו פוליטי?

[Framing – outgroup (order randomised)]
What do you think most Palestinians believe? Do they believe the Palestinian-Israel conflict to be primarily religious or primarily political?

במה אתה חושב שרוב הפלסטינים מאמינים? האם הם מאמינים שהסכסוך הפלסטיני-ישראל הוא בעיקרו דתי או בעיקרו פוליטי?

A.4 Spatial analysis

We grouped observations from our study 1 and study 2 samples (total n=1,962) by Internet Service Provider (ISP) location based on a public ISP localisation database with 80% accuracy in Israel. Compared to most countries, the small geographical size and highly developed internet infrastructure allows for sufficient accuracy of ISP locations. The figure below exemplifies how we coded geographical conflict exposure in the case of attack sites. We retrieved comprehensive data on political violence incidents inside Israeli territory from the Armed Conflict Location & Event Data Project (ACLED). The data was filtered to only include events between October 7, 2023 and April 7, 2025 and relevant incident types (Remote explosive/landmine/IED, armed clashes, shelling/artillery/missile attacks, grenade attacks, air/drone strikes, suicide bombings, abduction/forced disappearances, and overtaking of territory), and only those events clearly linked to Palestinian actors and allied actors (notably Hezbollah, Hamas, Al Aqsa Martyrs Brigade, Palestinian Islamic Jihad, and various suborganisations and splinter groups). The total event count in this time frame was 9,710 attacks of various sizes and impact, of which 111 (which caused some of the highest impact) on October 7, 2023. We used QGIS geographical information software to compute distances in units of kilometres (nearest neighbour analysis / line to hub), represented by straight lines below. We repeated the same process to compute distances to the Gaza Strip using the border polygon based on the Database of Global Administrative Areas (GADM).

Supplementary Fig. 1 | Geospatial coding of exposure to outgroup attacks.