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Social Psychology

Popular Support for the No-Concessions Policy in Terrorist Hostage Takings

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Governmental responses to the frequently occurring terrorist hostage-takings, in which authorities must weigh the lives of the hostages against the lives of potential future victims, depend on popular support for governmental policy. Yet, little is known about how people form their judgement of governmental policies in this moral dilemma. We argue that people typically have imperfect information and their policy support for concessions can be substantially altered by changing the information they possess about different consequences. Across three studies (overall N = 1,547) employing both qualitative and quantitative methods, we found that (a) support for concessions is negatively linked to age and political conservatism, (b) most people either focus only on one aspect or have an imperfect representation of this moral dilemma when thinking about their support for concessions, (c) providing information on the benefits of concessions increases support for concessions, and (d) support for concessions increases when the benefits outweigh the costs and when a salient moral norm prescribes concessions. The potential implications for policymakers are discussed.

Most Americans consider terrorism a major threat (Poushter & Fagan, 2020) and debates about acceptable ways to deal with this threat divide the nation (Gramlich, 2018; Tyson, 2017). Should governments concede to terrorist hostage-takers (Borger et al., 2014), who abduct thousands of people every year and threaten to kill them unless authorities meet their demands (Miller, 2020)? Conceding to terrorists' demands increases the likelihood of a safe hostage release and reduces casualties in hostage-taking situations (Mertes et al., 2020, 2021), but increases the likelihood of future abductions (Brandt et al., 2016). Thus, terrorist hostage-takings pose a moral dilemma, in which governments must weigh the lives of the hostages currently under threat against the lives of people who might be endangered in the future (e.g., Scheuer, 1990).

Beliefs on how to respond to this dilemma seem strong and persistent. The U.S., like many countries (e.g., Borger et al., 2014), have a long-standing policy to deny terrorists concessions (The White House, 2015). Given adherence, this *no-concessions policy* (hereafter NCP) is an effective means of reducing terrorist hostage takings (Brandt et al., 2016). Yet even the most ardent proponents of the NCP violate it from time to time (e.g., Callimachi, 2014a). When governments do violate their official NCP, public opinion may be a critical decision factor (Burstein, 2003), as democratic governments disregarding public opinion risk losing voter support (cf. McNair, 2017). The members of a society are collectively and indirectly responsible for the decisions their elected government officials make, including the decision to grant or not to grant concessions (to terrorist hostage takers). There are even cases where the pronounced and public support for concessions by various (influential) societal members may have directly impacted such decisions (e.g., the recent prisoner exchange between the US and Russia to free Brittney Griner; Shear & Baker, 2022). The NCP is a policy for life-and-death situations. If the enforcement of such a policy depends on public support, it is critical to understand how popular support emerges and what shapes popular support. It is therefore our goal in the current research to investigate popular support for the NCP as a guideline to handle terrorist hostage-takings. Despite the important potential implications for policymaking, previous research has so far ignored the question of how people judge their government's responses to terrorist hostage-takings.

We address this research gap in three studies. We investigate the level of support for the NCP, the reasons why as well as the conditions under which people support the policy. Before we delineate our studies, we want to contextualize the NCP and describe the unique features of terror-

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ist hostage-takings in comparison to the Trolley problem as probably the most prominent moral dilemma.

The No-Concessions Policy

The NCP refers to the general policy of denying terrorists the benefits of concessions (e.g., Jenkins, 2018). As the Obama administration reaffirmed in a presidential policy directive, "[…] the United States Government will make no concessions to individuals or groups holding U.S. nationals hostage. It is United States policy to deny hostage-takers the benefits of ransom, prisoner releases, policy changes, or other acts of concession" (The White House, 2015). Concessions to terrorist hostage takers encourage more hostage takings in the future (Brandt et al., 2016). This means that adopting and adhering to the NCP, although it fails to completely eliminate hostage takings as theory would suggest (e.g. Jenkins, 2018), represents an effective means of reducing the frequency of hostage takings (Brandt et al., 2016).

Although the recent decades have seen increased efforts to spread the NCP in an attempt to contain global terrorist hostage-taking, the number of states that adopted the NCP is difficult to determine, but it is at least officially widely adopted. For instance, in 2013, the G8 countries (i.e., France, Germany, Italy, the U.K., Japan, the U.S., Canada, and Russia) committed (or reaffirmed their commitment) not to pay ransoms to terrorist groups (Borger et al., 2014; The White House, 2013). Moreover, there have been several UN resolutions with the goal to stop concessions to terrorist hostage-takers (UN General Assembly Resolution 579, 1985; UN General Assembly Resolution 638, 1989; *UN General Assembly Resolution 1904*, 2009; UN General Assembly Resolution 2133, 2014). These resolutions should, in principle, affect the policies of 193 states—some of which are themselves known state sponsors of terrorism (e.g., Bureau of Counterterrorism, 2021).

It is even more difficult to determine how many of its official adopters actually adhere to the NCP since officially professing to adopting the NCP does not stop countries from paying ransoms or making other kinds of concessions to terrorist hostage-takers (Human Rights Council Advisory Committee of the United Nations, 2013). For instance, shortly after their G8 commitment, Germany (*Philippine Militants Release Two German Hostages*, 2014), France (Callimachi, 2014a), and Italy (Al Jazeera Investigative Unit, 2015) paid millions in ransoms. As another example, in 2014, the U.S. government agreed to release five imprisoned Taliban fighters to ensure the release of Sgt. Bowe Bergdahl (Knowlton, 2014).

When governments do violate their official NCP, public opinion may be a decisive factor. There is a well-established and substantial link between public opinion and public policy (for an overview, see Burstein, 2003). The support for this general link comes from various sources: studies comparing public polls with later policymaking (Monroe, 1998), interviews with politicians (see Walgrave et al., 2022), citizen resistance and ensuing changes in planned legislation (Park & Ham, 2022), and survey experiments with politicians as participants (e.g., Sevenans, 2021). When an issue is salient, the impact of public opinion is further enhanced (Burstein, 2003). Terrorist hostage-takings are salient, especially when they receive news coverage over extended periods of time (e.g., Gaibulloev & Sandler, 2009). Moreover, public opinion affects non-elected (military) officials' willingness to recommend the use of force in conflicts (e.g., Lin-Greenberg, 2021).

The case of Sgt. Bowe Bergdahl we mentioned above (Knowlton, 2014) serves as an example of this link. Bergdahl was a highly salient hostage. He had been in captivity for five years, labeled "America's last prisoner of war" by the press (Hastings, 2012). Foreign media suspected that President Obama used the Bergdahl exchange to limit the damages of a scandal involving the deaths of veterans due to negligent treatment in an Arizona Veterans Health Administrations facility (Ross, 2014; Zezima, 2014). Most Democrats agreed that the Bergdahl exchange was the right thing to do and that the United States are responsible for securing the release of captives, no matter the circumstances (Pew Research Center, 2014).

As we mentioned before, terrorist hostage-takings pose a moral dilemma for authorities. We argue that citizens, deciding whether they support or oppose their government's decision in a terrorist hostage-situation, face a parallel moral dilemma, but under different circumstances, which we will describe below. Thus, in the following, we classify terrorist hostage-takings as moral dilemmas and explain the differences from typical dilemmas used in research on moral judgments.

Terrorist Hostage-Takings as a Moral Dilemma

Terrorist hostage-taking dilemmas differ from many other moral dilemmas typically used in research in three important ways. We want to illustrate these differences by comparing the terrorist hostage dilemma to the Trolley problem (Foot, 1967). We believe that this comparison serves the understanding of terrorist hostage takings as moral dilemmas because the Trolley problem is the most well-known and best-researched moral dilemma (Gawronski & Ng, 2024). It is so prominent that research employing it and other structurally similar moral dilemmas is being referred to as *trolleyology* (Greene, 2023). It exists in various forms, but in its original and most common description, a runaway trolley on a railway track is on collision course with five people who, if hit, are certain to die in the crash. Whoever is presented with this moral dilemma takes the role of an observer witnessing this catastrophe in the making. They see that there is another track, on which there is only one person. The observer stands next to the lever that controls the switch. If they pull the lever, the trolley will be redirected to the other track, where it will kill only the one person instead of five. This means that pulling the lever will reduce the number of casualties from five to one, but it will make the observer directly responsible for the death of the victim. Would it be acceptable to pull the lever and redirect the trolley? By asking this question, the Trolley problem and its structural equivalents "pit moral norms against consequences for the greater good" (Gawronski & Ng, 2024, p. 2).

We use this description as a basis to highlight the three central differences between the terrorist hostage dilemma and trolleyology dilemmas. First, artificial moral dilemmas such as the Trolley problem have been criticized for a lack of experimental, psychological, and mundane realism (Bauman et al., 2014): Participants often consider them abstract thought experiments rather than situations that they could actually find themselves in, often to a point where they elicit humorous reactions. This reduces the external validity in studies employing such dilemmas. In contrast, terrorist hostage-takings represent frequently occurring real-world moral dilemmas with great societal relevance (e.g., Callimachi, 2014a).

Second, in artificial moral dilemmas such as the Trolley dilemma, people are typically fully informed about all outcomes of the decision they are presented with. In the Trolley problem, pulling the lever results in one rather than five deaths. In contrast, when people become aware of an ongoing hostage situation through the media, the dilemma is usually not described in full detail. This may be due to a factual lack of knowledge on the part of the reporting media. Only recently have scholarly efforts led to a more comprehensive understanding of the consequences of the decision to concede to terrorist hostage-takers (e.g., Brandt et al., 2016; Mertes et al., 2020, 2021). Given that not every scientific insight permeates the general public, and that it typically takes a considerable amount of time to do so, we assume that most people's understanding of the terrorist hostage dilemma is imperfect. It is thus likely that people try to augment their understanding of the dilemma by resorting to other sources of information, such as widespread assumptions about terrorist behavior. Based on the availability and validity of information, this may result in a biased representation of the objective situation and to related inter-individual differences. For example, it is a common misconception that terrorists are generally afflicted by mental illnesses and thus unable to act rationally (e.g., Silke, 1998; see also Noor et al., 2019). A person whose representation of the terrorist hostage dilemma is informed by this misconception might be more likely to reject the notion of conceding or engaging in diplomacy (Pronin et al., 2006). It is also possible that certain information exists but is misrepresented to or even hidden from the public (e.g., Callimachi, 2014a; Sanger, 2016). For example, political figures have often defended the NCP saying that denying concessions deters future hostage-takings (e.g., *Obama on Payments to Iran*, 2016), although adoption of the NCP does not eliminate hostage takings entirely (e.g., Brandt et al., 2016; Jenkins, 2018).

Third, in most artificial moral dilemmas, the consequences are certain. In the Trolley problem, the deaths of the people bound to be hit by the trolley are unavoidable. Terrorist hostage-taking dilemmas, in contrast, have uncertain outcomes. While conceding increases the likelihood of a safe hostage release (Mertes et al., 2020, 2021), it is a common concern that terrorists might not keep their promises (e.g., Bapat, 2006). Likewise, there are cases in which authorities deny concessions and the terrorists still decide to let the hostages go (Mertes et al., 2020). Moreover, while concessions increase the likelihood of future attacks, these attacks may never happen and consistent denial of concessions does not eliminate terrorist hostage-takings entirely (e.g., Brandt et al., 2016). These uncertainties may give rise to several psychological effects on individual perceptions and judgements of governmental policies, such as hindsight bias (e.g., Christensen-Szalanski & Willham, 1991) and loss aversion (Tversky & Kahneman, 1991). Depending on which information is available to them, people might perceive the consequences of concessions to terrorist hostage-takers as more or less certain. This, in turn, might affect their NCP support: The lower they perceive the likelihood of a safe hostage release and the higher they perceive the likelihood of an increase in abductions in the future, the more they should support the notion that authorities should never concede to terrorist hostage-takers.

In sum, terrorist hostage dilemmas differ from the Trolley problem and its structural equivalents. First, they are more realistic. Second, individuals often lack a comprehensive understanding of the terrorist hostage dilemma as it is typically not fully unfolded. Third, the anticipated consequences of the decision required by the terrorist hostage dilemma are uncertain. Understanding people's support for the NCP has great relevance, but is unlikely to be informed from *trolleyology* studies, which constitute the bulk of moral dilemma research (e.g., Gawronski & Ng, 2024). Thus, pertinent empirical research is desirable.

Overview of the Current Research

Terrorist hostage takings represent a global issue. Many countries have officially adopted the NCP to contain terrorist hostage situations, yet they frequently violate this policy (e.g., Borger et al., 2014; Callimachi, 2014a). Public support for the NCP likely plays a crucial role in this decision. Despite potential implications for policymaking, previous research has not examined which factors influence public support for the NCP. In three studies, we thus aimed to answer the following questions: To what extent, why, and under which circumstances do people support the NCP?

In Study 1, we surveyed U.S. Americans to gain an overview of the extent to which they support the NCP and whether they are aware that it is the official policy of their government for dealing with terrorist hostage situations. Additionally, we investigated the reasons they provide for their NCP support. In Study 2, we investigated to what extent people understand the consequences of the decision to make concessions in a terrorist hostage taking and whether their support for the NCP can be altered by manipulating the information regarding the benefits and costs of concessions available to them. In Study 3, we drew from recent moral dilemma research (e.g., Gawronski et al., 2017; Gawronski & Beer, 2017) to investigate which moral principles drive moral judgments and, consequently, support for the NCP when people are fully informed about the terrorist hostage dilemma. This study enables us to identify characteristics of terrorist hostage situations that lead to higher or lower support for the NCP.

In sum, our research contributes to a better understanding of (i) the extent to which people support the NCP, (ii) the reasons underlying their support, (iii) whether their support for the NCP is based on a comprehensive understanding of the terrorist hostage dilemma, (iv) whether providing information on the benefits and costs of concessions can alter their NCP support, and (v) which moral principles guide their support for the NCP. Finally, our work provides insights into (vi) the link between demographic variables (e.g., age, political ideology) and support for the NCP.

In the following sections, we will describe our three studies. In each study, we will present the relevant theoretical models and derive from them the specific hypotheses and research questions that we will test and investigate. In each study, we briefly discuss the findings before we consolidate the results in the general discussion.

Study 1

In this first exploratory and qualitative survey, we wanted to obtain an overview of whether Americans are aware of what their government's policy on concessions to terrorist hostage-takers is and to what extent they support it. We further aimed to learn what motivates their NCP support.

Method

Sample

We collected data from N = 301 U.S. American Prolific users (43.85% female, 1.33% other; M_{age} = 35.09, SD_{age} = 11.33) who were potential voters. We chose this sample size to ensure stable correlations (Schönbrodt & Perugini, 2013). They received $1 as remuneration. A bootstrapped one-sample t-test[1] of political ideology (see the Measures section below) against the midpoint of the scale (4) revealed a tendency towards liberalism (M = 3.17, SD = 1.69), t(300) = -8.55, p < .001, d = -0.49, 95% CI = [-1.02; -0.63].

Procedure

After participants provided informed consent, we told them that we were interested in their opinion on terrorist hostage-takings. As we wanted to know what people think based on their presumably imperfect understanding of hostage dilemmas, we only outlined the basic premise of hostage-takings: "In hostage-takings, terrorists abduct people and threaten to kill them unless the authorities concede to their demands." Participants then filled out a short questionnaire (see below). Study completion took on average five minutes.

Measures

We measured support for the NCP using one item ("The government should never concede to terrorist demands."). Participants indicated their support for the NCP on a 7-point Likert scale (1 = *fully disagree*, 7 = *fully agree*). We used this item to address the lack of realism that trolleyology dilemmas have been criticized for in the past (Bauman et al., 2014). People are unlikely to come into a situation, in which they must make the decision to pay or deny ransom to terrorist hostage-takers (i.e., the government's decision, which they would never have to make). Instead, we ask them to what extent they support the NCP (Studies 1, 2, and 3), how appropriate they would deem ransom payments, and whether they would act with the intent to sway the government to make concessions in a petition (both Study 3). These decisions are in line with decisions that citizens might have to make after learning about an ongoing terrorist hostage-taking.

We assessed participants' knowledge of what the U.S. government's standing policy on concessions to terrorists is using one item ("Please indicate what you think the government's policy on dealing with terrorist hostage-takers is: The government's policy is to never concede to terrorists"). We asked participants to rate their agreement with the statement on a 7-point Likert scale (1 = *fully disagree*, 7 = *fully agree*).

We asked participants to explain which information they factored into their decision when they rated to what extent they agree with the NCP in free text.

We assessed the participant's political ideology using one item by Motta et al. (2018): "When it comes to politics, how do you usually think of yourself?". Participants answered on a 7-point Likert scale (1 = *extremely liberal*; 7 = *extremely conservative*).

Finally, we asked participants to indicate their age (in years) as well as their gender (female, male, or other).

Results and Discussion

Table 1 shows descriptive statistics and intercorrelations for all variables of this study. A bootstrapped one-sample t-test against the maximum of the scale (7)—indicating that the U.S. follow the NCP—revealed that participants had an imperfect understanding of their government's policy regarding terrorist hostage-takings (M = 5.41, SD = 1.49), t(300) = -18.51, p < .001, d = -1.07, 95% CI = [-1,75; -1.41]. Overall, participants supported the NCP (M = 4.96, SD = 1.62), which is indicated by the significant deviation from the scale midpoint, t(300) = 10.31, p < .001, d = 0.59, 95% CI = [0.78; 1.14]. Older (r = .15, p < .01) and more conservative (r = .22, p < .001) participants indicated higher NCP support.

1 Throughout the manuscript, we used bootstrapping procedures when the normality assumption of t-tests was violated. All bootstrapping procedures were conducted with 1,000 bootstrap samples. In Studies 2 and 3, this is a deviation from the preregistrations.

Table 1. Descriptive Statistics and Intercorrelations for All Variables in Study 1

			Intercorrelations			
	Variable	*M (SD)*	1	2	3	4
1	NPC support	4.96 (1.62)	-			
2	Policy knowledge	5.41 (1.49)	.47***	-		
3	Political ideology	3.17 (1.69)	.22***	.06	-	
4	Age	35.09 (11.33)	.15**	.10	.11	-

Note. $N = 301$, *** $p < .001$, ** $p < .01$

Qualitative Analysis

The open answers to the question of why people support the NCP were segmented into separate statements and analyzed. Statements were coded using terms that best described their content (cf. Glaser & Strauss, 1967). Each distinct reason to support or oppose the NCP became a new category. We compared new statements with existing categories and created new categories when new information did not fit in with previously established categories. These steps were initially undertaken by a single coder and later checked by the first author. Conflicts were resolved through discussion. We also computed the frequencies with which the categories were mentioned to "gain a sense of how representative and widespread particular instances are" (Seale, 1999, p. 128).

This approach yielded ten different categories, each representing a different motivation to support or oppose the NCP (for an overview, see Table 2). Seven categories oppose the idea of making concessions: *deterrence*, *political appearance*, *distrust*, *orientation towards official policy*, *injustice*, *legitimacy*, and *principle*. One hundred thirty-nine participants made such contra-concessions statements (47.3%). Many participants expressed worries or expectations that concessions might lead to more abductions in the future and stated that concessions should be withheld to deter these abductions (*deterrence*). Participants also expressed blatant distrust, stating that terrorists cannot be trusted to keep their promises once concessions are made (*distrust*). Some participants stated that concessions to terrorist hostage-takers should not be made because they would make the government appear weak to their enemies and other political entities (*political appearance*) or that they would legitimize the terrorists and their actions (*legitimacy*). Others emphasized the moral reasons for withholding concessions, stating that it would be unjust to reward terrorists for hurting people (*injustice*). All of these reasons are common and legitimate concerns that people have when discussing concessions to terrorist hostage takers (e.g., Bapat, 2006; Brandt et al., 2016; Toros, 2008).

The other two categories of statements opposing concessions were also interesting because the statements made were less concerned with the outcomes of concessions to terrorist hostage-takers. Rather, they appeared to reflect circular reasoning. Some participants stated that concessions should not be made because it is the government's official policy to not concede to terrorists (*orientation towards official policy*). Others stated that the government should not concede to terrorists on principle or because it is taboo without discussing the potential ramifications of concessions (*principle*).

Two categories of statements supported the option to concede to terrorist hostage-takers: *saving lives* and *empathy*. Such pro-concessions statements occurred far less frequently than contra-concessions statements (only 29 participants, 9.9%). Participants prioritized the lives of the hostages, stating that the government should do what is necessary to save them (*saving lives*). Others stated that their decision was driven by empathy, saying that they either imagined how they would feel if their loved ones were held captive or what they would want the government to do if they were ever taken hostage (*empathy*). The distribution of contra-concession and pro-concession statements suggests that people are either more aware of the potential costs of making concessions or that they are more concerned with these costs than with the benefits. The overall one-sidedness of the majority of statements indicates that people mainly focus on only one or a few, but not all potential consequences of concessions to terrorists. It, thus, appears as if most people have an imperfect representation of the terrorist hostage dilemma.

The final category contained statements saying that there should be no hard stance on concessions and that the government should rather weigh the benefits and costs on a case-by-case basis (*consideration*). This was the largest category with the most statements (126 participants, 42.9%). Only statements from this category acknowledged both the positive and negative consequences of concessions to terrorist hostage-takers.

Exploratory Analyses

We wanted to explore links between the degree of popular support for the NCP and the aspects of the terrorist hostage dilemma people focus on. Thus, we recoded the data into three groups for quantitative analysis on a more abstract level: participants only making statements opposing concessions ($n = 115$), only making statements supporting concessions ($n = 24$), and participants with a balanced view who made consideration statements or a mix of pro- and contra-concession statements ($n = 129$). We compared NCP support between these groups with a Kruskal-Wallis test, showing a significant main effect, $H(2) = 112.09$, $p < .001$, partial $\eta^2 = 0.42$. Participants opposing concessions ($M = 6.12$, $SD = 0.95$) supported the NCP more than participants who supported concessions ($M = 3.67$, $SD = 1.83$), $z =$

Table 2. Categories Derived from the Qualitative Analysis of Free-Text Answers

Category	Description	Exemplary Quote	Frequency
Deterrence	Statements saying that the government should not concede to terrorist demands because concessions could lead to more attacks or demands in the future.	"If the government concede to terrorist demands then this type of thing will occur again in near future."	94 (32 %)
Saving lives	Statements saying that the government should concede to terrorist demands to save the hostages.	"I believe if a person's life is on the line then the government should do what's best to save lives."	25 (8.5%)
Consideration	Statements saying that the government should decide on a case-by-case basis. These statements acknowledge the existence of positive and negative consequences of concessions and contain wording indicating that these consequences should be weighed against each other.	"That (conceding) will simply lead to more demands in future terrorist hostage takings. At the same time the government should do what it can to protect the lives of hostages and at times that means negotiation to a point where the government concedes […]"	126 (42.9%)
Political appearance	Statements saying that the government should not concede because it would appear weak.	"Conceding to terrorist demands undermines our government and makes us appear weaker to enemies, terrorists and foreign countries alike."	13 (4.4%)
Distrust	Statements saying that the government should not concede because terrorists cannot be trusted.	"[...] in general, terrorists can't be trusted to keep their word, so meeting their demands serves little purpose."	8 (2.7%)
Orientation towards official policy	Statements saying that the person's opinion on the matter is based on the government's official policy.	"I guess I always have read in news reports that the government never negotiates with terrorists."	3 (1.0%)
Empathy	Statements saying that the person thought about the suffering of the hostages and their families. Also contains statements saying that the person considered what they would want the government to do if they or their family were taken hostage.	"I considered how the families of the victims must feel when the government doesn't concede and their loved one gets killed."	4 (1.4%)
Injustice	Statements saying that the government should not concede to terrorist demands because it would be unjust to reward terrorists for bad or morally reprehensible behavior.	"I do not want terrorists to think they can achieve their goals by hurting people. They should not be rewarded for their bad actions."	6 (2.0%)
Legitimacy	Statements saying that the government should not concede to terrorist demands because conceding would ascribe legitimacy to the terrorists, their cause, and their means.	"By conceding to terrorist demands they would be legitimating what they do […]"	3 (1.0%)
Principle	Statements saying that the government should not concede to terrorist demands on principle. This category was only coded when no other explanation was provided.	"[…] it is a taboo for government to concede to the demands of terrorists."	12 (4.1%)

Note. Frequencies report how many participants made statements from the category in question. A total of 334 statements were made. 40 of these statements were inapplicable because no useful category could be formed. Percentages were calculated based on the remaining 294 cases.

6.43, $p < .001$, $r = .39$, and participants with a balanced view ($M = 4.14$, $SD = 1.42$), $z = 9.96$, $p < .001$, $r = .61$. NCP support did not differ between the latter two groups. While these findings are quite intuitive, they emphasize that NCP support is linked to the aspects of the hostage dilemma (i.e., benefits, costs, or both) people focus on.

Study 2

Study 1 provided supporting evidence for our assumption that (many) people may have an imperfect (i.e., incomplete or otherwise flawed) understanding of the terrorist hostage dilemma. In Study 2, we further looked into this assumption by conducting an experiment, in which we provided participants with varying information before they indicated their support. Specifically, we manipulated the availability of information on the *benefits of concessions* in the form of an increased likelihood of a safe hostage release (hereafter shortened to *benefits*) and *costs of concessions* in the form of an increased likelihood of more abductions in the future (hereafter simplified to *costs*) separately. Making a moral decision requires people to weigh the benefits and costs of that decision against each other. If people fully understand the consequences of concessions in terrorist hostage situations, then the one-sided provision of information about the benefits or costs of concessions should not affect their NCP support because they already have that information. If, however, people have an incomplete or otherwise flawed understanding of the consequences, then one-sided information on the benefits or costs might be able to alter their NCP support.[2]

Theory and Preregistered Hypotheses

We derived our hypotheses from the heuristic-systematic model of information processing (Chaiken & Ledgerwood, 2012; Chen & Chaiken, 1999). The heuristic-systematic model proposes that there are two stylized ways of processing information: *heuristic* and *systematic* processing. Heuristic processing focuses on salient cues and learned judgmental rules, while the more effortful systematic processing entails attempts to thoroughly understand and process available information. Heuristic processing guides judgement when people lack motivation or ability to systematically process information.

Given that most people consider terrorism a major threat (Poushter & Fagan, 2020), we assume that motivation to process information on the matter is high. However, when people have only limited information about the potential consequences of concessions, their ability should be low and their judgement should be guided by heuristic information, such as stereotypes about terrorist behavior, values, norms, and consensus information (e.g., Lau & Redlawsk, 2001; Silke, 1998). As a result, NCP support should be high. Providing people with information should increase their knowledge and, thus, their ability, resulting in a higher likelihood of systematic processing. The systematic processing of information on the benefits should lead to more favorable views on concessions. The systematic processing of information on the costs, in turn, should lead to less favorable views. In accordance with these arguments, we derived the following hypotheses:

> *Hypothesis 1:* People who are given only information on the benefits should support the NCP less than people who receive no information.
> *Hypothesis 2:* People who are only given information on the costs should support the NCP more than people who receive no information.

Method

Design

Our experiment used a 2 (information on benefits: given vs. not given) × 2 (information on costs: given vs. not given) between-subjects design. Thus, participants were randomly assigned to one of the following four conditions: no information, just benefits, just costs, and full information.

Sample

An a priori power analysis ($\alpha = .05$, $1\text{-}\beta = .80$, number of groups = 4, numerator $df = 1$) conducted with G*Power 3.1.9.4. (Faul et al., 2007) showed that detecting a small to medium-sized effect ($f = .15$) in an ANOVA requires a sample of $N = 351$. Our final sample consisted of $N = 417$ American Prolific users, who received $1 as remuneration (45.56% female, 0.48% other; $M_{age} = 34.05$, $SD_{age} = 11.44$). None of them had participated in Study 1. Using the same question as in Study 1, a one sample t-test against the scale-midpoint showed that participants leaned, again, towards liberalism ($M = 3.16$, $SD = 1.65$), $t(416) = -10.38$, $p < .001$, $d = -0.51$, 95% CI = [-0.98; -0.70]. Age, gender distribution, and political ideology did not differ across conditions.

Procedure

After participants gave informed consent, they read a paragraph with general information. In the control condition ($n = 112$), participants received no additional information. Depending on the experimental condition, participants received another paragraph containing additional information, saying that concessions increased the likelihood of a safe hostage release (i.e., benefits; $n = 103$), that concessions increase the likelihood of future abductions (i.e., costs; $n = 101$), or both ($n = 101$; for the exact wording see Table 3). We developed these manipulations based on findings from recent pertinent research (Brandt et al.,

2 This study was preregistered. The preregistration can be accessed at https://osf.io/ubqvz/?view_only=ca8829c698fb449c8c4cda37a321501b.

Table 3. Manipulations Used in Study 2

General paragraph		
In hostage-takings, terrorists abduct people and threaten to kill them unless the authorities concede to their demands. Many countries, including the United States of America, have a no-concessions policy. This means that they deny hostage-takers the benefits of ransom, prisoner releases, policy changes, or other acts of concession.		
	Additional paragraph	
	Information on benefits: not given	Information on benefits: given
Information on costs: not given	*no additional paragraph presented* (n = 112)	Recent studies have shown that conceding to the demands of terrorist hostage-takers increases the likelihood that the hostages are released safely. This means that concessions can reduce casualties in the hostage situation at hand. (n = 103)
Information on costs: given	Recent studies have shown that conceding to the demands of terrorist hostage-takers creates an incentive for abductions. This means that concessions increase the likelihood of more hostage-takings in the future. (n = 101)	Recent studies showed that conceding to the demands of terrorist hostage-takers increases the likelihood that the hostages are released safely, but creates an incentive for abductions. This means that concessions can reduce casualties in the hostage situation at hand, but increase the likelihood of more hostage-takings in the future. (n = 101)

2016; Mertes et al., 2020, 2021). Participants then filled out a questionnaire (see the Measures section below). Study completion took on average about five minutes.

Measures

We measured NCP support using the same item as in Study 1. We used one item each to measure the participants' consideration for the norm ("When I answered the question of how the government should act, I thought primarily about the fact that it is the norm not to concede to terrorists."), the potential benefits of concessions to terrorists ("…, I thought primarily about the benefits that concessions to terrorists could have."), and the potential costs of concessions to terrorists ("…, I thought primarily about the damages that concessions to terrorists can cause."). Participants were asked to indicate their agreement to each statement on a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*).

We measured the perceived credibility of the information provided in the manipulations using one item ("I found the general information on terrorist hostage-taking that I read in this study to be credible"). Participants answered on a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*).

We further measured the perceived likelihood of a safe hostage release and future attacks after concessions were made using one item each ("The terrorists will safely release the hostages after they receive what they demanded" and "The terrorists will use the resources they gain from authority concessions to execute further attacks in the future" respectively). Participants answered on a 7-point Likert scale (1 = *highly unlikely*, 7 = *highly likely*).

Measures for political ideology, age, and gender were identical to those used in Study 1.

Results and Discussion

Table 4 shows descriptive statistics and intercorrelations for all variables assessed in Study 2. The average NCP support was, again, high (M = 5.06, SD = 1.70), $t(416) = 12.79$, $p < .001$, d = 0.63, 95% CI = [0.90; 1.23]. Again, older (r = .12, $p < .05$) and more conservative (r = .14, $p < .01$) participants reported stronger NCP support.

Confirmatory Analyses

Table 5 shows the descriptive statistics, on which the following analyses are based. Due to a violation of the normality assumption, we decided to deviate from the preregistration and used a robust trimmed-means ANOVA (Mair & Wilcox, 2020) with NCP support as the criterion and information on benefits and costs as the predictors.[3] It revealed a main effect of information on benefits, $F(1, 413) = 24.24$, $p < .001$, partial $\eta^2 = 0.06$. Participants who received information on benefits supported the NCP less than participants who received no information, $t(190.787) = 4.45$, $p < .001$, d = 0.61, 95% CI = [0.52; 1.56]. This finding supports Hypothesis 1. No other main or interaction effects were found. Contrary to Hypothesis 2, participants who received information on the costs of concessions and participants who received no information did not differ in their NCP support, $t(211) = -0.22$, p = .826, d = -0.03, 95% CI = [-0.43; 0.33]. Figure 1 depicts violin plots of NCP support across the four experimental conditions in Study 2.

Exploratory Analyses

To further illuminate the results pattern of Study 2, we conducted analyses for variables that we collected for exploratory reasons. In these analyses, we observed relevant effects that were unique to the provision of information on

3 We applied a trimming level of 20%. An uncorrected ANOVA yielded equivalent results.

Table 4. Descriptive Statistics and Intercorrelations for All Variables in Study 2

			Intercorrelations										
	Variable	*M (SD)*	1	2	3	4	5	6	7	8	9	10	11
1	NCP support	5.06 (1.70)	-										
2	Consideration of norm	4.39 (1.91)	.24***	-									
3	Consideration of benefits	4.64 (1.85)	-.03	.10*	-								
4	Consideration of costs	5.75 (1.40)	.49***	.18***	.08	-							
5	Perceived credibility	5.53 (1.23)	.20***	.11*	.11*	.18***	-						
6	Perceived likelihood of hostage release	3.55 (1.59)	-.32***	-.17***	.10*	-.20***	-.01	-					
7	Perceived likelihood of future attacks	5.84 (1.24)	.49***	.23***	-.04	.38***	.28***	-.31***	-				
8	Political ideology	3.16 (1.65)	.14**	.03	-.09	-.01	.08	-.10*	.10*	-			
9	Age	34.05 (11.44)	.12*	-.01	-.10*	-.03	.12*	.01	.09	.18***	-		
10	Information on benefits: given		-.25***	-.04	.02	-.07	-.17***	.26***	-.15**	.01	-.10	-	
11	Information on costs: given		.04	-.01	.08	.07	.08	-.03	.01	.00	-.05	.02	-

Note. $N = 417$, *** $p < .001$, ** $p < .01$ * $p < .05$

Table 5. Means and Standard Deviations for NCP Support, Perceived Likelihood of Hostage Release, and Perceived Likelihood of Future Attacks by Experimental Condition

	M (*SD*)			
	No information	Information on benefits given	Information on costs given	Information on benefits and costs given
NCP support	5.50 (1.47)	4.46 (1.92)	5.46 (1.47)	4.80 (1.69)
Perceived likelihood of hostage release	3.17 (1.56)	4.06 (1.52)	3.14 (1.47)	3.87 (1.59)
Perceived likelihood of future attacks	6.05 (1.26)	5.59 (1.37)	5.99 (1.03)	5.72 (1.25)

Note. No information n = 112, only information on benefits n = 103, only information on costs n = 101, information on benefits and costs given n = 101

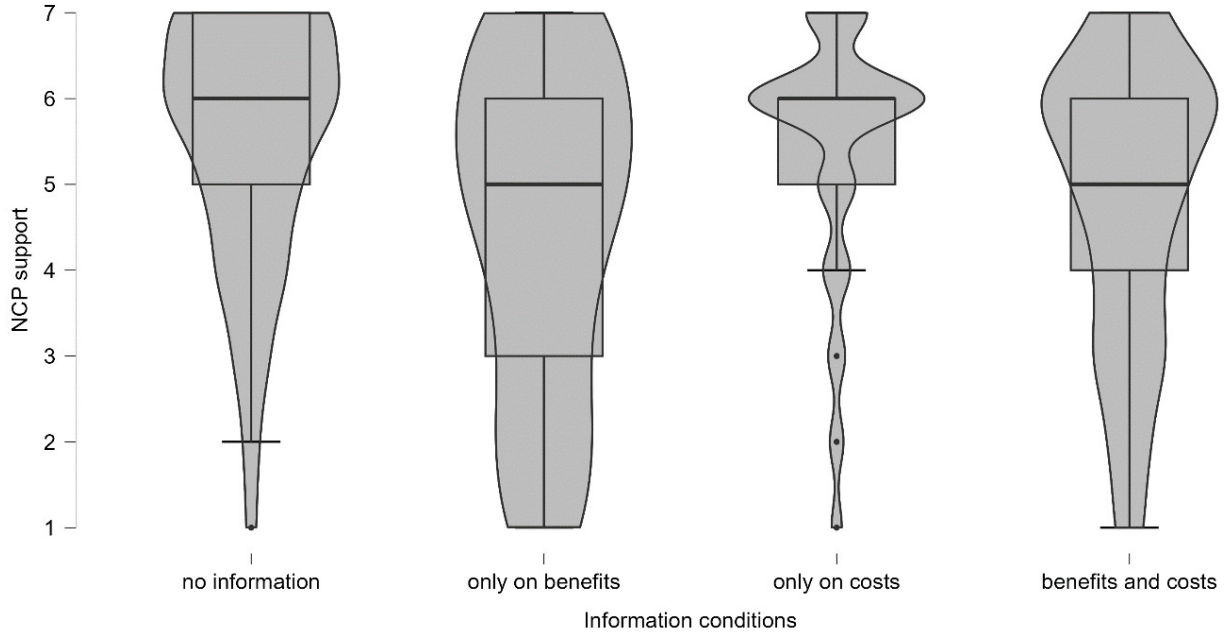

Figure 1. Violin Plots of NCP Support across Experimental Conditions in Study 2

Note. Grey-shaded areas depict rotated kernel density. Thick black bar represents the median. Box represents the interquartile range (IQR). Whiskers depict minimum and maximum values within 1.5 IQR. Black points represent outliers.

the benefits (see Table 3). The following analyses always describe comparisons with the control condition (i.e., the condition in which no additional information was provided). Table 5 displays the descriptive statistics on which these analyses are based. Providing participants with the information on the benefits of concessions increased the perceived likelihood of a safe hostage release, M_{Diff} = -0.81, t(415) = -5.40, p < .001, d = -0.53, 95% CI = [-1.11; -0.52]. This finding shows that the manipulation worked as intended.

However, providing participants with this information also decreased their perceptions of the likelihood of future attacks, M_{Diff} = 0.37, t(403.212) = 3.04, p = .003, d = 0.30, 95% CI = [0.13; 0.60]. This is interesting for two reasons. First, the presented information on the benefits of concessions did not entail any statement about the likelihood of future attacks (see Table 3). Second, participants did not deem future attacks more likely even when they were explicitly told that concessions may increase the likelihood of future abductions (Brandt et al., 2016), M_{Diff} = -0.02, t(412.124) = -0.20, p = .845, d = -0.02, 95% CI = [-0.26; 0.22]. Providing participants with this information may, thus, have confirmed their pre-existing expectations about terrorist behavior (e.g., that terrorist behavior is irrational and malevolent; e.g., Silke, 1998). This suggests that the participants may have already expected that concessions to terrorist hostage takers lead to more attacks in the future—this expectation was not increased by additional, corresponding information. By contrast, the information that concessions can increase the likelihood of a safe hostage release may have violated their expectations.

There is further evidence for this interpretation: Providing participants with information on the benefits of concessions led them to perceive the information they received as less credible, M_{Diff} = 0.43, t(415) = 3.60, p < .001, d = 0.35, 95% CI = [0.20; 0.66], while providing them with information on the costs did not, M_{Diff} = -0.19, t(405.755) = -1.56, p = .120, d = -0.15, 95% CI = [-0.42; 0.05]. These asymmetrical findings revealed by our confirmatory and exploratory analyses can be explained with one of the cen-

tral tenets of the heuristic-systematic model. The model proposes that people balance their aspiration to be confident in a decision with their preference to conserve cognitive resources (Chaiken & Ledgerwood, 2012). The difference between a person's confidence in their decision and the degree of confidence they desire is called the *confidence gap*. Closing bigger confidence gaps requires more effortful systematic processing. By challenging peoples' expectations about terrorist behavior, information on the benefits of concessions might widen the confidence gap, resulting in more systematic processing. This, in turn, may explain why only the provision of information on the benefits lead to changes in NCP support, while information on the costs of concessions did not. In sum, we find evidence supporting the notion that people have an imperfect understanding of the benefits but not of the costs of concessions in a terrorist hostage situation.

Study 3

In Study 2, we investigated people's responses to terrorist hostage-takings as a moral dilemma while varying the availability of information on potential benefits and costs of concessions. Building on these results, in Study 3, we were interested in people's responses to this dilemma under complete information as it would be presented in modern moral dilemma research: Which moral principles drive moral judgements (and, thus, NCP support) in terrorist hostage dilemmas?

In the classic Trolley problem, the decision to take action—and thus killing one person so that five others can live—has been interpreted as *utilitarian* (i.e., maximizing overall wellbeing), while the decision to not take action has been interpreted as *deontological* (i.e., adhering to moral norms). Gawronski and his colleagues (2017) criticized this interpretation of choices in moral dilemmas for two reasons: First, the consequences and moral norms (i.e., the core aspects of the utilitarian and deontological principals) are typically confounded because they are rarely (if ever) subject to experimental manipulation. Second, interpreting moral decisions as either utilitarian or deontological disregards the possibility that a moral decision might be driven by a general preference for action or inaction, irrespective of the consequences and moral norms. Guided by Gawronski et al.'s (2017) CNI model (consisting of the sensitivity to *c*onsequences, sensitivity to moral *n*orms, and general preference for *i*naction versus action irrespective of consequences and moral norms), we addressed these limitations in our investigation of terrorist hostage-taking policies in Study 3 via independent manipulations of (i) the consequences of concessions, (ii) the salient moral norm, and (iii) whether supporting concessions was the action or inaction default. We also included further criterion variables beyond NCP support that are often employed in moral dilemma research (e.g., Körner et al., 2019, 2020): the perceived appropriateness of taking action (i.e., making concessions) and participants' intention to take action (i.e., support concessions).[4]

Theory, Preregistered Hypotheses, and Research Questions

In the following, we will describe our theorizing about the relationship between the three main factors of Gawronski et al.'s (2017) CNI model adapted to our research (i.e., consequences of concessions to terrorist hostage-takers, the moral norms salient in terrorist hostage-takings, and whether support for concessions is the action or inaction default) and NCP support.

Consequences

Making concessions in terrorist hostage taking situations will likely result in hostage release (Mertes et al., 2020, 2021), but also more attacks in the future (Brandt et al., 2016). Even if these future attacks endanger "only" the same number as people as the hostage-taking at hand (i.e., if the gains and losses are equivalent), losses are assumed to loom larger than corresponding gains (e.g., Tversky & Kahneman, 1991). When concessions to terrorist hostage-takers are assumed to lead to attacks involving more people (i.e., the benefits are lower than the costs), people should be particularly *loss-averse* (Tversky & Kahneman, 1991) and thus less inclined to support concessions. When concessions are not assumed to lead to more attacks (i.e., the benefits are greater than the costs), people should be more inclined to support concessions. Thus, we hypothesized:

> *Hypothesis 1a:* When the benefits of concessions are greater (vs. lower) than the costs, people should express more intent to support concessions.
> *Hypothesis 1b:* When the benefits of concessions are greater (vs. lower) than the costs, people should perceive concessions as more appropriate.
> *Hypothesis 1c:* When the benefits of concessions are greater (vs. lower) than the costs, people should express less NCP support.

Salient moral norms

Moreover, in uncertain situations, people often turn to salient norms to inform their decision-making (e.g., Cialdini & Goldstein, 2004). As mentioned earlier, terrorist hostage-takings entail uncertainty even when the dilemma is laid out in detail. When a norm prescribing concessions is made salient (e.g., "human life in danger should be saved"), people should be more inclined to support concessions than when a norm prohibiting concessions is made salient (e.g., "terrorist demands should never be granted"). We, thus, derived the following hypotheses:

4 The preregistration for this study can be accessed at https://osf.io/nszve/?view_only=68b18d4270ee416880f2a6a5e629ca95.

> *Hypothesis 2a:* When a prescriptive norm prescribes concessions (vs. when a proscriptive norm prohibits them), people should express more intent to support concessions.
> *Hypothesis 2b:* When a prescriptive norm prescribes concessions (vs. when a proscriptive norm prohibits them), people should perceive concessions as more appropriate.
> *Hypothesis 2c:* When a prescriptive norm prescribes concessions (vs. when a proscriptive norm prohibits them), people should express less NCP support.

Support as the action or inaction default

Finally, people experience stronger regret for negative outcomes when these outcomes result from actions rather than inactions (Gilovich & Medvec, 1995; Kahneman & Tversky, 1982). Thus, they should be hesitant to support concessions because they want to avoid the regret of a potential negative outcome. However, this so-called *action effect* is reversed when prior negative outcomes suggest taking action (*inaction effect*, Zeelenberg et al., 2002), for example, when denying concessions has led to hostage executions in the past. Although most people are not directly involved with hostage-takings, they acquire knowledge about past hostage situations through media coverage, which is likely to include examples in which denying concessions has led to negative outcomes (e.g., Callimachi, 2014b). In sum, both the action effect (Kahneman & Tversky, 1982) and the inaction effect (Zeelenberg et al., 2002) might apply. Therefore, we pose the following research question:

> *Research Question 1:* Is there higher support for concessions to terrorist hostage- takers when supporting concessions is the action default or the inaction default?

Method

Design

We implemented a 2 (consequences: benefits of concessions greater vs. lower than costs) × 2 (norm: prescriptive norm prescribes concessions vs. proscriptive norm prohibits concessions) × 2 (action/inaction: supporting concessions is the action default vs. the inaction default) between-subjects design. We assigned participants randomly to the resulting eight conditions.

Sample

An a priori power analysis (α = .05, 1-β = .80, number of groups = 8, numerator df = 1) in G*Power 3.1.9.4 (Faul et al., 2007) showed that detecting a small-sized effect (f = .10) in an ANOVA requires a total sample size of N = 787. As preregistered, we excluded all participants who failed one or more attention checks.[5] In accordance with this approach, recruiting 1080 participants left us with a final sample of N = 829 American Prolific users who had answered all attention checks correctly and had not participated in the previous studies (50.54% female, 2.53% other; M_{age} = 35.01, SD_{age} = 12.33). Participants received $0.60 as remuneration. Again, participants expressed an, on average, liberal political orientation (M = 3.09, SD = 1.64), $t(828)$ = -16.06, p < .001, d = -0.56, 95% CI = [-1.03; -0.81]. Age, gender, and political ideology did not differ across conditions.

Procedure

After participants provided informed consent, they were presented with a scenario describing a newspaper article about a terrorist hostage situation. Information given in the scenario differed depending on the experimental conditions. Participants were either told that the terrorists would use the ransom to execute further attacks (i.e., costs greater than benefits; n = 423) or support their communities (i.e., benefits greater than costs; n = 406). Next, the scenario described a poll that showed that the majority of people believe that human life should be saved (i.e., norm prescribes concessions; n = 421) or that the government should not negotiate with terrorists (i.e., norm proscribes concessions; n = 408). Finally, participants were informed that there was a petition urging the government to either not pay the ransom (i.e., action default; n = 423) or pay the ransom (i.e., inaction default; n = 406). For the exact wording used in the scenario, see Table 6. We asked participants to read the scenario carefully and informed them that they would be asked questions to check for attentive reading. The scenario and the manipulations are described in Table 6. We then asked participants to complete a questionnaire (see below). Completing the study took on average five minutes.

Measures

We measured the behavioral intention to support concession by asking participants to indicate whether they would sign the petition as described in the manipulation (yes/no). We then recoded the variable to indicate whether participants indicated that they would support concessions depending on the experimental condition they were in. This means that in the condition in which supporting concessions was the action default, participants who indicated that they would sign the petition were marked as supporting concessions. In contrast, participants in the condition in which supporting concessions was the inaction default, were marked as supporting conditions if they indicated that they did not want to sign the petition.

We measured perceived appropriateness of concessions using one item ("How appropriate would it be for the government to pay the ransom in order to secure the release of

5 Among all participants, n = 112 answered the consequences attention check item incorrectly; n = 123 answered the norms attention check item incorrectly; n = 89 answered the action/inaction attention check item incorrectly.

Table 6. Scenario and Manipulations Used in Study 3

Factor	Text	
	"You read a newspaper article about an ongoing terrorist hostage-taking. A terrorist organization has abducted a journalist from your country and threatens to kill him if the government does not pay a ransom of one million dollars. A rescue mission is not an option because the terrorists' current location is unknown. The terrorists have a reputation for adhering to agreements with the authorities and acting on deadlines. If ransom is paid, they will release the hostage safely. If ransom is denied, they will execute the hostage. In this particular case, the authorities state that they have no reason to believe otherwise."	
Consequences	**Benefits of concessions greater than costs**	**Benefits of concessions lower than costs**
	"Based on information on their past activities, it is highly likely that the terrorists would use the ransom money to support their communities. Thus, it is rather unlikely that more people would come to harm." (*n* = 406)	"Based on information on their past activities, it is highly likely that the terrorists would use the ransom money to execute more attacks in the future. Thus, it is rather likely that more people would come to harm." (*n* = 423)
Norm	**Prescriptive norm prescribes concessions**	**Proscriptive norm prohibits concessions**
	"The article reports results of a recent poll, which showed that the absolute majority of people in your country believe that human life in danger should be saved whenever possible." (*n* = 421)	"The article reports results of a recent poll, which showed that the absolute majority of people in your country believe that terrorist demands should not be granted." (*n* = 408)
Action/ Inaction	**Supporting concessions is the action default**	**Supporting concessions is the inaction default**
	"The article tells about a petition urging the government to pay the ransom." (*n* = 423)	"The article tells about a petition urging the government not to pay the ransom." (*n* = 406)
	"You do not know who initiated the petition. The petition is less than 24 hours old, so there is no information on how many people already signed it. The platform hosting the petition is considered trustworthy. Signing the petition would not require you to create an account or to give any sensitive information about yourself."	

Note. The consequences manipulation was adapted from Gawronski et al. (2017).

the hostage?"; Körner et al., 2019). Participants answered on a 7-point Likert scale (1 = *not appropriate at all*, 7 = *completely appropriate*).

We measured NCP support using the same item as in Studies 1 and 2. NCP support and support behavior intention correlated with r = -.51. NCP support and perceived appropriateness correlated with r = -.70. These correlations indicate convergent validity and, thus, construct validity of the NCP support measure.

Using one item each, we measured consideration of norms ("When I answered the question of how the government should act, I thought primarily about what the majority of the people in my country think."), hostage release ("..., I thought primarily about that the terrorists will release the hostage when they receive what they demanded."), and future consequences ("..., I thought primarily about potential future consequences of the ransom payment"). Participants indicated their agreement to these statements on 7-point Likert scales (1 = *completely disagree*, 7 = *completely agree*).

The perceived likelihood of a safe hostage release and future attacks were measured using the same items as in Study 2.

We assessed the perceived plausibility of the scenario using one item ("I found the scenario I read to be plausible"). Participants answered this item on a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*). We assessed the perceived plausibility of the notion that in the scenario there is no alternative to (not) paying the ransom using one item ("How plausible is it that there are no alternative actions to achieve the release of the hostage other than to pay the ransom in the scenario?" Körner et al., 2019). Participants answered this item on 7-point Likert scales (1 = *not at all*, 7 = *completely*).

We measured the perceived credibility of the information provided in the study using one item ("I found the general information on terrorist hostage-takings that I read in this study to be credible"). Participants answered this item on a 7-point Likert scale (1 = *completely disagree*, 7 = *completely agree*).

Measures of political ideology, age, and gender were identical to those used in Studies 1 and 2.

Results and Discussion

Table 7 shows descriptive statistics and intercorrelations for all variables assessed in this study. In this study, the average NCP support was descriptively lower than in the previous studies (M = 4.06, SD = 1.68). To contextualize this lower level: NCP support in this study is generally in line with the NCP support expressed by participants who had a balanced view on the terrorist hostage dilemma in Study 1. Therefore, the descriptive increase in support for concessions might be the result of presenting the terrorist hostage dilemma in full detail in Study 3.

Once again, older (r = .15, p < .001) and more conservative (r = .20, p < .001) participants reported stronger NCP support.

Confirmatory Analyses

Table 8 shows the results of a logistic regression analysis with the intention to support concessions as the criterion variable and consequences, norms, and action/inaction as

Table 7. Descriptive Statistics and Intercorrelations for All Variables in Study 3

			Intercorrelations															
		M (*SD*)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Consequences	0.49 (0.50)	-															
2	Norms	0.51 (0.50)	-.02	-														
3	Action/inaction	0.49 (0.50)	.03	-.02	-													
4	Support behavior intention	0.65 (0.48)	.17***	.08*	.30***	-												
5	NCP support	4.06 (1.68)	-.16***	-.06	.02	-.51***	-											
6	Perceived appropriateness	4.56 (1.81)	.20***	.13***	.03	.57***	-.70***	-										
7	Consideration of norms	2.73 (1.75)	.00	.07	-.06	.01	.04	.04	-									
8	Consideration of hostage release	5.24 (1.79)	.17***	.04	.03	.50***	-.54***	.64***	-.02	-								
9	Consideration of future consequences	5.24 (1.71)	-.10**	-.05	-.09*	-.35***	.44***	-.42***	.05	-.30***	-							
10	Perceived likelihood of hostage release	5.10 (1.59)	.09**	.00	-.03	.33***	-.43***	.48***	-.03	.54***	-.24***	-						
11	Perceived likelihood of future attacks	5.07 (1.86)	-.49***	-.05	-.06	-.37***	.40***	-.39***	.05	-.33***	.30***	-.30***	-					
12	Scenario plausibility	5.46 (1.39)	-.13***	-.01	.04	-.00	.03	.00	.05	.05	.05	.09**	.15***	-				
13	Scenario plausibility (no alternatives)	3.85 (1.70)	.07	.06	.01	.17***	-.19***	.20***	.10**	.19***	-.09*	.17***	-.10**	.28***	-			
14	Perceived credibility	5.16 (1.31)	-.15***	.00	.02	-.00	.03	.00	.08*	.06	.01	.13***	.13***	.64***	.32***	-		
15	Political ideology	3.09 (1.64)	-.03	.01	.02	-.12***	.20***	-.21***	.09**	-.17***	.11**	-.19***	.11**	.00	-.03	-.00	-	
16	Age	35.01 (12.33)	.01	.01	.09**	-.04	.15***	-.20***	-.12***	-.15***	.05	-.09*	.07*	.04	.05	.09*	.17***	-

Note. $N = 829$, *** $p < .001$, ** $p < .01$, * $p < .05$.

Table 8. Logistic Regression of Support Behavior Intention on Consequences, Norms, and Action/Inaction

	b	*SE*	Wald-χ(1)	*p*	*OR*	95% CI OR
Consequences	0.76	0.16	23.47	< .001	2.15	[1.58; 2.93]
Norms	0.43	0.16	7.51	.006	1.54	[1.13; 2.09]
Action/Inaction	1.38	0.16	73.65	< .001	3.99	[2.11; 5.47]
Constant	-0.55	0.15	13.47	< .001	0.58	

Note. $\chi^2(3) = 109.49$, $p < .001$. Cox & Snell $R^2 = .12$. Nagelkerke's $R^2 = .17$.

the predictors. As hypothesized (Hypothesis 1a, Hypothesis 2a), people were more likely to express intent to support concessions when the benefits were greater than the costs and when a prescriptive norm prescribed concessions. Further, they were more likely to express intent to support concessions when support was the inaction default (RQ 1), which provides evidence for the action effect.

As the normality assumption was violated, we deviated from the preregistration by using a robust trimmed-means ANOVA with perceived appropriateness of concessions as the criterion variable and consequences, norms, and action/inaction as predictors.[6] It revealed main effects of consequences, $F(1, 825) = 29.92$, $p < .001$, partial $\eta^2 = .04$, $f = 0.20$, and norms, $F(1, 825) = 15.67$, $p < .001$, partial $\eta^2 = .02$, $f = 0.14$. Concessions were considered more appropriate when the benefits outweighed the costs ($M = 4.92$, $SD = 1.69$) than when the costs outweighed the benefits ($M = 4.22$, $SD = 1.86$). Concessions were seen as more appropriate when a prescriptive norm prescribed concessions ($M = 4.79$, SD = 1.81) than when a proscriptive norm prohibited them ($M = 4.33$, $SD = 1.78$). Figure 2 depicts violin plots of NCP support across the eight experimental conditions in Study 3. These findings support both Hypothesis 1b and Hypothesis 2b.

An ANOVA with NCP support as the criterion variable and consequences, norms, and action/inaction as predictors showed a main effect of consequences, $F(1, 825) = 21.95$, $p < .001$, partial $\eta^2 = .03$, $f = 0.18$. NCP support was lower when the benefits of concessions outweighed the costs ($M = 3.79$, $SD = 1.65$) than when the costs outweighed the benefits ($M = 4.32$, $SD = 1.66$). Figure 3 depicts violin plots of NCP support across the eight experimental conditions in Study 3. Thus, H1c was supported, but H2c, for a lack of a main effect of norms, was not. In sum, confirmatory analyses revealed that consequences and—to a lesser extent—norms were important influences, indicating that participants' decisions were guided by both utilitarian and deontological considerations.

Exploratory Analyses

To further illuminate the results pattern of Study 3, we again conducted analyses for variables that we collected for exploratory reasons. Our manipulation of the consequences had unique effects that could not be observed for the salient moral norm and action/inaction manipulations. Informing participants that the terrorists would use the ransom money to support their communities rather than to execute further attacks reduced the perceived likelihood of further attacks, $M_{Diff} = 1.83$, $t(734.567) = 16.14$, $p < .001$, $d = 1.13$, 95% CI = [1.61; 2.05]. This finding shows that the manipulation of the consequences worked as intended.

However, giving people the information about support for the communities (vs. execute further attacks) also led to an increase in the perceived likelihood of a safe hostage release, $M_{Diff} = -0.30$, $t(827) = -2.70$, $p = .005$, $d = -0.19$, 95% CI = [-0.51; -0.08]. This is particularly interesting because irrespective of the condition, participants were informed that the terrorists were known to honor their commitments. Yet, across all conditions, the perceived likelihood that the terrorists would release the hostages safely upon receiving the ransom ($M = 5.10$, $SD = 1.59$) strongly deviated from 7 (the maximum of the scale), $t(828) = -34.41$, $p < .001$, $d = -1.20$, 95% CI = [-2.00; -1.79]. This reinforces the findings of the previous studies and indicates that participants distrust terrorists to keep their promises, even when they are told that the terrorists have established a reputation as reliable negotiators. There is further evidence for this interpretation. When participants were told that the terrorists would use the ransom money to support their communities rather than execute further attacks, they saw the totality of information they had received as less credible, $M_{Diff} = 0.39$, $t(827) = 4.37$, $p < .001$, $d = 0.30$, 95% CI = [0.22; 0.57], and the scenario in general as less plausible, $M_{Diff} = 0.36$, $t(827) = 3.75$, $p < .001$, $d = 0.26$, 95% CI = [0.17; 0.55]. These findings suggest that this information conflicted with the participants' expectations about terrorist behavior and trustworthiness. Thus, paralleling the results of Study 2 and the effects of providing information on the benefits of concessions to terrorists, we again see that information conflicting with prior negative expectations about terrorist behavior is at least partially discredited.

General Discussion

In terrorist hostage-takings, people's lives depend on their government's willingness to concede to terrorists' demands. Although adherence to the NCP does not fully eliminate terrorist hostage-takings, it represents an effective

6 We again applied a trimming level of 20%. An uncorrected ANOVA once again yielded equivalent results.

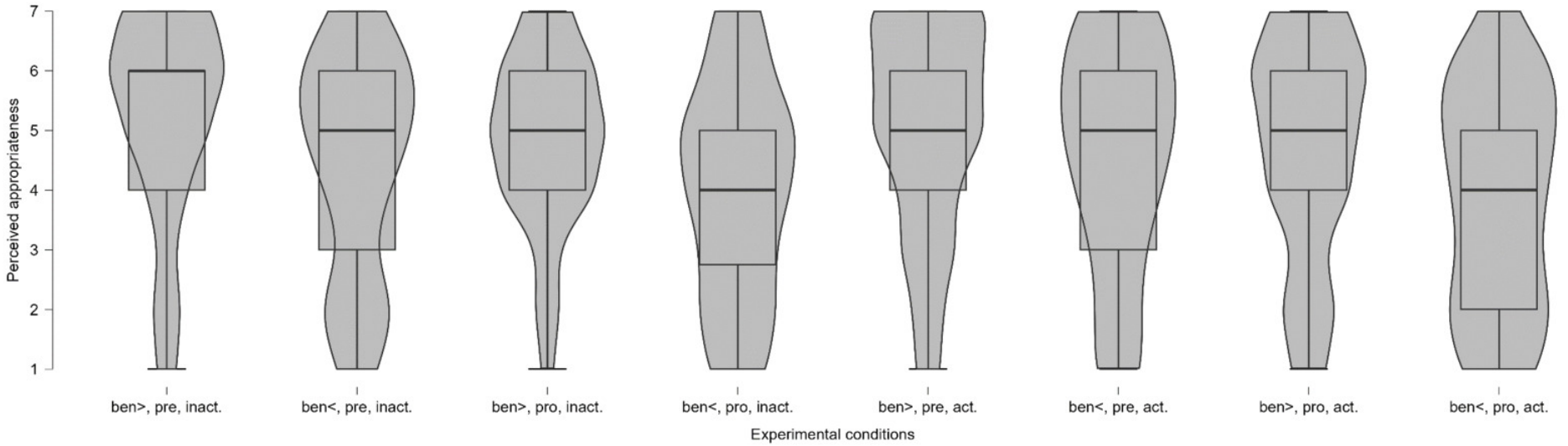

Figure 2. Violin Plots of Perceived Appropriateness of Concessions across Experimental Conditions in Study 3

Note. Consequences conditions: ben> = benefits greater than costs, ben< = costs greater than benefits, norms conditions: pre = prescriptive norm prescribes concessions, pro = proscriptive norm prohibits concessions, Action/inaction conditions: act = supporting concessions is the action default, inact = supporting concessions is the inaction default. Grey-shaded areas depict rotated kernel density. Thick black bar represents the median. Box represents the interquartile range (IQR). Whiskers depict minimum and maximum values within 1.5 IQR.

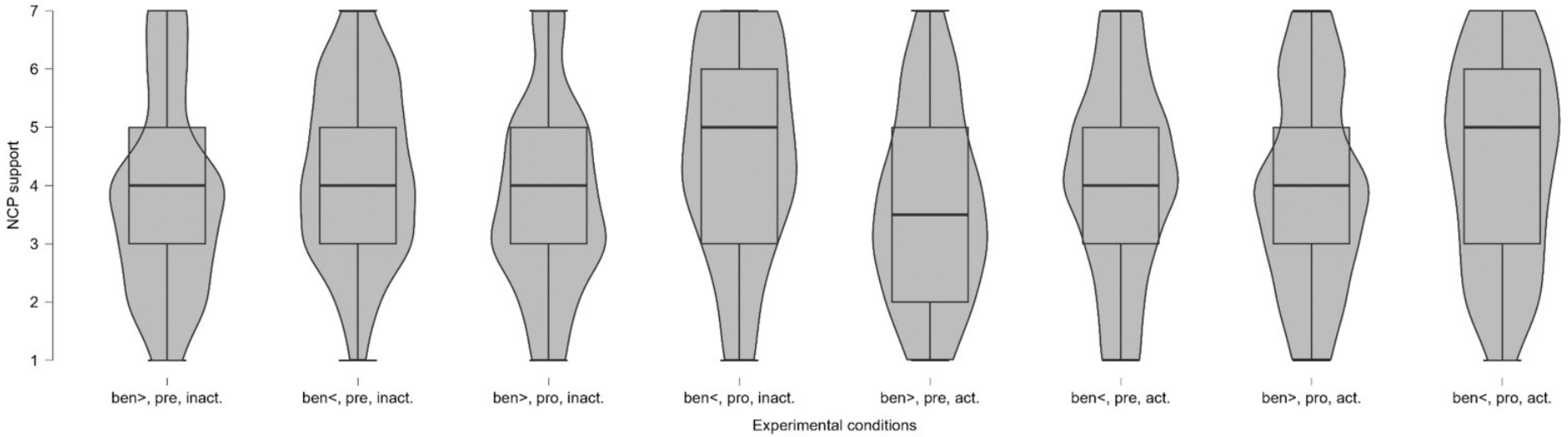

Figure 3. Violin Plots of NCP support across Experimental Conditions in Study 3

Note. Consequences conditions: ben> = benefits greater than costs, ben< = costs greater than benefits, norms conditions: pre = prescriptive norm prescribes concessions, pro = proscriptive norm prohibits concessions, Action/inaction conditions: act = supporting concessions is the action default, inact = supporting concessions is the inaction default. Grey-shaded areas depict rotated kernel density. Thick black bar represents the median. Box represents the interquartile range (IQR). Whiskers depict minimum and maximum values within 1.5 IQR.

means of reducing them (Brandt et al., 2016). However, governments often contravene their official policy of withholding concessions from terrorists (e.g., Callimachi, 2014a). Given that public support for a policy affects government adherence to that policy (see Burstein, 2003), we investigated what shapes people's support for the no-concessions policy in three studies with a mixed-methods approach.

Theoretical Implications

We found converging evidence that people have an imperfect understanding of the consequences of concessions in the terrorist hostage dilemma. Their NCP support depends on which information they have and on the understanding of the dilemma that results from their information.

Participants in Study 1 supported or opposed the NCP for a variety of reasons, most of which were concerned with preventing the direct and indirect short-term (i.e., the death of the hostages) and long-term consequences (e.g., an increase in abductions in the future, the loss of political prestige). It was noteworthy that most participants in this study focused only on a single or a few aspects of the terrorist hostage dilemma when pondering to what extent they supported the NCP. One possible conclusion from this finding is that most participants had an incomplete representation of the terrorist hostage dilemma.

Consistent findings from all three studies suggest that people are averse to the notion of making concessions to terrorists to resolve hostage situation because they tend to have pessimistic expectations about the outcomes of concessions. On the one hand, they seem to expect that making concessions will lead the terrorists to engage in further abductions in the future. On the other hand, they seem to doubt that terrorists will release the hostages safely once concessions are made. These expectations can serve as heuristics when the motivation and ability to process data systematically are low (Chen & Chaiken, 1999). They likely (at least partly) originate in internal attributions of terrorist behavior: Terrorists engage in extreme and violent acts and are thus seen as irrational and malevolent (see also Silke, 1998). This is often reflected in political rhetoric and media coverage of terrorist events (e.g., Borger et al., 2014; "Bush's Statement," 2002; Pronin et al., 2006). However, while the expectation that concessions to hostage-takers leads to more abductions in the future is supported by research (e.g., Brandt et al., 2016), recent findings showed that concessions also reliably increase the likelihood of a safe hostage release (Mertes et al., 2020, 2021).

In line with our hypotheses derived from the heuristic-systematic model (Chen & Chaiken, 1999), simply giving people a one-sided statement about the benefits of concessions to terrorist hostage-takers reduced their support for the NCP (and, thereby, increased their support for concessions). Providing a one-sided statement on the costs, however, had no effect. Information on the costs of concessions (i.e., that they will lead to further abductions) is congruent with peoples' expectations, so the resulting confidence gap should be small (cf. Chaiken & Ledgerwood, 2012). Information on the benefits (i.e., that they reliably increase the likelihood of a safe hostage release) widens the confidence gap by challenging their expectations, resulting in more systematic processing. These findings underscore the applicability of the heuristic-systematic model in investigations of popular support for the NCP and political decision-making in general (cf. Chaiken & Ledgerwood, 2012).

We further investigated how people decide to what extent they support the NCP (or concessions) when the hostage dilemma is outlined in detail (see Study 3). The detailed presentation of the dilemma in Study 3 provided people with more information and thereby increased their ability to systematically process the dilemma (Chen & Chaiken, 1999). Thus, they may have been able and motivated to make their decision in the moral dilemma based on its merits rather than by drawing on easily accessible heuristics on terrorist behavior. This probably resulted in descriptive differences in NCP support across studies. People expressed less support for the NCP in Study 3 than in the previous studies, where participants were provided with incomplete information.

Following recent moral dilemma research (Gawronski et al., 2017; Gawronski & Ng, 2024), we addressed a common limitation of more traditional research on moral dilemmas in Study 3. In traditional moral dilemma research, moral judgements were interpreted as either motivated by utilitarian (i.e., the desire to maximize overall well-being) or deontological considerations (i.e., the desire to adhere to the moral norm of preserving life). The interpretation was typically confounded as the consequences for overall well-being and the salient moral norm were not manipulated independently. Furthermore, this interpretation ignored the possibility that moral judgments may be based on a general preference for action or inaction. We addressed these limitations by independently manipulating the consequences of making concessions, the salient moral norm, and whether supporting concessions was the action or inaction default (see Gawronski et al., 2017). NCP support was mainly driven by utilitarian considerations, but the perceived appropriateness of concessions and people's intention to support concessions were also driven by deontological considerations. Although these moral principles were traditionally interpreted as opposites, both do affect support for concessions when manipulated independently in our study (cf. Gawronski et al., 2017). This finding significantly extends the current knowledge about the motives underlying moral decision-making.

Finally, our work addresses a common concern about the internal and external validity of moral dilemma research. Artificial moral dilemmas such as the Trolley problem have been criticized for their lack of realism and validity, as the scenarios described were often abstract thought experiments rather than situations in which individuals might find themselves (Bauman et al., 2014). The scenario we employed reflects the reality of terrorist hostage situations, and the response formats we chose mirrored realistic decisions that U.S. citizens could face when learning about a hostage-taking.

Practical Implications

Our findings highlight the chances of tailoring political communication (cf. McNair, 2017). Press conferences, interviews, and speeches addressing terrorist hostage situations (e.g., Hudson, 2014) give administrations a platform to communicate information to both the media and the public. Our findings point out several ways in which the government can potentially increase popular support for their decision to concede to terrorist hostage-takers and thereby mitigate the political damage that violating the NCP could bring about. First, they can defend their decision by informing people about the existence of evidence showing that concessions to terrorist hostage-takers do in fact increase the likelihood of a safe hostage release (Mertes et al., 2020, 2021). As we demonstrated, people seem to doubt that terrorists can be trusted to keep their promises. Therefore, information on the short-term benefits of concessions to terrorist hostage-takers might reduce these doubts. Second, they can emphasize the moral norm of preserving human life by acknowledging the government's responsibility to save the hostages. Third, we found that describing the moral dilemma of a terrorist hostage situation in more detail leads to lower overall NCP support and, thus, higher support for concessions. Although some information should not be made public because it is sensitive or could endanger the hostages, providing more information about the general structure of terrorist hostage-takings as a moral dilemma situation might increase popular support for the decision to concede.

Furthermore, our study adds further evidence to the notion that different audiences might respond differently to their government's reaction to concede to terrorist hostage-takers. For example, the hostage exchange of Sgt. Bowe Bergdahl was more popular among Democrats than among Republicans (Pew Research Center, 2014). Across all three studies we found small to medium-sized correlations between NCP support, age, and political ideology, indicating that concessions to terrorist hostage-takers find more support among younger and more liberal-leaning audiences.

Limitations and Future Research

Our research may be limited by our exclusively American samples. In 2001, nearly 3000 Americans were killed in the 9/11 attacks, arguably the most impactful terrorist attacks in recent history (e.g., Hartig & Doherty, 2021). As a result, Americans might be more ardent in their support of government anti-terror policies than citizens from other countries. Yet, we were able to show that even Americans' support for the NCP differs depending on the available information. Nevertheless, future research should investigate whether these findings generalize to nations with a more lenient stance on concessions to terrorist hostage-takers.

Furthermore, our samples consisted of Prolific users. Prolific is a platform that allows people to gain additional income by participating in surveys. Thus, it is conceivable that Prolific users are, on average, of lower socioeconomic status than the general population, which might affect their decision-making in moral dilemmas: People lacking material resources pass harsher moral judgements because they are more vulnerable to the consequences of others' harmful actions (Pitesa & Thau, 2014). As a result, Prolific users might be more inclined to agree with the NCP. However, our findings show that even under these conditions, support for the NCP differed depending on the information available to our participants. Future research could nevertheless test the influence of socioeconomic status on moral judgement in terrorist hostage dilemmas.

Another limitation is that we exclusively used single-item measures to keep processing time short and reduce dropout. This might pose a threat to the construct validity, especially for our central criterion variable NCP support. However, in Study 3, we found strong negative correlations with related measures such as perceived appropriateness and the intention to support concessions, which demonstrate convergent validity and thus ensure construct validity. Future research could nevertheless utilize multi-item measures.

Conclusion

Despite the wide-spread policy of denying terrorists concessions, terrorist hostage-takings pose a difficult moral dilemma. Governments do not only have to carefully weigh the expected benefits and costs of their decision, but also consider whether their voters will support their decision. Popular support for government policies in terrorist hostage-takings depends on the information that people have available to make their judgement. More detailed political communication focusing on the benefits of concessions, emphasizing the moral norm to preserve human life in danger, as well as generally describing the moral dilemma of a terrorist hostage situation in detail may increase public support for concessions.

Author Contributions

All authors designed this research. Marc Mertes collected, processed, and analyzed the data. All authors interpreted the findings. Marc Mertes wrote the manuscript. Robert Böhm and Joachim Hüffmeier revised the draft.

Competing Interests

No author involved in this project has any interests—financial or non-financial—that might be interpreted as influencing this research.

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Ethics

This research was conducted out of Germany, where ethics approval is not mandatory for all studies. This research has been conducted in compliance with the American Psychological Association's Ethical Principles for Research with Human Participants.

Consent

Across all three studies, informed consent was obtained from each participant.

Data and Material Availability

Raw and processed data is available at https://osf.io/y9s4x/?view_only=0bea30e47dfb47e5a26ea7de0b221c33.

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Supplementary Materials

Peer Review Communication

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