Technische Universität Dortmund

Fakultät Erziehungswissenschaften, Psychologie und Bildungsforschung

Advancing the Knowledge of the Terrorist Hostage Dilemma

Dissertation zur Erlangung des akademischen Grades
Doktor der Philosophie (Dr. phil.)

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geboren am 01.05.1987 in Trier

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Zusammenfassung

Geiselnahmen, in denen Terroristen Menschen entführen und damit drohen, sie zu töten, falls die Autoritäten sich nicht dazu bereiterklären, ihre Forderungen zu erfüllen, sind ein globales Problem. Ob Autoritäten die Forderungen terroristischer Geiselnehmer erfüllen sollten wird kontrovers diskutiert. Es ist bisher unklar, ob Zugeständnisse seitens der Autoritäten tatsächlich zuverlässig zur Freilassung der Geiseln führen. In einer ersten Studie wurden dokumentierte Daten internationaler terroristischer Geiselnahmen, die sich zwischen 1982 und 2005 zutrugen, analysiert. Die Befunde zeigten, dass selbst teilweise Zugeständnisse an die Geiselnehmer die Zahl der Todesopfer unter den Geiseln verringern. Um diesen *Zugeständniseffekt* in einer konzeptuellen Replikation zu sichern und mögliche Randbedingungen zu untersuchen, wurden in einer zweiten Studie aktuelle Daten innerstaatlicher, terroristischer Geiselnahmen untersucht. Die Ergebnisse zeigten, dass die Wahrscheinlichkeit einer sicheren Geiselfreilassung mit dem Anteil erfüllter Forderungen steigt. Der Zugeständniseffekt ist ein zeitlich stabiles Phänomen, das sich auch auf innerstaatliche Geiselnahmen mit terroristischem Hintergrund generalisieren lässt. In insgesamt drei weiteren Studien wurde die öffentliche Zustimmung zur inzwischen weit verbreiteten Richtlinie, keine Zugeständnisse an Terroristen zu machen, untersucht. Viele Nationen folgen dieser Richtlinie offiziell, doch auch die strengsten Vertreter verstoßen gelegentlich gegen sie, vor allem, wenn der öffentliche Druck dies zu tun hoch ist. In einer ersten Studie zu diesem Thema wurde die Zustimmung amerikanischer BürgerInnen zu dieser Richtlinie erfasst und Gründe für die Zustimmung untersucht. Die allgemeine Zustimmung fiel hoch aus. Die berichteten Gründe sprechen dafür, dass die BürgerInnen ein unvollständiges Verständnis des Geiselnahmedilemmas haben. In einer zweiten Studie hierzu wurde experimentell der Einfluss verfügbarer Informationen auf die Zustimmung zur Zugeständnisrichtlinie getestet. Es fand sich, dass die TeilnehmerInnen, die zuvor

Informationen zu den Vorteilen von Zugeständnissen erhalten hatten, eine geringere Zustimmung zur Richtlinie berichteten, als TeilnehmerInnen, die keine Informationen erhalten hatten. In der dritten Studie hierzu wurde den BürgerInnen ein Geiselnahmeszenario vorgelegt, in dem die Konsequenzen der Zugeständnisentscheidung, die gültige moralische Norm, sowie ob Zugeständnisse zu unterstützen der Standard bei Unterzeichnen (Tätigkeit) oder Nichtunterzeichnen (Untätigkeit) einer Petition war, experimentell manipuliert wurden. Die Zustimmung zur Richtlinie nahm ab, wenn die Vorteile von Zugeständnissen die Nachteile überwogen. Die wahrgenommene Angemessenheit von Zugeständnissen fiel höher aus, wenn die Vorteile die Nachteile überwogen und die gültige moralische Norm das Retten von Menschenleben vorschrieb. Die berichtete Intention, sich in einer Petition zugunsten von Zugeständnissen zu verhalten, fiel höher aus, wenn die Vorteile die Nachteile überwogen, wenn die soziale Norm das Retten von Menschenleben vorschrieb und wenn Zugeständnisse durch Untätigkeit unterstützt werden konnten. Zusammengefasst trägt die hier beschriebene Forschung zu einem besseren Verständnis der kurzfristigen Konsequenzen von Zugeständnissen an terroristisch motivierte Geiselnehmer sowie der moralischen Entscheidungsfindung im Geiselnahmedilemma bei. Damit können die hier dargestellten Befunde Autoritäten dabei helfen, informierte Entscheidungen zu treffen, die potentiell zur Rettung von Menschenleben beitragen können.

Summary

Hostage-takings, in which terrorists abduct people and threaten to kill them, unless the authorities agree to fulfill their demands, are a global problem. Whether authorities should concede to such demands is a controversial debate. So far, the relationship between authority concessions and safe hostage release is unclear. In a first study, I analyzed data on international terrorist hostage-takings that occurred between 1982 and 2005. Results showed that even partially conceding to the terrorists' demands reduced casualties among the hostages. In a second study, I analyzed data on recent domestic terrorist hostage-takings to test the stability and generalizability of this *concession effect* in a conceptual replication. Results showed a positive link between the degree of demand fulfilment and the likelihood of a safe hostage release. The concession effect was shown to be a timely stable phenomenon that generalizes to domestic terrorist hostage situations. Three further studies investigated popular support for the no-concessions policy (i.e., the policy of denying terrorists concessions). Many nations have officially adopted this policy, but even the most ardent proponents violate it from time to time, especially when public pressure to do so is high. In a first survey study on this matter, American citizens were asked about their support for this policy and their reasons to support or oppose it. In general, support for the no-concessions policy was high. The reasons mentioned by the participants suggest that most citizens have an incomplete understanding of the hostage dilemma. A second experiment tested in how far people's policy support depends on the information available to them. People who were provided with information on the benefits of concessions (vs. no information at all) showed lower no-concessions policy support. In a third study on the matter, people were presented with a terrorist hostage dilemma scenario, in which the consequences of making concessions, the salient moral norm, and whether supporting concessions in a petition was the action or inaction default were manipulated. No-concessions policy support was found to be lower

when the benefits of concessions outweighed the costs. Perceived appropriateness of concessions was higher when the benefits of conceding outweighed the costs and when the salient moral norm prescribed saving lives. Intent to support concessions in a petition was higher when the benefits of conceding outweighed the costs, when the salient moral norm prescribed saving lives, and when supporting concession was the inaction default. In sum, the research presented here contributes to a better understanding of the consequences of authority concessions to terrorist hostage-takers as well as moral judgement in the terrorist hostage dilemma. The findings may help authorities make evidence-based decisions that can potentially save lives.

General Introduction

Terrorist hostage taking is a global problem on the rise. The number of reported abductions has drastically increased over the recent decades (START, 2019) and the dark figure of unreported cases might be many times higher (Gilbert, 2018). Every year, thousands of people are abducted by terrorists who threaten to kill them unless the authorities agree to their demands (Miller, 2020). Authorities confronted with these demands face a difficult and controversial dilemma (e.g., Borger et al., 2014): Conceding could be the only way to save the hostages' lives, but could also have a variety of negative economic, political, and humanitarian consequences (e.g., Callimachi, 2014; Brandt et al., 2016). Making this decision requires a comprehensive understanding of the consequences that either option has. Researchers from different disciplines have been studying the psychology of terrorists (e.g., Gill & Corner, 2017, Silke, 1998), the dynamics in terrorist hostage-takings (e.g., Atkinson et al., 1987; Wilson, 2000; 2003), and the consequences of the decision to concede (e.g., Corsi, 1981; Brandt & Sandler, 2009) for decades. Yet, despite these efforts, many questions remain unanswered.

In this current doctoral dissertation, I aspired to deepen the theoretical and practical understanding of the terrorist hostage dilemma. Specifically, I aimed to answer two important research questions. First: Is there a reliable relationship between authority concessions and hostage release in terrorist hostage-takings? Second: What shapes people's support for the *no-concessions policy* (i.e., the policy of denying terrorists concessions; see below)?

I address these questions in three articles comprising five studies[1]. The first and second study (Article 1 and 2) sought to answer the first research question. In Article 1, data on international terrorist hostage-takings (Mickolus et al., 2006) were analyzed to test how authority concessions affect the number of casualties in terrorist hostage-takings, showing

[1] A list of these articles and corresponding publication details can be found on pp. 175-176.

that even partially fulfilling terrorist demands reduced casualties (i.e., the *concession effect*). Article 2 conceptually replicated the findings of Article 1 with data on domestic terrorist hostage-takings (START, 2019), ruling out potential boundary conditions of the concession effect. Article 3 examined the second research question. Its first study, a qualitative online-survey, investigated why people support their government's policy in terrorist hostage-takings. Its second study, an online-experiment, tested whether people's support for government policy in terrorist hostage-takings can be altered depending on the information that is available to them. Finally, in Article 3's third study, another online-experiment, we used a moral dilemma framework (Gawronski et al., 2017) to test the effect of consequences, norms, and general preferences for action (or inaction) on policy support.

The following paragraphs of the general introduction will serve three purposes. As terrorism is a broad concept (cf. Schmid, 2011), I will provide necessary definitions and specify the scope of the research presented here. Then, I will motivate the two central research questions of this dissertation. Finally, I will provide a summary of the main objectives me and my coauthors sought to accomplish.

Terrorism

Investigating terrorist hostage-takings requires a defined understanding of what terrorism is. Defining terrorism, however, is a difficult challenge: Several hundred definitions are in use (Schmid, 2011). Moreover, individual evaluations of who does or does not deserve the terrorist label are subject to personal biases, such as partisanship (e.g., Noor et al., 2019). In this doctoral dissertation, Schmid's revised academic consensus definition (2011, pp. 86-87) is used. According to this definition, terrorism refers to "on the one hand to a doctrine about the presumed effectiveness of a special form or tactic of fear-generating, coercive political violence and, on the other hand, to a conspiratorial practice of calculated, demonstrative, direct violent action without legal or moral restraints, targeting mainly

civilians and noncombatants, performed for its propagandistic and psychological effects on various audiences and conflict parties." Schmid (2011) further elaborated that terrorist acts are (1) politically motivated, and (2) involve the use or threat of violence. (3) They can be carried out by individuals, groups, or international networks who may act on behalf of (or be sponsored by) a state. (4) They typically target civilians and non-combatants who are neither directly responsible for the conflict underlying the acts of terrorism, nor their ultimate targets. (5) They aim to spread fear among those who are similar to or identify with the victims in order to achieve favorable outcomes for the terrorists. (6) They are part of longer campaigns towards superordinate goals rather than standalone events.

Hostage-Takings

Terrorist hostage-takings are situations in which terrorists abduct or captivate people and threaten their lives to coerce concessions (Wilson, 2000; 2003). There are different forms of hostage-takings: kidnappings, barricade situations, and hijackings (e.g., Faure & Zartman, 2010). In kidnappings, terrorists abduct people and hold them captive in an unknown location. In barricade situations, the hostage-takers barricade themselves with the hostages in a known place. Hijackings refer to hostage-takings, in which terrorists take control of vehicles (e.g., airplanes, busses) and take the passengers hostage. Among these types of hostage-takings, kidnappings are by far the most prevalent (START, 2019).

Hostage-takings are not exclusive to terrorists as some hostage-takers are "ordinary" criminals. Criminal and terrorist hostage-takings differ in several ways: Typically, criminal hostage-takings are not part of longer campaigns and serve no superordinate goal other than personal gain via criminal extortion. They are also not politically motivated. In addition, criminal and terrorist hostage-takers may differ with regard to their mental condition (e.g., Diamond et al., 2001; Corner et al., 2016; Silke, 1998). This doctoral dissertation focuses

exclusively on terrorist hostage-takings. No inferences about purely criminally motivated hostage situations are made.

Demands

Terrorist demands typically revolve around ransom, safe passage, the release of political prisoners, publicity, or political change in the form of recognition or the withdrawal of troops (Wilson, 2000, 2019). Ransoms can be demanded for the terrorists themselves or as a so-called *Robin Hood ransom*, in which the payment benefits a third party. Safe passage describes an agreement in which the hostage-takers may leave the site of the hostage taking without authority interference. The demand for the release of political prisoners can mean either specific named prisoners or a number of unnamed prisoners (Wilson, 2003). Publicity can be conceded to terrorists by allowing them, for example, to spread propaganda via state broadcasting services or in newspapers (e.g., Gilbert, 2020; Jenkins, 2018). Notably, publicity is always part of hostage situations because they typically attract media attention (e.g., Gilbert, 2020). Not all demands have the same likelihood of being granted: Authorities are more likely to grant demands for ransom, safe passage, and publicity, but less likely to grant demands for the release of political prisoners (e.g., Gaibulloev & Sandler, 2009; Waugh, 1982; Wilson, 2003).

Consequences of Concessions

Whether or not authorities *should* concede to terrorist hostage-takers' demands in order to free the hostages is a highly debated question (e.g., Borger et al., 2014; Miller, 2011). Concessions can have several important short-term and long-term consequences. First, ransom payments are an important source of funding for terrorist organizations (e.g., Callimachi, 2014; Wilson, 2019). Second, when authorities are willing to pay large amounts of money, this might interfere with private hostage negotiations by driving up terrorists' ransom expectations (Borger et al., 2014; Callimachi, 2014). Third, agreeing to exchange

political prisoners for hostages subverts the criminal justice system and returns dangerous individuals into organizational structures in which they can proceed to cause harm (Jenkins, 2018). Fourth, granting demands for publicity helps the terrorists to spread fear and supports their recruiting efforts (cf. Schmid, 2011). Fifth, conceding to terrorist demands for political change can raise questions about governance (e.g., Jenkins, 2018). Sixth, concessions, if not made in secret (Faure & Zartman, 2010), can be detrimental to perceptions of a nation's foreign politics and cause political embarrassment (e.g., Callimachi, 2014; Scheuer, 1990). Seventh, accepting terrorists as negotiation partners could ascribe legitimacy to their cause (e.g., Toros, 2008). Eight, concessions would be ethically compromising because they could be seen as a reward for injustice and cruelty (e.g., Bapat, 2006; Clutterbuck, 1992). Finally—and probably most importantly—, authority concessions can lead to more hostage-takings in the future (Arin et al., 2019; Brandt & Sandler, 2009; Brandt et al., 2016). Although these estimations vary (Brandt et al., 2016), Brandt and Sandler (2009) found that each instance of authority concessions leads to, on average, 2.62 further abductions.

Despite all of these negative consequences, conceding to the terrorists' demands might be the only way to save the hostages' lives, especially in kidnappings, in which the hostages' location is unknown and rescue missions are impossible (cf. Schmid & Flemming, 2010). However, it has been questioned whether terrorist hostage-takers can be expected to keep their promises (e.g., Bapat, 2006). Mickolus (1987) argued that what terrorists *demand* and what they actually *want* might not necessarily be the same thing. In some cases, hostage takings might not be about receiving concessions but about garnering publicity (Wilson, 2019). This notion is in line with the goal of spreading fear and intimidation (Schmid, 2011). Moreover, there are rarely possibilities for authorities to punish terrorists for reneging on their promises (Bapat, 2006): If violating an agreement with the authorities has no downsides for the terrorists, then their most rational course of action would be to negotiate terms, take

what the authorities are willing to give, and renege on their promises once concessions are made. Doing so would yield short-term benefits because the terrorists would gain the resources conceded by the authorities as well as the publicity garnered by them negotiating in bad faith and executing the hostages.

These deliberations raise an important question that serves as the first research question of this doctoral dissertation: *Is there a reliable relationship between authority concessions and safe hostage release in terrorist hostage-takings?* Aside from unsystematic anecdotal evidence (e.g., Knowlton, 2014; Villamor & Eddy, 2017), only few studies have systematically investigated the hostage-related outcomes of terrorist hostage-takings (Wilson, 2019). The results of these studies were inconclusive because they confounded terrorist surrender and authority concessions, used only small sample sizes, and ignored kidnapping incidents (cf. Corsi, 1981; Donohue & Taylor, 2003; Friedland & Merari, 1992).[2] Thus, the question of whether authority concessions will lead to a safe hostage release still requires a comprehensive answer.

The No-Concessions Policy

The wish to prevent the negative consequences of concessions has led to a number of global undertakings to stop the payment of ransoms or other forms of concessions to terrorist hostage-takers over the recent decades (e.g., UN General Assembly Resolution 579, 1985; UN General Assembly Resolution 638, 1989; UN General Assembly Resolution 1904, 2009). As a result, many nations have officially adopted the *no-concessions policy* (Borger et al., 2014; UN General Assembly Resolution 2133, 2014).[3] In theory, this policy should be an effective deterrent: If no concessions are made, then there should be no incentive for terrorists to engage in hostage-takings (Jenkins, 2018). Despite this notion, many nations

[2] An extensive review of this literature is provided in Article 2.
[3] It is noteworthy that the no-concessions policy does not prohibit negotiating with terrorist hostage-takers.

officially following the no-concession policy still concede to terrorist hostage-takers through secret backchannels (e.g., Callimachi, 2014). As the Human Rights Council Advisory Committee of the United Nations (2013, p. 14) summed it up, "a publicly professed policy of non-concession to terrorists does not prevent them from getting involved in the payment of ransoms to free their nationals held hostage by terrorists."

Even the most ardent proponents of this policy violate it on occasion, as was the case when the United States government agreed to free five imprisoned Taliban fighters in exchange for the release of Sgt. Bowe Bergdahl (Knowlton, 2014). Political and public pressure to bring Bergdahl home had been high. He had been in captivity for five years as the last America's prisoner of war (Hastings, 2012). In a speech addressing Bergdahl's release, President Obama said, "the United States of America does not ever leave our men and women in uniform behind" (Hudson, 2014). Foreign media suspected that Obama had used the exchange as an opportunity to appease outraged current and former members of the military and portray himself as a caring supreme commander (Ross, 2014): Bergdahl's release had been preceded by the deaths of veterans due to negligent treatment in an Arizona Veterans Health Administration facility (Zezima, 2014). The scandal had forced Secretary of Veterans Affairs Eric Shinseki to resign (Shear & Oppel Jr., 2014). While the Bergdahl exchange was highly unpopular with republicans, the majority of democrats agreed that it was the right thing to do and that the government has a responsibility to free American soldiers irrespective of the circumstances (Pew Research Center, 2014a).

This case emphasizes that even though the no-concessions policy was envisioned to be a steadfast principle, its enforcement can sometimes depend on political climate and public opinion. In democracies, governments have a certain obligation or at least an incentive to act on public opinion because if they consistently fail to do so, they risk losing voter support (McNair, 2017). The idea that enforcement of the no-concessions policy is dependent on

popular support for this policy at the time raises an important question that will serve as the second research question of this doctoral dissertation: *What shapes people's support for the no-concessions policy?* This question may have significant implications for political communication and policymaking, yet, so far, psychological science had not devoted any attention to investigating popular support for the no-concessions policy.

Objectives

The studies presented here build on one another: Later studies were motivated by the findings in earlier studies. Therefore, I will foreshadow the results of each study where necessary. Detailed descriptions and discussions of these results are provided in Article 1, 2, and 3, as well as the General Discussion section at the end.

As I mentioned earlier, authorities facing the decision of whether or not to concede to terrorist demands require a comprehensive understanding of the potential consequences of this decision. Given that extant evidence on the matter was limited at the time (cf. Corsi, 1981; Donohue & Taylor, 2003; Friedland & Merari, 1992), the first objective of this doctoral dissertation was to test the effect of authority concessions on the number of casualties in a preferably substantial sample of documented data on terrorist hostage-takings (Article 1). In essence, we found what we refer to as the *concession effect*: Even partially fulfilling terrorist demands reduces casualties among the hostages and in general. We wanted to ensure that these results are reliable, so the second objective was to conduct a conceptual replication (e.g., Hüffmeier et al., 2016; LeBel et al., 2019) in order to test the stability and generalizability of the concession effect (Article 2).

Terrorist hostage situations constitute a moral dilemma for authorities. If they decide to concede, the hostages will be freed (Article 1 and 2), but there will (most likely) be more abductions in the future that might potentially put more people in harm's way (e.g., Brandt & Sandler, 2009; Brandt et al., 2016). Citizens deciding whether they agree with their

government's policy in these situations face a similar dilemma. However, their dilemma differs in two important ways. First, they may have incomplete information about the consequences. Second, the consequences, even if known, are uncertain.[4] The third objective of this doctoral dissertation, thus, was to explore how much support there is for the no-concessions policy and why people choose to support or oppose it (Article 3, Study 1). Results of an online survey indicated that no-concessions policy support is, in general, high, but depends on which aspect of the dilemma people focus on. Building on this finding, the fourth objective was to investigate in how far support for the no-concessions policy is affected by the information made available to people (Article 3, Study 2). We found that support for the policy decreases when people are informed about the fact that concessions increase the likelihood of a safe hostage release. The fifth objective was to investigate policy support when people are fully informed about the hostage dilemma. Following recommendations from recent moral dilemma research (e.g., Gawronski & Beer, 2017; Gawronski et al., 2017), we manipulated the consequences of the decision to concede, the salient moral norm, as well as whether supporting concessions was the action (vs. inaction) default to illuminate in how far these factors affect support for the no-concessions policy.

The decision to grant or deny concessions to terrorist hostage-takers requires authorities to carefully weigh the lives of the current hostages against all the potential negative consequences (e.g., Callimachi, 2014; Brandt et al., 2016). In these situations, the lives of innocent people are on the line, so this decision will always be difficult and should not be made without taking into account a variety of factors that go beyond the findings of this doctoral dissertation (e.g., Gaibulloev & Sandler, 2009). Consequently, I would consider it reckless to derive universal action recommendations for authorities, crisis negotiators, and

[4] A comprehensive comparison between terrorist hostage-takings and other, frequently investigated moral dilemmas (e.g., Foot, 1976) will be provided in Article 3.

policymakers based on the findings presented here alone. Rather, I will discuss tentative practical implications that should be viewed in concert with other factors that might influence this decision. The main goals of this doctoral dissertation, however, are to deepen the theoretical understanding of the terrorist hostage dilemma and to close important research gaps in the literature. Thereby, our work can help authorities make informed, evidence-based decisions that can potentially save lives.

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Blow Hot and Cold: Popular Support for the No-Concessions Policy in Terrorist Hostage-Takings

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This research was supported by a grant from the German Research Foundation (DFG) awarded to the last author (HU 1772/5-1).

Abstract

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. Despite this, little is known about how people form their judgement of governmental policies in this moral dilemma. We argue that people typically have incomplete information and their policy support for concessions can be substantially altered by changing the information they receive about different consequences. Across three studies (overall $N = 1{,}547$) employing both qualitative and quantitative methods, we found that (a) people show lower support for concessions when they have incomplete information, (b) providing information on the benefits of concessions increases support for concessions, (c) support for concessions under full information increases when the benefits outweigh the costs and when a norm prescribes concessions. The potential implications for policymaking are discussed.

Keywords: terrorist hostage-takings, no-concessions policy, moral dilemma, information processing

Blow hot and cold: Popular support for the no-concessions policy in terrorist hostage-takings

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). There is a controversial debate about whether governments should 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 these immediate situations (Mertes et al., 2020, 2021), but increases the likelihood of more abductions in the future (Brandt et al., 2016). Thus, terrorist hostage-takings pose a moral dilemma in which governments must weigh the lives of the hostages 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, especially in countries like the U.S., where the 9/11 attacks led to anti-terror legislation and military operations that continue to this day. Like many countries, the U.S. have a long-standing policy to deny terrorists' concessions (The White House, 2015; UN General Assembly Resolution 2133, 2014). Yet, even its most ardent proponents violate this *no-concessions policy* (hereafter NCP) from time to time (e.g., Callimachi, 2014a). Public opinion can exert pressure to do so (e.g., Pew Research Center, 2014). Democratic governments disregarding public opinion risk losing voter support (cf. McNair, 2017). If, however, policy enforcement in life-or-death situations depends on public support for said policies, then it is critical to understand what shapes people's support.

Despite the important potential implications for policymaking, psychological research has so far ignored the question of how people come to their judgements of governmental decisions regarding how to respond to terrorist hostage-takings. We address this gap in three

studies using a mixed-methods approach. Before we delineate our study designs and hypotheses, we describe the characteristics of terrorist hostage-takings from a moral dilemma perspective, highlighting its unique features in comparison to other moral dilemmas.

Responses to Terrorist Hostage-Takings as a Moral Dilemma

Terrorist hostage-takings differ from many other moral dilemmas in three important ways. We want to illustrate these differences with the prominent Trolley problem (Foot; 1967). In the most common description of this dilemma, a runaway trolley is on collision course with five people who are certain to die in the crash. The accident can be prevented by taking action to redirect the trolley to another track, where it would kill only one person. Would it be acceptable to take action?

Such artificial moral dilemmas have been criticized for a lack of experimental, psychological, and mundane realism (Bauman et al., 2014). Participants often consider them implausible because they are abstract thought experiments rather than situations that people could actually find themselves in. In contrast, marking the first difference, terrorist hostage-takings represent frequently occurring real-world dilemmas with great societal relevance (e.g., Callimachi, 2014a).

Second, in artificial moral dilemmas, people are typically fully informed about the outcomes that will occur if they take action. In the Trolley problem, taking action results in one rather than five deaths. In contrast, when people become aware of an ongoing hostage situation through media coverage, the dilemma is usually not laid out for them in all details. This may be due to a factual lack of knowledge. 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). Thus, most people's understanding of hostage dilemmas is presumably incomplete. People therefore probably resort to other sources of information, such as stereotypes, values, and norms, to

inform their decision whether to support the NCP, which 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). It is also possible that certain information exists, but is misrepresented to or even hidden from the public. For example, political figures have often defended the NCP saying that denying concessions deters future hostage-takings (e.g., “Obama on Payments to Iran: This Wasn't Some 'Nefarious Deal'”, 2016), although this notion has been called into question before (e.g., Jenkins, 2018).

Third, in most artificial moral dilemmas, the consequences of taking action 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 completely (e.g., Brandt et al., 2016). These uncertainties may give rise to several psychological effects affecting individual perceptions and judgements of governmental policies, such as wishful thinking (e.g., Krizan & Windschitl, 2007), hindsight bias (e.g., Christensen-Szalanski & Fobian Willham, 1991), and other biased perceptions of uncertain events. 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.

In summary, understanding what determines people's NCP support has great relevance and is unlikely to be derived from responses to other moral dilemmas. To address this important research gap, we used a mixed-methods approach. In our exploratory and qualitative Study 1, we surveyed U.S. participants to identify factors influencing their support for the NCP in a situation with incomplete information. In Study 2, we experimentally investigated how the availability of information on the benefits and costs of concessions affects people's NCP support. Finally, in Study 3, we drew from recent moral dilemma research (Gawronksi et al., 2017; Gawronski & Beer, 2017) by presenting participants with a specific hostage-taking scenario. We manipulated the consequences of conceding, moral norms, and whether support for concessions to terrorist hostage-takers was the action (vs. inaction) default to investigate how these factors affect NCP support. Thus, our research contributes to a better theoretical understanding of how public support of governmental policies in hostage situations can change depending on the available information, allowing to predict policy support depending on what information is emphasized by policymakers.

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 in how far they support it. We further wanted to learn what motivates their NCP support.

Method

Sample

We collected data from $N = 301$ American Prolific users (43.85% female, 1.33% other; $M_{age} = 35.09$, $SD_{age} = 11.33$) who were potential voters. They received $1 as remuneration. Participants indicated their political ideology on a Likert-type scale ranging from 1 = *extremely liberal* to 7 = *extremely conservative* (see Table 1). A bootstrapped one-

sample *t*-test against the midpoint of the scale (4) revealed that participants were on average rather liberal ($M = 3.17$, $SD = 1.69$), $t(300) = -8.55$, $p < .001$, $d = -0.49$, 95% CI = [-1.02; -0.63].

Procedure

After participants gave 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 incomplete 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 (Table 1). Study completion took on average five minutes.

Table 1

Measures Used in All Three Studies in Order of Administration (Part 1)

Construct	Study 1	Study 2	Study 3
Support behavior intention			One item, ”Would you sign the petition?” (yes / no)
NCP support	One item, “The government should never concede to terrorist demands.” (1 = *fully disagree*, 7 = *completely agree*)	One item, “The government should never concede to terrorist demands.” (1 = *fully disagree*, 7 = *completely agree*)	One item, “The government should never concede to terrorist demands.” (1 = *fully disagree*, 7 = *completely agree*)
Policy knowledge	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.'"(1 = *fully disagree*, 7 = *fully agree*)		
Reasons for support	One item, "Please explain which information you factored into your decision when you rated in how far you agree with the statement: 'The government should never concede to terrorist demands.'" (free text)		
Appropriateness of concessions			One item, ”How appropriate would it be for the government to pay the ransom in order to secure the release of the hostage?” (1 = *not at all appropriate*, 7 = *completely appropriate*; Körner et al., 2019)
Consideration of norm		One item, “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.” (1 = *completely disagree*, 7 = *completely agree*)	One item, “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.” (1 = *completely disagree*, 7 = *completely agree*),
Consideration of benefits		One item, “When I answered the question of how the government should act, I thought primarily about the benefits that concessions to terrorists could have.” (1 = *completely disagree*, 7 = *completely agree*),	One item, “When I answered the question of how the government should act, I thought primarily that the terrorists will release the hostage when they receive what they demanded.” (1 = *completely disagree*, 7 = *completely agree*),

Table 1

Measures Used in All Three Studies in Order of Administration (Part 2)

Construct	Study 1	Study 2	Study 3
Consideration of costs		One item, "When I answered the question of how the government should act, I thought primarily about the damages that concessions to terrorists can cause." (1 = *completely disagree*, 7 = *completely agree*),	One item, "When I answered the question of how the government should act, I thought primarily about potential future consequences of the ransom payment." (1 = *completely disagree*, 7 = *completely agree*),
Perceived credibility		One item, "I found the general information on terrorist hostage-takings that I read in this study to be credible." (1 = *completely disagree*, 7 = *completely agree*)	
Perceived likelihood of hostage release		One item, "The terrorists will safely release the hostages after they receive what they demanded." (1 = highly unlikely, 7 = *highly likely*)	One item, "The terrorists will safely release the hostages after they receive what they demanded." (1 = highly unlikely, 7 = *highly likely*)
Perceived likelihood of future attacks		One item, "The terrorists will use the resources they gain from authority concessions to execute further attacks in the future." (1 = highly unlikely, 7 = *highly likely*)	One item, "The terrorists will use the resources they gain from authority concessions to execute further attacks in the future." (1 = highly unlikely, 7 = *highly likely*)
Scenario plausibility			1 item, "I found the scenario I read to be plausible." (1 = *completely disagree*, 7 = *completely agree*)
Scenario plausibility (no alternatives)			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?" (1 = *not at all*, 7 = *completely*; Körner et al., 2019)
Perceived credibility			One item, "I found the general information on terrorist hostage-takings that I read in this study to be credible." (1 = *completely disagree*, 7 = *completely agree*)

Table 1

Measures Used in All Three Studies in Order of Administration (Part 3)

Construct	Study 1	Study 2	Study 3
Attention checks			Three items, “Based on information on the terrorists’ past activities, it was predicted that they would use the ransom money to ...” (execute more attacks in the future / support their communities), “The recent poll cited in the article found that the majority of people in your country believe that ...” (human life in danger should be saved whenever possible / terrorist demands should not be granted), “The petition described in the article urged the government ...” (to pay the ransom / not to pay the ransom)
Political ideology	One item, “When it comes to politics, how do you usually think of yourself?” (1 = *extremely liberal*; 7 = *extremely conservative* Motta et al., 2018)	One item, “When it comes to politics, how do you usually think of yourself?” (1 = *extremely liberal*; 7 = *extremely conservative*; Motta et al., 2018)	One item, “When it comes to politics, how do you usually think of yourself?” (1 = *extremely liberal*; 7 = *extremely conservative*; Motta et al., 2018)
Age	One item, "Please enter your age (in years)." (free input)	One item, "Please enter your age (in years)." (free input)	One item, "Please enter your age (in years)." (free input)
Gender	One item, "Please choose your gender." (female / male / other)	One item, "Please choose your gender." (female / male / other)	One item, "Please choose your gender." (male / female / other)

Results and Discussion

Table 2 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 hostage-takings ($M = 5.41$, $SD = 1.49$), $t(300) = -18.51$, $p < .001$, $d = -1.07$, 95% CI = [-1,75; -1.41]. Overall NCP support was rather high ($M = 4.96$, $SD = 1.62$).

Table 2

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)	1			
2	Policy knowledge	5.41 (1.49)	.47***	1		
3	Political orientation	3.17 (1.69)	.22***	.06	1	
4	Age	35.09 (11.33)	.15**	.10	.11	1

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). Every 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.

This approach yielded ten different categories, each representing a different motivation to support or oppose the NCP (Table 3). Only two of these categories support the option to concede to terrorist hostage-takers unequivocally: *saving lives* and *empathy*. 29 participants made such pro-concessions statements (9.9%). Seven categories oppose the idea of making concessions: *deterrence*, *political appearance*, *distrust*, *orientation towards official policy*, *injustice*, *legitimacy*, and *principle*. 139 participants made such contra-concessions statements (47.3 %). This distribution suggests that people are either more aware of the costs of concessions than of their benefits, or that these costs affect their decision-making more than the benefits. *Consideration*, the only category that stated that the government needs to weigh the benefits and costs to decide on a case-by-case basis, was mentioned by 126 participants (42.9%). Even if we assumed that participants who made a statement from this category fully understood the consequences of making concessions, this was still only the minority of people.

We then recoded the data into three groups for quantitative analysis on a more abstract level: participants opposing concessions (i.e., participants who only made contra-concession statements, $n = 115$), participants supporting concessions (i.e., who only made pro-concession statements, $n = 24$), and participants with a balanced view (i.e., 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 ($M = 3.67$, $SD = 1.83$), $z = 6.43$, $p < .001$, $r = .39$, 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. This suggests that people's NCP support depends on what aspect of the dilemma they focus on.

Table 3

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.	"I think it is probably good that governments intend not to concede to demands, as that 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.

Study 2

Building on Study 1, in particular on the finding that different reasons were related to different degrees of NCP support, we conducted an experiment in which we varied the information that was available to our participants before they indicated their support. Specifically, we manipulated the availability of information on the benefits in the form of a hostage release (hereafter *benefits*) and costs in the form of more attacks in the future (hereafter *costs*).

Preregistered Hypotheses

We derived our hypotheses from the heuristic-systematic model of information processing (HSM; Chaiken & Ledgerwood, 2012; Chen & Chaiken, 1999). The HSM proposes that there are two stylized ways of processing information: *heuristically* and *systematically*. 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. When people lack motivation or ability to systematically process information, then heuristic processing guides judgement. Given that most people consider terrorism a major threat (Poushter & Fagan, 2020), we assume that motivation to process information is high. However, when people receive no information about the potential consequences of concessions, ability should be low and judgement should be guided by heuristic information, such as stereotypes about terrorist behavior (e.g., Silke, 1998), values, norms, and consensus information (Lau & Redlawsk, 2001). 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. We hypothesized that people who are given only information on the

benefits should support the NCP less than people who receive no information (H1). In contrast, people who are only given information on the costs should support the NCP more than people who receive no information (H2).

Method

Design

Our experiment used a 2 (benefits: information on benefits given vs. not given) × 2 (costs: 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 previously participated in Study 1. Using the same question as in Study 1, a one sample *t*-test against the scale-midpoint showed that participants were rather liberal ($M = 3.16$, $SD = 1.65$), $t(416) = -10.38$, $p < .001$, $d = -0.51$, 95% CI [-0.98; -0.70]. Age, gender, and political orientation did not differ across conditions.

Procedure

After participants gave informed consent, they read a paragraph with general information. Depending on the experimental condition, participants received another paragraph containing additional information (Table 4). Participants then filled out a questionnaire (Table 1). Study completion took on average about five minutes.

Table 4

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)

Results and Discussion

Table 5 shows descriptive statistics and intercorrelations for all variables assessed in this study. Overall NCP support was, again, high, $M = 5.06$, $SD = 1.70$.

Table 5

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

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

Confirmatory Analyses

To test H1, we ran a bootstrapped independent samples *t*-test comparing NCP support between participants who received information on the benefits ($M = 4.46$, $SD = 1.92$) and participants who received no information ($M = 5.50$, $SD = 1.47$), $t(190.787) = 4.45$, $p < .001$, $d = 0.61$, 95% CI [0.52; 1.56].[5] The results support H1.

To test H2, we compared NCP support between participants who received information on the costs ($M = 5.46$, $SD = 1.47$) and participants who received no information ($M = 5.50$, $SD = 1.47$) with a bootstrapped independent samples *t*-test. NCP support did not differ between these conditions, $t(211) = -0.22$, $p = .826$, $d = -0.03$, 95% CI [-0.43; 0.33].[6] H2 was not supported.

In concert, these results suggest that people generally have negative preconceptions about terrorist behavior that lead them to oppose concessions. Information on the benefits of concessions seem to conflict with these preconceptions of terrorist behavior (resulting in changes in NCP support), while information on the costs do not.

Exploratory Analyses

A robust trimmed-means ANOVA (Mair & Wilcox, 2020) with NCP support as the criterion and information on benefits and costs as the predictors 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 ($M = 4.63$, $SD = 1.81$) supported the NCP less than participants who did not receive information on benefits ($M = 5.48$, $SD = 1.47$), providing further support for the previous findings.

Finally, an exploratory parallel mediation analysis revealed that a pattern that is consistent with a dual mediation: the negative effect of information on benefits on NCP

[5] A sensitivity power ($\alpha = .05$, $1 - \beta = 0.80$, two-tailed) analysis in G*Power 3.1.9.4. (Faul et al., 2007) showed that the minimum effect size for this analysis was $d = 0.38$.
[6] The minimum effect size for this analysis was $d = 0.39$.

support could be due to changes in the perceived likelihoods of a hostage release and future attacks (Figure A, online supplement).

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 costs and benefits of concessions. In Study 3, we were interested in people's responses to this dilemma under complete information as it would be presented in traditional moral dilemma research. In the classic Trolley problem, the decision to take action—and thus killing one instead of five people—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 et al. (2017) criticized this interpretation of choices in moral dilemmas for two reasons: First, the consequences and norms (i.e., the core aspects of the utilitarian and deontological principals) are rarely 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 norms. To address these limitations in our investigation of terrorist hostage-taking policies, in Study 3 we independently manipulated the consequences, salient norm, and 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: the perceived appropriateness of taking action and participants' behavioral intention to take action.

Preregistered Hypotheses and Research Questions

Making concessions will likely result in hostage release (Mertes et al., 2020, 2021) and 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 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 do not lead to more attacks (i.e., the benefits are greater than the costs), people should be more inclined to support concessions. Thus, we hypothesized that when the benefits of concessions are greater (vs. lower) than the costs, people should express more intent to support concessions (H1a), perceive concessions as more appropriate (H1b), and express less NCP support (H1c).

In uncertain situations, people often turn to salient norms in order 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"), then 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 expected that when a prescriptive norm prescribes concessions (vs. when a proscriptive norm prohibits them), people should express more intent to support concessions (H2a), perceive concessions as more appropriate (H2b), and express less NCP support (H2c).

People experience stronger regret for negative outcomes when these outcomes result from actions rather than inactions (Kahneman & Tversky, 1982; Gilovich & Medvec, 1995). 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: Is there higher support for concessions to terrorist hostage-takers when supporting concessions is the action default or the inaction default (RQ1)?

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 ($\alpha = .05$, $1\text{-}\beta = .80$, 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[7]. 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 $0.60 as remuneration. Again, participants were rather liberal ($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 orientation did not differ across conditions.

[7] $n = 112$ 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.

Procedure

After participants gave informed consent, they were presented with a scenario. We asked them to read it 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 (Table 1). Completing the study took on average five minutes.

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 not to pay the ransom." (n = 423)	"The article tells about a petition urging the government 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 and norm manipulations were adapted from Gawronski et al. (2017).

Results and Discussion

Table 7 shows descriptive statistics and intercorrelations for all variables assessed in this study. In this study, overall NCP support was lower than in the previous studies (M = 4.06, SD = 1.68).

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

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

Confirmatory Analyses

Answers from the support behavior intention item (see Table 1) were recoded so that answers supporting concessions were coded as 1 and answers opposing concessions were coded as 0. Table 8 shows the results of logistic regression analysis with support behavior intention as the criterion variable and consequences, norms, and action/inaction as the predictors. As hypothesized (H1a, H2a), 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[8].

Table 8

Logistic Regression of Support Behavior 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 $R^2 = .17$.

A robust trimmed-means ANOVA with appropriateness of concessions as the criterion variable and consequences, norms, and action/inaction as predictors found main effects of consequences, $F(1, 825) = 29.92$, $p < .001$, partial $\eta^2 = .04$, $f = 0.20$, and norms,

[8] A sensitivity power analysis ($\alpha = .05$, $1 - \beta = .80$, two-tailed, p2 >= p1, Pr(Y=1|X=1) H0 = 0.57, total $N = 829$, R^2 other X = 0, X distribution = binomial, X parameter $\pi = .49$) in G*Power 3.1.9.7 (Faul et al., 2007) revealed that the minimum odds ratio for this analysis was OR = 1.50.

$F(1, 825) = 15.67$, $p < .001$, partial $\eta^2 = .02$, $f = 0.14$[9]. 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 ($M = 4.33$, $SD = 1.78$). These findings support H1b and H2b.

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 $\eta^2 = .03$, $f = 0.18$[10]. NCP support was higher when the benefits of concessions outweighed the costs ($M = 3.79$, $SD = 1.65$) than when the costs outweighed the benefits ($M = 4.32$, $SD = 1.66$). 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

Again, an exploratory parallel mediation analyses indicated that the effects of consequences on NCP support could be due to changes in the perceived likelihoods of a hostage release and future attacks (Figure B, online supplement), which is consistent with Study 2.

General Discussion

In terrorist hostage-takings, the people's lives depend on their government's willingness to concede to the terrorists' demands. Governments often contravene their official

[9] A sensitivity power analysis ($\alpha = .05$, $1 - \beta = .80$, total $N = 829$, numerator $df = 1$, number of groups = 8) in G*Power (Faul et al., 2007) showed that the minimum effect size for these analyses was $f = 0.10$.

[10] Again, the minimum effect size was $f = .10$.

NCPs (e.g., Callimachi, 2014a). Given that public policy support can affect government adherence to standing policies, we investigated what actually shapes people's NCP support in three studies with a mixed-methods approach.

We found converging evidence that people's NCP support differs depending on the reasons they consider (see Study 1), on which information they have, and what their resulting understanding of the hostage dilemma is. If they are not given extra information, people apparently resort to heuristic processing of stereotypes about terrorist behavior (e.g., Silke, 1998), values, norms, and consensus information spread in political rhetoric and media coverage (e.g., "Bush's Statement on the Middle East", 2002; Borger et al., 2014). These heuristics strongly oppose the idea that making concessions can be advisable. Consequently, people tend to support the NCP despite their imperfect knowledge that it is, in fact, the standing policy.

In line with our hypotheses derived from the HSM (Chen & Chaiken, 1999), simply giving people a one-sided statement about the scientifically proven benefits of concessions to terrorist hostage-takers (Mertes et al., 2020, 2021) reduced NCP support. Providing a one-sided statement on the costs had no effect. It is possible that these findings occurred because people process information on the benefits and costs differently. The HSM proposes that people balance their aspiration to be confident in their 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 processing. Information on the costs are congruent with people's easily accessible heuristics, so the confidence gap should be small. Information on the benefits, however, widen the confidence gap by challenging these heuristics, resulting in more systematic processing. These findings

underscore the applicability of the HSM in investigations of popular support for the NCP and political decision-making in general (cf. Chaiken & Ledgerwood, 2012).

We further investigated how people decide in how far they support the NCP when the moral dilemma is outlined in detail. Following recent moral dilemma research, we disentangled a common confound by manipulating the consequences of making concessions, the salient moral norm, and whether supporting concessions was the action or inaction default (e.g., Gawronski et al., 2017). The detailed presentation of the moral dilemma increased people's ability to systematically process the information (Chen & Chaiken, 1999), which led to overall lower support for the NCP than under conditions with no or incomplete information. 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. Traditionally, these moral principles were considered opposites, but do both alter support for concessions when manipulated independently in our studies (cf. Gawronski et al., 2017).

Our findings have important practical implications for policymakers. First, it appears that there are hostage situations in which people would be more approving of concessions than they would be in others. We found that people approve concessions more when the benefits of conceding outweigh the costs. When this is the case, conceding might be advisable (Mertes et al., 2020) and would likely find more support among voters. Second, our findings underline the importance of tailoring political communication (McNair, 2017). Communication acknowledging the government's responsibility to save the hostages' lives and evidence that making concessions will likely result in a safe hostage release (Mertes et al., 2020, 2021) may increase public support for conceding to terrorists in order to save the hostages. Also, providing sufficient information on the hostage situation in political communication could increase support for concessions by increasing people's ability to

systematically process the information that is available in a specific hostage-taking situation rather than resort to heuristics.

Our work may be limited by our exclusively American samples. As we noted above, 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.

Conclusion

The current research advances our knowledge of public support for government policy in terrorist hostage-takings. Peoples' perceptions of these policies depend on the information that people have available to make their decision. More detailed communication with a focus on the benefits may increase public support for concessions.

Open Science Practices Statement

We report how we determined our sample size, all data exclusions, all manipulations, and all measures (Simmons et al., 2012). Data collection for each individual study did not continue after data analysis. The sample sizes, exclusion criteria, hypotheses, and analyses for Studies 2 (https://osf.io/ubqvz/?view_only=ca8829c698fb449c8c4cda37a321501b) and 3 (https://osf.io/nszve/?view_only=68b18d4270ee416880f2a6a5e629ca95) were publicly preregistered. Deviations from the preregistrations are fully disclosed. Raw and processed data is available at https://osf.io/y9s4x/?view_only=0bea30e47dfb47e5a26ea7de0b221c33.

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Online Supplement

Exploratory Analyses

Perceived Credibility (Study 2)

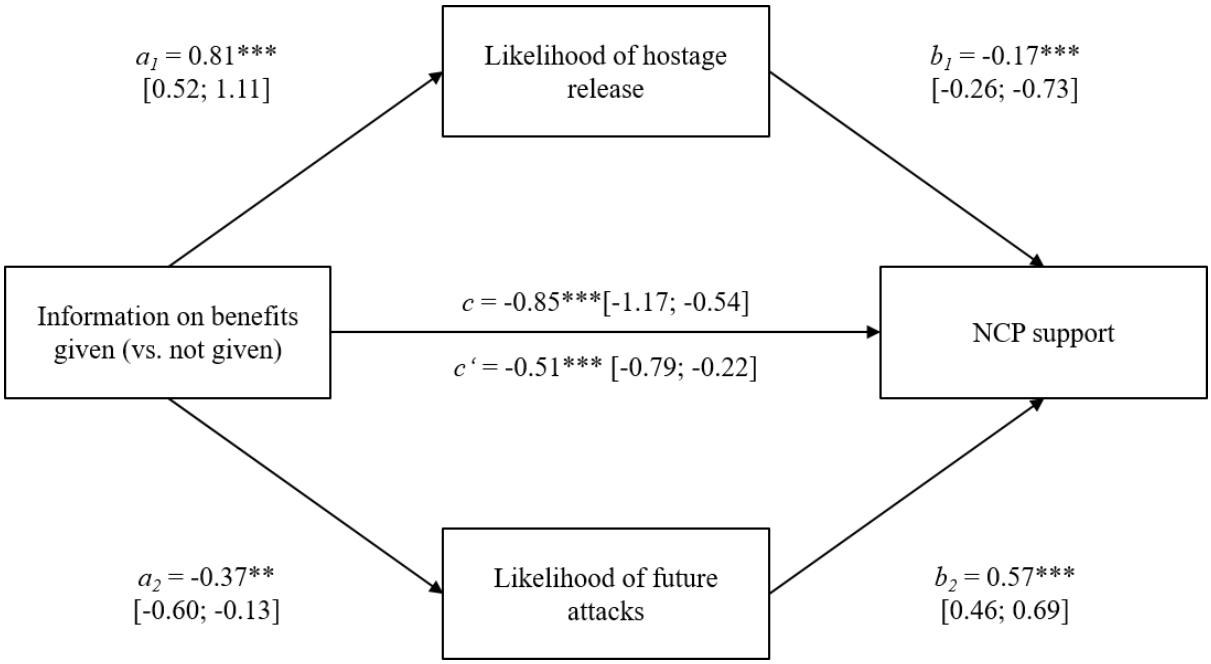
A bootstrapped *t*-test revealed that participants who received information on benefits (M = 5.31, SD = 1.26) found the information provided in the study to be less credible than participants who received no information on benefits (M = 5.74, SD = 1.16), $t(415) = -3.60$, $p = .002$, $d = -0.35$, 95% CI [0.19; 0.69]. Information on the costs did not affect perceived credibility. Thus, people doubt that terrorists will release the hostages after the government conceded to their demands, but not that terrorists will use the resources gained from concessions to execute further attacks.

Perceived Credibility (Study 3)

A bootstrapped *t*-test revealed that participants found the information in the scenario less credible when the benefits of concessions were greater than the costs (M = 4.96, SD = 1.38) than when the benefits were lower than the costs (M = 5.35, SD = 1.22), $t(827) = 4.37$, $p < .001$, $d = 0.30$, 95% CI [0.21; 0.57]. People apparently struggle to believe that concessions to terrorist hostage-takers might not result in future attacks, which is consistent with Study 2.

Figure A

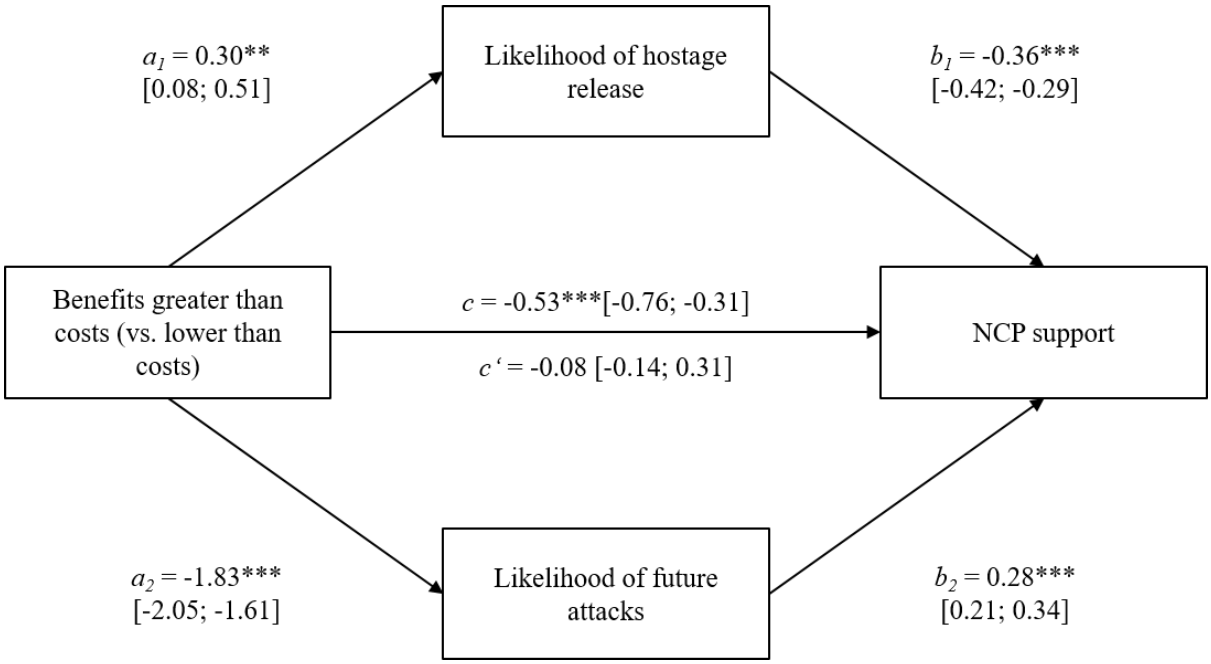
Exploratory Mediation Analysis from Study 2



Note. Mediation analyses conducted using model 4 of the PROCESS v3.5 macro (Hayes, 2018). Unstandardized path-coefficients reported with 95% confidence intervals in brackets. Confidence intervals based on 10000 bootstrap samples. ** $p < .01$, *** $p < .001$. $a_1 \times b_1$ = -0.13 [-0.24; -0.05], $a_2 \times b_2$ = -0.21 [-0.36; -0.07], total indirect effect = -0.35 [-0.53; -0.17].

Figure B

Exploratory Mediation Analysis from Study 3



Note. Mediation analyses conducted using model 4 of the PROCESS v3.5 macro (Hayes, 2018). Unstandardized path-coefficients reported with 95% confidence intervals in brackets. Confidence intervals based on 10000 bootstrap samples. ** $p < .01$, *** $p < .001$. $a_1 \times b_1$ = -0.11 [-0.19; -0.03], $a_2 \times b_2$ = -0.51 [-0.68; -0.36], total indirect effect = -0.61 [-0.80; -0.44].

General Discussion

In this current doctoral dissertation, I sought to advance the knowledge on the terrorist hostage dilemma by providing answers for two important research questions: (1) Is there a reliable relationship between authority concessions and hostage release in terrorist hostage-takings (e.g., Corsi, 1981; Friedland & Merari, 1992)? (2) What shapes people's support for the no-concessions policy (e.g., The White House, 2015)? I investigated these research questions in three articles comprising five studies. In the following pages, I will summarize the central findings of these studies, discuss overarching theoretical and practical implications, address critical limitations, and delineate ideas for future research.

Summary of Central Findings

In this subsection, I will summarize the central findings of the five studies. For an interpretation, see the sections on theoretical and practical implications below. The main finding of the first article was what we termed the *concession effect*: Authority concessions affect the number of (hostage) casualties in international terrorist hostage-takings that occurred between 1982 and 2005. Granting some or all (vs. none) of the terrorists' demands reduced the number of casualties among the hostages, but granting all rather than some demands did not incrementally decrease hostage casualties. Granting (vs. none or some) of the terrorists' demands further reduced the number of casualties overall. Another noteworthy finding is that the effect of authority concessions on (hostage) casualties was mediated via reciprocated concessions made by the terrorists. In conclusion, authority concessions lead to fewer casualties among the hostages and in general.

In the second article, I aimed to conduct a conceptual replication (e.g., LeBel et al., 2019) that sought to address the limitations of Article 1 and examine time and internationality as potential boundary conditions of the concession effect. Replicating an important finding of Article 1, a higher degree of ransom demand fulfillment was found to decrease the number of

casualties in hostage-taking situations.[11] As was discussed earlier (Article 2), the number of casualties is difficult to interpret because the circumstances of the reported deaths are unclear. Thus, in Article 2, a more informative criterion variable was used to reduce interpretational ambiguities: the outcome of the hostage situation. A higher degree of ransom demand fulfillment increased the likelihood of a safe hostage release. In conclusion, investigating data on more recent, domestic terrorist hostage-takings showed that the concession effect is timely stable and generalizes to terrorist hostage situations without international involvements.

Article 3 investigated support for the no-concessions policy in three studies. Its first study, a survey of U.S. American citizens, showed that overall support for the policy of denying terrorists concessions (The White House, 2015) is quite high. Mentioned reasons to support the no-concessions policy were manifold and mainly in line with existing research on the consequences of concessions. People named, for example, the need to deter future abductions (e.g., Brandt et al., 2016) and a general distrust of terrorists (cf. Bapat, 2006). In contrast, reasons to oppose the policy were less diverse and mentioned less frequently. Support for the no-concessions policy differed depending on which aspect of the hostage dilemma (costs vs. benefits) people focused on, with people focusing on the costs (vs. benefits) of concessions showing higher support for the policy. Only a fraction of the people had a more balanced view, showing that they were aware of both the positive and the negative consequences of the decision to concede.

Building on the findings from Article 3's Study 1, suggesting that people have, in general, an incomplete understanding of the hostage dilemma, Article 3's Study 2 was an experiment to investigate the influence of available information on support for the no-

[11] In Article 2, casualties were referred to as fatalities because that was the term originally used in the documentation of the Global Terrorism Database (START, 2019a, 2019b). Both terms refer to lives lost in the hostage situation. This includes hostages, terrorists, government officials, and other (unspecified) victims of the incident.

concessions policy. The main finding here was that providing people with information on the benefits of concessions (i.e., that concessions increase the likelihood of a safe hostage release and reduce casualties; Articles 1 and 2), decreased support for the no-concessions policy. Providing information on the costs (i.e., that concessions would lead to more abductions in the future; e.g., Brandt et al., 2016), however, did not affect policy support.

Article 3's third study investigated support for the no-concessions policy under conditions of full information. Following recommendations from recent moral dilemma research, people were presented with a terrorist hostage-taking scenario, in which the consequences of making concessions, the salient moral norms, and action (vs. inaction) as the default for supporting concessions were manipulated (e.g., Gawronski & Beer, 2017; Gawronski et al., 2017). Consequences affected all dimensions of support for concessions we assessed: When the benefits were greater (vs. lower) than the costs, people showed less support for the no-concessions policy, saw concessions as more appropriate, and were more likely to express intent to support concessions by signing (or refusing to sign) a petition. A prescriptive (vs. proscriptive) moral norm prescribing (vs. prohibiting) concessions increased the perceived appropriateness of concessions and the likelihood of expressing intent to support concessions in the petition. People were more likely to support concessions when they could do so by ignoring (vs. signing) the petition (e.g. Kahneman & Tversky, 1982; Gilovich & Medvec, 1995).

Theoretical Implications

The studies described in Articles 1 and 2 are grounded in social exchange theory, a comprehensive framework of related theories that explain how people behave in exchange situations (Blau, 2017; Foa, 1971; Homans, 1974; Mitchell et al., 2012; Thibaut & Kelley, 1959; 1978). Several extensions and modifications had to be made to the theory to use social exchange theory to predict the outcomes of terrorist hostage-takings. We extended Foa's

(1971) taxonomy of resources by defining hostages as a concrete resource that is highly valuable to the authorities, but not necessarily to the terrorists. We further defined terrorist hostage-takings within the boundaries of interdependence theory (Thibaut & Kelley, 1959; 1978), which describes how exchange behavior changes because of experienced gratification and satisfaction: Only the hostage-takers will initiate exchanges with the authorities because only they stand to gain from a successful exchange. Our findings on the concession effect largely support our hypotheses, which underlines the applicability of social exchange theory in extreme situations in general and terrorist hostage-takings in particular. Our findings also support the *rationality proposition* of social exchange theory (Homans, 1974) and, therefore, add to the growing literature challenging the assumption that terrorists are irrational (e.g., Borum, 2013; Corner & Gill, 2015; Fein & Vossekuil, 1999).

The research described in Article 2 advanced what we learned about the concession effect in Article 1 in several ways. A conceptual replication (Hüffmeier et al., 2016; LeBel et al., 2019) of the first study provided evidence for the stability of the concession effect. By showing that authority concessions increase the likelihood of a safe hostage release, we found evidence for a key proposition within our theoretical rationale: That the terrorists will actually complete the hostage exchange when concessions are made. Finally, by investigating an up-to-date dataset on domestic terrorist hostage-takings (START, 2019a), time and internationality (i.e., whether terrorists and authorities were of different nationalities or whether borders had to be crossed to execute the abduction) could be ruled out as boundary conditions of the concession effect.

Article 3 also has important theoretical implications because it provided insights into the origins of people's support of the no-concessions policy (e.g., The White House, 2015). The findings of Study 1 supported our proposition that most people have an incomplete representation of the hostage dilemma. People were either more aware of the negative

consequences than the positive consequences, or that these negative consequences are more influential to their decision-making, resulting in overall high levels of support for the no-concessions policy.

The second study shed light on how people's policy support changes depending on the information available to them. We grounded this study in the heuristic-systematic model of information processing (Chaiken & Ledgerwood, 2012; Chen & Chaiken, 1999). The results suggested that people process information on the benefits and costs of concessions differently. According to the heuristic-systematic model, people aspire to be confident in their judgement (Chaiken & Ledgerwood, 2012). Our findings suggest that information on the benefits of concessions challenge peoples' pre-existing negative beliefs about terrorist exchange behavior, while information on the costs of concessions do not. Therefore, people who receive information on the benefits (vs. costs) need to process this information more thoroughly to be confident in their decision. As a result, information on the benefits was found to decrease policy support, while information on the costs had no effect.

Study 3 disentangled a common confound in moral dilemma research: Traditionally, moral responses were either considered *utilitarian* (i.e., maximizing overall well-being) or *deontological* (i.e., adhering to norms) and these two moral principles were seen as polar opposites (Gawronski & Beer, 2017). Recent moral dilemma research addressed this confound by manipulating the consequences of making decisions (the benefits of taking action are greater vs. lower than the costs) and the salient moral norm (a prescriptive moral norm prescribing an action vs. a proscriptive moral norm prohibiting that action; e.g. Gawronski et al., 2017; Luke & Gawronski, 2021). Taking an action is considered utilitarian when the benefits of that action are greater than the costs. Taking an action is considered deontological when a prescriptive moral norm prescribes that action. Furthermore, recent moral dilemma research accounts for a general preference for action or inaction by analyzing

response patterns over many different moral dilemmas (e.g., Gawronski et al., 2017; Luke & Gawronski, 2021). As we were only interested in one moral dilemma—terrorist hostage-takings—we independently manipulated whether supporting concessions was the action (vs. inaction) default in addition to consequences and norms. Our findings showed that no-concessions policy support is mainly driven by utilitarian considerations (i.e., lower support for the policy, which means higher support for concessions, when the benefits of concessions are greater than the costs). People's perceptions of the appropriateness of concessions and intent to support concessions in a petition were driven by both utilitarian *and* deontological considerations (i.e., more perceived appropriateness of concessions and intent to support concessions when a prescriptive moral norm prescribed concessions). We further found supporting evidence for the action effect (Kahneman & Tversky, 1982; Gilovich & Medvec, 1995).

Practical Implications

As I said earlier, the goal of this doctoral dissertation is not to formulate universal action recommendations. Rather, I wanted to provide knowledge that authorities can use to make informed decisions. In the following paragraphs, I will discuss tentative practical implications that should always be viewed in concert with other short-term and long-term consequences as well as characteristics of the hostage situation at hand.

The decision to concede to terrorist hostage-takers can entail a variety of severe negative consequences. They can negatively affect the hostage economy (e.g., Borger et al., 2014; Callimachi, 2014a), lead to more abductions in the future (e.g., Brandt et al., 2016), help the terrorists in more than one way to achieve their goals (e.g., Schmid, 2011; Jenkins, 2018), and cause political repercussions (e.g., Scheuer, 1990; Toros, 2008). The potential downsides are so manifold that, if there was no real chance to save lives, conceding to terrorist hostage-takers would probably not even be worth considering. The concession effect

(Articles 1 and 2) provides overdue systematic evidence that making concessions can be a viable strategy to save the hostages and preserve life.

Of course, I do not argue that authorities should concede under any circumstances. Rather, I want to emphasize situations in which making concessions could be more advisable than in others. In kidnappings, authorities have typically fewer options than in other types of hostage-takings because the location of the hostages is unknown, which eliminates the possibility of a rescue mission (e.g., Faure & Zartman, 2010). Thus, conceding might be more advisable in kidnappings than in hijackings or barricade situations. Further, conceding might be more advisable when the benefits of concessions outweigh the costs. This could be the case in situations with larger numbers of hostages (e.g., Dugger, 2000) or when the hostages are of high political or strategical significance, as was the case in the Bergdahl exchange (e.g., Knowlton, 2014). While all human life should of course be considered equally valuable, in such cases, the political repercussions resulting from the hostages' deaths might be particularly high and concessions might serve as a way to prevent them. The benefits of conceding might also outweigh the costs if the demands are relatively easy to fulfill or the terrorists are not expected to engage in future abductions (cf. Article 3). This applies to both the government's and the citizens' dilemma. In other words, in hostage situations in which concessions might be the most advisable, the public might be most likely to support the government's decision to concede (Article 3).

The concession effect is in line with the notion that terrorists aim to build a reputation as reliable negotiators to further their long-term goals (Article 1 and 2; Bapat, 2006). This idea is further supported by anecdotal evidence. After the release of Sgt. Bowe Bergdahl, the Taliban published a video of the peaceful encounter between them and the U.S. military in which they safely handed over the hostage (Yan et al., 2014), suggesting that terrorists do not only act like reliable negotiators, but that they also want to make sure that a global audience

perceives them that way. Thus, taking into account a terrorist group's reputation when confronted with the decision of whether to concede to their demands might help reduce uncertainty in the decision making process.

If citizens disagree with their government's decision in a hostage-taking situation, then the government might face unfavorable changes in public opinion (cf. Pew Research Center, 2014; see also Faure, 2003) or a loss of voter support (McNair, 2017). Having to consider potential effects on public opinion might complicate a government's decision in hostage situations. This means that although transparency in political communication (e.g., McNair, 2017) is generally desirable, there may be situations in which transparency might be counterproductive. If a hostage situation takes place under the public radar, governments may be able to make an informed decision without having to worry about political repercussions. This ties in with prior research suggesting that, if possible, hostage negotiations should be conducted in secret (Faure & Zartman, 2010). If this is not possible, then the government has to factor in public opinion as a potential consequence. The findings presented in Article 3 might help predict public reactions to their decision. Tailoring political communication towards acknowledgement of the responsibility to save lives and evidence for the concession effect (Article 1 and 2) might further help mitigate political damage resulting from the decision to concede.

Limitations and Future Research

A first, important limitation affecting Articles 1 and 2 lies within the availability of data on terrorist hostage-takings in general. Currently, a number of databases recording data on terrorist events are in use (for a comprehensive comparison, see Sheehan, 2012). While the value of these databases as tools to research and understand the dynamics in and outcomes of terrorist hostage-takings cannot be overstated, data on terrorist events is by no means perfect. The reason for this lies within the data collection procedures employed by the

organizations maintaining these databases. Both the ITERATE and the GTD draw from publicly available, unclassified sources, such as news media reports, scholarly publications, books, journals, and released government documents (e.g. Flemming et al., 2008; START 2019b). Information that is not available in such sources cannot become part of the databases available to the scientific community. Consequently, there is an abundance of missing data affecting the research presented here in different ways. For instance, in both Article 1 and Article 2, preregistered hypotheses predicting the effects of authority concessions on property damages had to be dropped because, although technically part of the datasets, property damages are rarely reported and, thus, rarely recorded. Moreover, missing data on important control variables (e.g., number of hostages) prevented meaningful statistical analyses because of waning sample sizes when including said control variables. This spotlights a seeming paradox in which more and better data on terrorist hostage-takings would be desirable, but more opportunities to collect such data (i.e., more abductions) would be undesirable. The obvious solution lies in better documentation of the terrorist hostage situations that already take place, but remain unreported (Gilbert, 2018). Terrorism is undergoing constant change (e.g., Masters, 2008; START, 2019a). Therefore, future research should aim to replicate the findings of Article 1 and 2 when the recording of data on terrorist events has progressed.

The second limitation that was briefly touched upon in Article 1 is the relative neglect of ideological motivation. Masters (2008) describes three pure types of terrorist groups, which differ in their motivation and goals: Left-wing terrorists typically aim to bring about political change. Ethno-nationalist groups aim to establish the autonomy of an ethno-national group from a dominant ethno-national group. Right wing terrorism comprises terrorist organizations acting on principles of fundamentalism, racism, and cultism. These different kinds of terrorist groups differ in characteristics that might directly influence the findings of the research of this doctoral dissertation. For example, fundamentalist terrorist attacks kill on

average twice as many people as left-wing terrorist attacks (Masters, 2008). It is, thus, conceivable that fundamentalist groups are less reliable in their exchange behavior. Popular support for the no-concessions policy in a hostage taking might also depend on the ideological motivation of the terrorist group involved. After the attacks on the World Trade Center in 2001 (cf. Hartig & Doherty, 2021) and the execution of American journalist James Foley (Callimachi, 2014b), many Americans came to see fundamentalist groups such as Al-Qaeda and the Islamic State (ISIS) as major security threats to America (Pew Research Center, 2014). Media coverage frequently framed terrorists as irrational, which has been shown to lead people to advocate for military action rather than diplomacy (Pronin et al., 2006). As a result, people might support the no-concessions policy more when the perpetrators in a terrorist hostage situation are fundamentalist rather than left-wing or ethno-nationalist groups. Future research should investigate ideological motivation as a potential boundary condition of the findings presented here.

A third limitation that was touched upon in Article 2 and 3 is the neglect of culture. Cultural aspects, such as tightness/looseness (e.g., Gelfand et al., 2011), might influence terrorist exchange behavior: Tighter (vs. looser) cultures have stronger norms and lower tolerance for deviations against norms. Given that social exchanges depend on adherence to social norms, such as the norm of reciprocity (Gouldner, 1960), terrorist hostage-takers from tighter cultures might be more likely to release the hostages once they received concessions. Unfortunately, we were unable to test this prediction due to a lack of data. Even though cultural tightness/looseness has been investigated in many countries (Gelfand et al., 2011), measurements for the countries with the highest prevalence of terrorist hostage-takings are currently unavailable. As I mentioned above, the studies described in Article 3 might be limited by the exclusively U.S. American samples. The discussed possibility that U.S. Americans might be stronger supporters of the no-concessions policy raises the question of

generalizability of our findings to other countries. In sum, investigations into the effects of culture and nationality might be an interesting avenue for future research.

Concluding Summary

In my doctoral dissertation, I aimed to advance the theoretical and practical understanding of the terrorist hostage dilemma. I investigated the relationship between authority concessions and hostage release, showing that making concessions increases the likelihood of a safe release and prevents casualties (Article 1, 2). I further investigated what shapes people's support for the no-concessions policy showing that support for this policy is generally high (Article 3, Study 1), but decreases when people are provided with information on the benefits of concessions as unveiled in Article 1 and 2 (Article 3, Study 2). No-concessions policy support decreases when the benefits of conceding are greater than the costs (Article 3, Study 3). I hope that the theoretical developments described in the three articles of my doctoral dissertation can spark further psychological investigations into the dynamics and outcomes of terrorist hostage situations. Furthermore, I hope that the insights presented here can help authorities make evidence-based decisions and, thereby, help to mitigate the suffering caused by terrorist hostage-takings.

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List of Articles and Declaration of Author Contributions

Article 1

Mertes, M., Mazei, J., & Hüffmeier, J. (2020). “We Do Not Negotiate With Terrorists!” But What if We Did? *Peace and Conflict: Journal of Peace Psychology*, *26*(4), 437–448. https://doi.org/10.1037/pac0000446

Author Contributions

Marc Mertes and Joachim Hüffmeier designed this research. Marc Mertes processed the data. Marc Mertes and Jens Mazei analyzed the data. All authors interpreted the findings. Marc Mertes wrote the manuscript. Jens Mazei and Joachim Hüffmeier revised the draft. Marc Mertes implemented the revisions.

Article 2

Mertes, M., Mazei, J., Gemmecke, C., & Hüffmeier, J. (2021). Short-Term Effects of Authority Concessions to Terrorist Hostage-Takers: Stability and Generalizability of the Concession Effect. *Negotiation and Conflict Management Research.* https://lps.library.cmu.edu/NCMR/article/id/533/

Author Contributions

Marc Mertes, Corinna Gemmecke, and Joachim Hüffmeier designed this research. Marc Mertes and Corinna Gemmecke processed and analyzed the data. All authors interpreted the findings. Marc Mertes wrote the manuscript and Corinna Gemmecke wrote the first draft of the methods section. All authors revised the draft. Marc Mertes implemented the revisions.

Article 3

Mertes, M., Böhm, R., Hüffmeier, J. (2021). *Blow Hot and Cold: Popular Support for the No-Concessions Policy in Terrorist Hostage-Takings.* Published at https://psyarxiv.com/d9qp2. https://doi.org/10.31234/osf.io/d9qp2

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. Marc Mertes implemented the revisions.

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