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## Beyond deterrence: Reconceptualizing denial strategies and rethinking their emotional effects

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### ABSTRACT

Contrary to detailed work on deterrence by punishment, Western strategic thought about denial and its effects is conceptually muddled at the expense of effective strategy-making. This article seeks to reconceptualize denial and rethink its emotional effects. It defines denial as a strategy aimed at frustrating the adversary's military power and proposes four different denial logics: capability elimination, operational paralysis, tactical degradation, and strategic effect reduction. It then turns to the effects through which these denial logics generate favorable consequences, and singles out the emotions of despondency, resignation, fear, and disappointment as the key factors that mediate their impact. The article offers a framework that can help guide further theoretical reflection and empirical research, as well as inform the development of policies and strategies in today's world.

**KEYWORDS** Deterrence; denial; strategy; logic; emotion

The power to deny an opponent the ability to achieve its military objectives has always been an important component of the defensive postures of states. It has been instrumental in the defense of national polities not just by helping stave off external attack, but also by influencing the strategic calculus of actors before they launch an attack in the first place. Denial is thus not only relevant during war but can also help contribute to preventing war's outbreak. As such, understanding the power to deny—what it encompasses, how it generates effects, and which outcomes it leads to—is relevant to international security scholars and practitioners alike.

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Denial is usually discussed under the conceptual umbrella of deterrence. Traditionally, deterrence has been taken to refer to the act of dissuading an aggressor to engage in a course of action on the basis that “the costs and/or risks of that action ... outweigh its benefits” (George & Smoke, 1974, p. 11). The deterring party can inflict costs that far exceed what the aggressor can expect to achieve by their conquest or it can seek to frustrate the aggressor’s attack. The former has become known as deterrence by punishment (DBP), and the latter as deterrence by denial (DBD) (Snyder, 1961, pp. 14–15). DBP has attracted most of the attention (Freedman & Michaels, 2019). Western strategists have, for instance, focused on how to make credible threats (and how to muster both the capabilities and political will required to do so), how to establish and communicate proportional escalation ladders, and how to effectively impose punishment (e.g., Freedman, 2004; for an overview, see Freedman & Michaels, 2019; George & Smoke, 1974; Kahn, 1960, 1965; Schelling, 1966; Trachtenberg, 1989). DBD, by contrast, has traditionally garnered significantly less attention, mainly because throughout the Cold War era, deterrence was predominantly looked upon through the nuclear lens and therefore considered from the dynamics generated by Mutual Assured Destruction, while denial strategies played a subsidiary role (see also Wilner & Wenger, 2021, pp. 2–4).

The neglect of denial strategies represents a missed opportunity. The expansion of military domains and the renewed emphasis on multi-domain coercion requires us to reconsider the utility of denial strategies with a pair of fresh eyes (Adamsky, 2018). First, denial strategies do not depend on the conditions of the contemporary military-strategic context that are putting a strain on the effectiveness of DBP (Gartzke & Lindsay, 2019). These conditions include limited transparency (required for attribution) and complexity (required for clarity and predictability) and in some domains, such as cyber, a tilt towards the offensive with states investing more in offensive at the expense of defensive capabilities (Harknett & Nye, 2017; Sweijts & Zilincik, 2021). Second, and related to the first, denial strategies may also be less prone to misinterpretation because it is easier to signal possession of denial capabilities through exercises and demonstrations to the adversary than to convey your willingness to impose punishment after the fact (Montgomery, 2020). Third, denial capabilities leave parties with more options once deterrence fails because denial capabilities that support DBD are also useful for actual defense (Snyder, 1960). Fourth, denial strategies are an appealing option for those who cannot rely on extended deterrence arrangements with nuclear powers or those who have reason to doubt the effectiveness of such arrangements (Lebow & Stein, 1995; van Hooft, 2021). Fifth, and finally, denial strategies can be deployed to frustrate adversary’s military power along a wider geographical and temporal spectrum, both in and outside the conflict theater, as well as before, during, and after the adversary launches an attack.

Although recent work highlights denial strategies as a solution to a variety of challenges including not just land invasions, but also terrorism,

cyberattacks, and space attacks, the landscape surrounding denial and associated concepts remains muddled (Borghard & Lonergan, 2021; Klein, 2019; Mueller, 2018a; Wilner & Wenger, 2021). For much of its history, DBD has been predominantly conceived of in opposition to punishment, rather than as a standalone strategic concept. Due to the continuous conceptual extension of recent years, DBD now acts as an umbrella term for a wide variety of actions and mechanisms that share few similarities (Sawyer, 2021). This problem is exacerbated by conceptual issues surrounding deterrence more broadly, such as persistent disagreements about whether deterrence can involve the use of force, growing doubts about the notion that deterrence and compellence can be usefully distinguished in practice, and confusion about the emotional dynamics that are supposed to matter to the process (Bratton, 2005; Davis et al., 2021; Inbar & Shamir, 2014; Mazarr, 2018; Rid, 2012; Sperandei, 2006; Spiegeleire et al., 2020; Sweijs & Zilincik, 2021; Tor, 2017; Wilner, 2013; Zilincik & Duyvesteyn, 2021).

This article aims to conceptualize denial and its consequences. To accomplish this goal, it is necessary to unshackle denial from the traditional association with deterrence and compellence, and also to broaden the scope of its effects beyond fear. The former requires developing denial as a standalone concept with an appropriate definition and content. The latter requires theorizing alternative pathways to denial's conversion into favorable consequences, notably by identifying emotions other than fear that mediate the consequences of denial. By reconceptualizing denial and its effects, the article offers a framework to facilitate more structured theoretical reflection and empirical study of denial strategies and their effects, as well as the development of denial-based policies and strategies. It does so by canvassing insights from political science, strategic studies, and the emotion sciences, which are further illuminated using an assortment of examples drawn from historical practice. It is conceptual and exploratory in nature and does not purport to make any claims about the efficacy of specific policies. It outflanks the prevalent conceptual issues, draws attention to theoretical and practical diversity, provides grounds for practical evaluation of different courses of action, enables analytical clarity, and allows for tailoring denial actions to specific situations.

The article is structured as follows: it starts by conceptualizing denial strategy in general. On that basis, and in close consultation with the existing literature, it proposes four different logics through which denial works: *capability elimination*, *operational paralysis*, *tactical performance degradation*, and *strategic effect reduction*. These four logics are illustrated through examples from historical and contemporary practice. Subsequently, the article turns to the *effects* through which denial asserts its favorable consequences. It does so by identifying the ways in which different denial logics elicit different emotions that affect the adversary's calculus and behavior.

It spells out the effects of denial measures and considers the type of emotions they invoke as the key variable that mediates their impact. The article concludes with a summary of the key findings and contributions, as well as the identification of avenues for future research and practice.

### **Conceptualizing denial**

Informed by previous scholarship, this article defines denial as a strategy aimed at frustrating the adversary's military power (Art & Greenhill, 2018, p. 20; Betts, 2013, p. 88; Fowler, 2021, p. 261; Mearsheimer, 1983, p. 15; Pape, 1996, p. 10; Snyder, 1960, p. 14). Military power is "the ability to do something strategically useful" with armed forces or other instruments capable of damaging things or harming people (Gray, 2012, p. 9). This definition treats military power consciously as a broad concept that also includes terrorist and cyber attacks. While terrorists are seldom categorized as armed forces per se, they do employ violence for political purposes, which is why it is sensible to treat terrorist attacks as expressions of military power at least for the purposes of this article. With respect to cyber power, there are ongoing debates about whether it should be seen as a form of military power or whether it extends beyond the military domain (Chesney & Smeets, 2020). Regardless, many real-world actors leverage cyber tools as military instruments, and cyber denial receives ample attention in the deterrence literature.

This article conceptualizes denial as a grand strategic concept rather than a purely (military) strategic one because denial strategies can also contain nonmilitary efforts. As this article shows, some aspects of the adversary's military power can be frustrated through measures such as deception, propaganda, economic statecraft, and even education. At the same time, the proposed definition maintains a military-centric focus because military power is unique in that it can kill, destroy, or cause direct damage. Relatedly, the emotional effects generated through the employment of military power tend to be exceptional compared to those produced through other forms of power. Lower-order strategic concepts, such as attrition, annihilation, or paralysis, can all play a role in a denial strategy, either individually or in combination. In the context of a denial strategy, offense and defense and victory and defeat are relevant to the extent that they frustrate the adversary's military power. This conceptualization differentiates denial from other strategies such as punishment but also decapitation, which convey circumvention of the adversary's military power while targeting the adversary's population or leadership (Pape, 1996).

With denial conceptualized, it is possible to start disentangling the concept into its constituting elements. Previous authors have already recognized that denial operates according to various logics and thus can result from a broad pool of actions (Bennett, 2012; Borghard & Lonergan, 2021;

Pape, 1996; Smith & Talbot, 2008). These logics are separated by temporal and spatial dimensions concerning the military power's frustration. In terms of timing, it is possible to frustrate the adversary's military power *before it manifests, before engagement, during the actual confrontation, and even after it inflicts damage*. In terms of space, it is possible to frustrate the military power globally, in a theater, on the battlefield, and at one's home front. Based on these temporal and spatial differences, four distinct denial logics emerge: capability elimination, operational paralysis, tactical degradation, and strategic effect reduction (see Table 1). The terminology employed here is flexible and open to change as long as the terms capture the essence of the particular logic. In the upcoming pages, we unpack these different logics in greater detail.

### **Denial through capability elimination**

The first logic of denial works through capability elimination. The main purpose in this case is to prevent the adversary from having the capabilities to employ (a certain form of) military power. The desired end-result of capability elimination is a situation in which the adversary is incapable of employing that military power. For these reasons, in geospatial terms, the logic can have potentially global application and in a temporal sense, it takes place before the adversary employs military power. The extant scholarship has already pointed out many forms that this kind of denial can assume both in theory and practice, albeit with different foci and under various terms.

The logic of capability elimination is commonly associated with the concepts of preemption and prevention. For example, in what Sawyer calls "offensive deterrence," offense "draws heavily on the coercive concept of *pre-emption* [emphasis added]: removing an adversary's ability to make a decision to act or not by making it impossible for the adversary to act at all" (Sawyer, 2021, p. 103). The George W. Bush administration's decision to launch a preventive attack on Saddam Hussein ostensibly to prevent

**Table 1.** Denial logics along temporal and spatial dimensions.

Frustrating the adversary's military power	Before manifestation	Before confrontation	During engagement	After engagement
Global	Capability elimination			
Theater		Operational Paralysis		
Battlefield			Tactical degradation	
Homefront				Strategic effect reduction

him from developing and using Weapons of Mass Destruction (WMD) also falls under this logic (Wirtz, 2021, p. 131). Similarly, aspects of offensive deterrence may involve offensive strikes at the operational level to defeat adversary forces quickly and decisively before they can gain entry to a country (Heginbotham & Heim, 2015, p. 191). Israel's Six-Day War on Egypt and Syria in 1967, "initiated... to avert a coordinated assault by its neighbors," is an unambiguous example of a preemptive war (Mueller et al., 2006, p. 7).

However, capability elimination can also result from gradual rather than immediate destruction. "Mowing the grass," for instance, describes the military approach Israel has developed to degrade Hamas's military capabilities in the context of what it perceives as a "protracted intractable conflict with extremely hostile non-state entities" (Inbar & Shamir, 2014, p. 68). Israeli strategy primarily aims to destroy the adversary's capabilities when it sees that the adversary has rearmed and it expects tensions to flare up, to achieve temporary deterrence. This approach is qualitatively different from a counterinsurgency approach that seeks to decisively defeat the opponents. By "mowing the grass," Israel does not seek to win or solve the conflict but rather "wear down the enemy through constant, relentless pressure" (Inbar & Shamir, 2014, p. 73).

The practice of capability elimination has a long history, particularly in the context of land and naval warfare. On land, it manifests mainly through raiding operations, or short-term invasions of the adversary's territory with the purpose of eliminating the latter's resources rather than controlling the land (Jones, 1996). For example, during the Peloponnesian war, the Spartans conducted regular raids against Athenian territory while the Athenians conducted maritime attacks against Spartans and their allies (Thucydides, 1972). During the Middle Ages, the English conducted many so-called *chevauchée* against their enemies, notably France in the Hundred Years War (Madden, 2018). Similarly, the Hussites raided territories in central and eastern Europe to prevent the locals from supplying soldiers to their German adversaries (Housley, 2002, pp. 33–61). Naval examples involve privateering during the Great Power competition in the sixteenth and seventeenth centuries. For example, the capture of the entire Spanish treasure fleet by Dutch privateer Piet Heijn during the Eighty Year War represented a big blow to Spain's war machine (Wright, 1921, p. 616). In modern times, raiding often includes attacks against certain facilities. For example, during the Second World War, the allies used commandos to sabotage the Nazi nuclear program by attacking heavy water plants (Jorgensen, 2018). Hence, while the character of raiding has changed significantly, its essence remains the same (Elkus, 2011).

Capability elimination is also of relevance in the cyber domain. Preemptive cyber-attacks can be used against an opponent's missile systems based on

left-of-launch principles or alternatively against missile defenses to suppress it “prior to, or in conjunction with, preemptive strikes against opposed military forces” (Cimbala, 2017, p. 199). They can also be used to eliminate an adversary’s capabilities, such as for instance with Stuxnet, the cyberweapon designed by Israel and the United States to sabotage Iranian nuclear facilities, as a case in point (Nakashima & Warrick, 2012). Persistent engagement also builds upon this logic, as it presupposes permanent offensive employment of cyber power to hinder the adversary’s ability to conduct cyberattacks (Schneider, 2019).

Air power is particularly prone to the reliance on capability elimination. Mueller et al. call this “operational preemption” to reduce specific enemy capabilities before these can be used for an attack (Mueller et al., 2006, p. xii). Operational preemption is thus similar to Robert Pape’s concept of “strategic interdiction” which involves large scale military action to destroy the opponent’s war material (Pape, 1996, p. 75). As Pape (1996, pp. 311–313) points out, the allied attacks against the Ruhr area (the main source of German coal and steel) and Germany’s transportation system after September 1944 had devastating effects on its capacity to generate military power.

In the context of counterterrorism, “disrupting organizational recruitment and maintenance, training, access to weapons and sanctuary, communications, finance, and other resources needed to undertake hostile actions” are also seen as effective ways to preempt terror attacks by interdicting the necessary operational and organizational processes (Smith & Talbot, 2008, p. 54). The delegitimization of terrorist organizations drains the pool of potential terrorist recruits denying them access to human resources (Gearson, 2012). Besides the targeted killing of terrorist leaders, U.S. counterterrorism strategy of this century has also included efforts to deny terrorists territory in order to prevent them from sustaining operations (Anderson, 2013, pp. 1–2).

### ***Denial through operational paralysis***

The second logic of denial works through operational paralysis. The main purpose is to prevent the adversary’s military power from reaching its target. The desired end-result is a situation in which the adversary’s military power is stuck. This form of denial again involves the offensive employment of military power, although some defensive measures can also make the adversary’s movements more difficult. Concerning timing, this denial logic takes place after the adversary’s attack has been launched but before it reaches the potential target. For these reasons, the geospatial aspect of this logic mostly concerns the specific theater of war. Again, existing scholarship has already theorized ways of achieving this denial logic under different names.

Snyder's definition implicitly follows this logic with "deterrence by denial [being] accomplished by having military forces which can block the enemy's military forces from making territorial gains" (Snyder, 1960, p. 163). A case in point is India which, seeking to maintain the status-quo on the Sino-Indian border, deployed troops in difficult mountainous terrain to deny China "territorial gains along the Himalayan frontier by fighting a battle of attrition" (Joshi & Mukherjee, 2019, p. 29). Even though initial deterrence failed, and China eventually attacked, its People's Liberation Army was unable to make inroads into India's territory, and subsequently retreated, in the September 1967 confrontations (Ibid, 29).

The logic of operational paralysis has an old tradition, particularly in the context of land and sea warfare. In Ancient Greece, one of the more famous examples concerns the repeated attempts of major powers to conquer or at least control the city of Megara, located at the entry point to the Corinth Isthmus. Whoever controlled this city was able to block any advance of land forces from the Peloponnese to mainland Greece and vice versa. Since the Athenians were usually at a disadvantage against the Spartans in regular battles, they made great efforts to control Megara through a combination of subversion and military attacks (Wick & Wick, 1979). The Greeks were also very much aware of the potential of sea power to block the adversary's ports in order to prevent them from getting their ships to sea (Rahe, 2016).

More recent examples also abound. British naval blockades, including against Germany from 1914 onwards, hindered the opponent's ability to project military power on sea (Black, 2017, p. 48). Relatedly, submarines gradually became particularly useful for paralyzing the opponent's movements (Black, 2017, p. 65). The rationale behind AUKUS, the recent defense pact between Australia, the United Kingdom and the United States, follows this logic because the provided nuclear submarines enable Australia to execute a strategy of area denial (Lockyer & Cohen, 2017, p. 424). During the 2022 Russian-Ukrainian war, Ukraine asked Turkey to close off the Bosphorus and Dardanelles Straits for military vessels and thus to effectively hinder Russia's ability to project naval power to and from the Black Sea in line with the 1936 Convention of Montreux (after hesitation Turkey complied with this request) (Michaelson, 2022). But the logic equally applies to land warfare. Grygiel (2015), for example, has proposed that NATO frontline states should develop offensive military capabilities to strike targets inside Russia, to frustrate the latter's logistics during war.

Operational paralysis has also become popular amongst air power theorists, who recommend attacking supply and communication lines and destroy routes to cripple the adversary's movement. Pape's concept of "operational interdiction" seeks to paralyze the adversary's operational performance by attacking their rear (Pape, 1996, p. 72). In the 1980s, for example, NATO

envisioned “follow-on-forces attack” strategy that aimed at holding the front-line against the Warsaw Pact’s ground troops, while simultaneously attacking reinforcements with airstrikes (U.S. Congress, 1987, p. 3). As Pape points out, during the 1990–1991 Gulf War, Operation Desert Storm successfully employed this strategy of interdiction. Following the invasion of Kuwait, the coalition’s air attacks hindered Iraqi’s ability to reinforce the frontline positions (Pape, 1996, p. 246).

In contemporary strategic parlance, operational paralysis is often discussed under the label of anti-access measures (Tangredi, 2018). Initially, Western strategists ascribed the use of these measures to China and Russia, but they now increasingly advocate for the NATO states to adopt similar measures (Bonds et al., 2017). In fact, following the Russian invasion of Ukraine, NATO has been putting more emphasis on such an approach on its Eastern flank by increasing its multinational battalion size groups from four to eight, while it also made it a cornerstone of its new Strategic Concept (NATO, 2022, p. 6).

Applications of operational paralysis are also singled out in counterterrorism. The essence here is to intercept terrorists before they reach their targets. The concept “denial of opportunity” describes how acts of terrorism can be prevented by denying terrorist access to either weapons or their targets—or both—through efforts to obstruct their movement, for instance through the introduction of airport controls after the 9/11 attacks (Smith & Talbot, 2008, p. 56).

### ***Denial through the degradation of tactical performance***

The third denial logic works through the degradation of tactical performance. The main purpose is to make it more difficult for the adversary’s attack to inflict damage on the target once the adversary’s attack reaches the target. The desired end-result here is a situation in which the adversary has no chance of achieving victory. The logic usually relies predominantly on defensive actions, but can also contain some offensive elements. Consequently, the geospatial dimension of this logic is local, meaning the location where the two sides engage in confrontation. The temporal dimension concerns the moment of confrontation. As we will show, this logic has also already been explored across literature dealing with coercion.

Across different domains, this logic manifests in the forms of various defenses, from predominantly passive ones to more active ones (Freedman, 2004, p. 37). In general, passive defenses aim to reduce the amount of damage the adversary’s attack does when it connects with the target. In the context of land warfare, this manifests itself in the buildup of fortified places that make it harder for the adversary to launch a successful assault. Historically, this logic guided the building of castle walls, fortifications,

water ditches, and palisades. In more recent times, it led to the erection of massive fortification lines across all of Europe, most infamously exemplified by the French Maginot line to force Germans to fight at a disadvantage. Fortifications remain relevant in the conduct of contemporary warfare, whether in the form of protective concrete walls in counterinsurgency campaigns or as roadblocks in counterterrorism efforts (Betz, 2018). Therefore, degradation of tactical performance through passive defenses is not just a relic of a distant past.

Active defenses work by destroying the adversary's attack at the contact point. While the logic here is to preserve the target, it necessarily contains some offensive elements that destroy the attacking force. Throughout history, defenders have used both melee and range weapons for this purpose, although the latter have always been preferred because they allowed the defenders to destroy the attacking force from a position of relative safety. In ancient times, javelins, slings, and bows and arrows served the purpose, later on joined by more sophisticated siege engines. In the late Middle Ages, artillery arrived on the battlefields gradually becoming one of the most effective means to destroy the attacking force. Modern missile defense systems work according to the same logic, as do air and coastal defenses (Hynek, 2010). Indeed, many of these active defense systems have now become popular, in theory and in practice, under the label of area-denial capabilities. Just as with anti-access measures, Western analysts first ascribed the use of area denial capabilities to their adversaries, particularly China, but now they advocate their adoption for deterrence purposes (Gholz et al., 2019).

Mearsheimer (1983) points out that defenses can also take more dynamic forms, such as mobile defense or defense in depth. In the first case, the defender's forces maneuver to attack the adversary's force from a position of local advantage. In the latter case, advancing attacking forces have to fight several subsequent battles against strongly positioned defenders which gradually depletes their strength (Mearsheimer, 1983, pp. 49–50). Luttwak (1979) has famously suggested that Romans employed mobile defense consisting of a series of fortified points during the third and fourth centuries A.D. While deterrence theorists tend to discuss this type of denial mainly in relation to land warfare, it is also applicable to other contexts, including sea warfare. During the Peloponnesian war, Athenians through defensive maneuvering were able to defeat much larger enemy naval forces, as the victories of Athenian admiral Phormio demonstrate (Thucydides, 1972, book 2, 79–94). In more modern times, the deployment of aircraft carrier strike groups can function as a form of mobile defense in support of allies, as the United States dispatch of two aircraft carriers to the Taiwan Straits during the Taiwan Straits Crisis in 1996 demonstrates (Porch, 1999). Similarly, submarines can be, and have been, used to maneuver defensively and strike against the opposing navy from a position of advantage.

Meanwhile, airpower theorists have advocated for tapping into the offensive potential of air forces. Specifically, air forces are to attack the adversary's land forces on the battlefield, in support of their own ground forces. As Pape (1996) explains, air power was principally used in this way during the First World War (although this was really more of a large-scale experiment in practice without clear doctrinal guidance). Only in the inter-war period did theorists develop strategic concepts that would guide the synergistic integration of air and land forces on the battlefield (Pape, 1996, p. 70). On the defensive side, today the Ukrainian use of combined arms and the use of unmanned systems guided by dispersed units have been effective at tactically degrading Russian invasion forces. Contemporary cross domain theorists emphasize that the employment of air-power makes it difficult for the adversary to employ the principle of mass, while the employment of land power hinders the use of effective dispersion, putting them in into the unenviable position of always suffering severe consequences regardless of the choice they make (Haun, 2019, pp. 144–162).

Cyber power theorists, including Gartzke and Lindsay (2015), explain how this denial logic also relies on deception. Those seeking to degrade the adversary's conquest in the digital realm may deceive the invader as to the security of the specific files. The adversary may get his hands on the desired files but at the same time contract dangerous malware. Conversely, deception can also provoke the perception that the whole information system contains traps motivating the adversary to be overly cautious and slow (Gartzke & Lindsay, 2015, pp. 338–339).

### ***Denial through the reduction of strategic effect***

The final logic of denial works through the reduction of strategic effect. The main purpose is to make the adversary's military power irrelevant even if the latter succeeds in harming its target. The desired end-state is a situation in which the adversary's exercise of military power does not produce benefits. This variant relies predominantly on the defensive employment of power for the aim is to preserve rather than to conquer. This denial logic usually takes place at the denier's home front and after the damage has been done. Previous scholarship has already explored several aspects of this logic.

The logic has a long history, particularly in the context of land and naval warfare. For instance, some countries have historically relied on the defensive concept of resistance. The key assumption here is that weaker actors will continue fighting and resisting the invader even when their conventional forces get overwhelmed. In essence, this logic is about making it difficult and costly for the adversary to control conquered territory (Mitchell, 2015, pp. 124–125). One of the logic's manifestations is the "poisoned-shrimp strategy," which Singapore pursued in the 1960s and 1970s (Lam, 2020,

p. 753). This notion is gaining popularity in the Northern European context. Some strategists now even argue for small states to completely transform their forces into irregular ones to facilitate fierce resistance after an attack (Fabian, 2020).

Another incarnation of this logic is the destruction of whatever the adversary desires to conquer. Wirtz observes that denial can also be about destroying “the bone of contention” (Wirtz, 2018, p. 70). Figuratively speaking, it involves tearing off one’s own arm or destroying the goose with the eggs. Historically, scorched earth tactics are perhaps the best example of this phenomenon. Russians have used this approach against many land invaders, most famously against the Swedes in the early eighteenth century and against Napoleon a century later (Mikaberidze, 2016). As a result, these invaders were unable to capitalize on the territory they conquered and eventually had to abandon their efforts. Still, such an approach is almost always harmful to the one employing it and hence not too common.

In the more recently exploited domains of cyber space and space, this logic is most prevalent in the form of resilience. Resilience involves a system’s ability to keep functioning despite being challenged. It is about recovering from attacks and maintaining key functions. Resilience is often considered to be particularly useful in cyber space because usually at least some of the adversary’s attacks get through, no matter the defender’s attempts to thwart them. Martin Libicki (2021) points out that cyber resilience can be achieved by developing redundant capacities for emergency scenarios, by systems diversification, or by “loose coupling,” which “helps insulate complex systems against cascading failure through a combination of slack and circuit-breakers; this permits downstream systems to be separated from shocks in upstream systems” (Libicki, 2021, p. 206). Space deterrence theorists also consider resilience to be essential in reducing the strategic effects because space objects are vulnerable and difficult to defend. For instance, Theresa Hitchens and Joan Johnson-Freese argue “mission assurance” can be achieved by “offload[ing] some mission capabilities provided by satellite systems to non-space-based platforms and systems” (Hitchens & Johnson-Freese, 2016, p. 39).

However, resilience can also work in more traditional defensive contexts. Murray (2008, p. 15) has proposed that Taiwan should “build redundancies into critical infrastructure” to withstand Chinese attacks, including “a long-range precision bombardment.” Murray also suggests that Taiwan prepares whatever may be necessary “to attend to the needs of its citizens unassisted for an extended period” (Murray, 2008, p. 15).

Mueller has proposed that air power can uniquely contribute to resilience in strategic practice. Air forces can sustain certain locations and positions that would otherwise have to surrender to the adversary, as exemplified by the allied airlift in Berlin in 1948–1949 (Mueller, 2018b, p. 257). Given

that siege warfare remains prevalent also in contemporary warfare, it is likely that such efforts will also recur in today's security environment (Fox, 2021).

The counter-terrorist literature once again makes relevant theoretical contributions to the reduction of strategic effect logic. One of the ideas put forward is to reduce the psychological effects of terrorist attacks, notably the collective emotions of fear and anger that could drive the adoption of excessive policy responses in the attack's aftermath. Emanuel Adler has labeled this approach "defusing by denial" aimed at "preventing provocateurs from dragging social actors into using force against them" (Adler, 2010, p. 202). A key feature here is to educate society about the negative consequences of overreaction (Adler, 2010, p. 222). Smith and Talbot argue that this kind of denial is about reducing the "psychological vulnerability of the target" in order to "mute the effects of terrorism" (Smith & Talbot, 2008, pp. 58–59). The distinction between tactical and strategic denial follows this logic (Kroenig & Pavel, 2012). Tactical denial is about denying an opponent the direct impact of their action, strategic denial is about denying the political benefits that they expect to derive from it. The latter includes the notion not to give in to the terrorists' demands and not even negotiating with them (Kroenig & Pavel, 2012, p. 32). Many Western governments have officially taken this stance, though they certainly not always abide by it in practice. However, this denial logic often fails to create the desired effects because negotiation and government's concessions are but two of the many potential benefits terrorists can derive from their attacks (Ginges, 1997).

### **Denial: Effects and consequences**

Thus far our discussion has centered on denial and has largely sidestepped the question of its consequences. Yet it is the consequences conveyed by actual or potential denial which is at the center piece of current scholarly and professional debate. Denial itself merely imposes a situation that, in turn, has to generate effects if it is to convert into favorable consequences, such as such as decreasing the adversary's will to engage in hostile behavior. The effects of denial are crucial because they constitute the core component of "defeat mechanisms" or "causal theories" through which denial strategies matter to the outcomes of adversarial interactions (Hoffman, 2021; Jakobsen, 2022). However, since there are multiple denial logics, it is fair to assume each of these generates different effects that meet with different consequences.

The early attempts to capture denial's effects were rooted in the rational choice theory. These attempts ascribed great importance to cost-benefit equation in the decision-making context. For example, Snyder (1960, pp. 14–15) argued that DBD mainly works by decreasing the adversary's

chance of obtaining the desired benefits whereas DBP primarily works by increasing the costs associated with hostile actions. However, this conceptualization of DBD has proven inadequate. As Snyder himself recognized, and as many of the reviewed concepts indicate, DBD can relate to costs as much as it does to benefits (Snyder, 1960, p. 15) The bigger issue is that rational choice theory fundamentally misconstrues the complexity of human decision-making and behavior (Lebow & Stein, 1989). Nonetheless, even the crude conception of denial's effects rooted in rational choice theory already indicates that distinct denial logics generate consequences differently. For instance, capability elimination increases costs at least as much as it inhibits the achievement of benefits, whereas strategic effect reduction often only hinders the attainment of benefits, without incurring any serious costs.

Subsequently, scholarship on deterrence and associated concepts progressed to treat the effects with more nuance. Research on cognitive biases has been particularly influential in this regard. Scholars such as Jervis, Lebow, and Stein incorporated insights from psychology to their explanations of how actions in the real-world impact political leaders' psychology (Jervis et al., 1985). This strain of thought, which revolutionized deterrence scholarship in the 1970s and 1980s, also indicates that distinct denial logics inspire different psychological effects. Take the example of prospect theory which helps explain how and why people often decide irrationally (Tversky & Kahneman, 1992). Essentially, prospect theory posits that people value potential gains and losses differently. In general, people dread losses more than they desire gains. Hence, they are willing to risk more to avoid losses rather than to acquire gains (Tversky & Kahneman, 1992). This deduction implies that the adversary is likely to weigh risk differently when presented with, for example, strategic effect reduction as opposed to capability elimination. Strategic effect reduction relates more to gains while capability elimination conveys loss. Therefore, the adversary may be prone to risk more, and therefore be more likely to fight, when threatened with capability elimination as opposed to strategic effect reduction. From this perspective, strategic effect reduction likely generates a more favorable consequence than mere capability elimination.

However, cognitive biases do not tell the entire, nor the most accurate story behind denial and its effects. It turns out, emotions play a vital role too. In fact, emotions matter so much that, at least in the dynamic context of adversarial interactions, they can overcome the situationally determined risk aversion predicted by prospect theory but also particular behaviors predicted by the rational choice theory (Pauly & McDermott, 2023; Stein & Lotan, 2019). In fact, as this article argues based on a growing body of emotion sciences scholarship, emotions provide a more nuanced explanation for human behavior in adversarial interactions than psychological

mechanisms highlighted in previous research. Recent research on emotions then complements but also supersedes previous psychological scholarship and offers grounds for a systematic re-exploration of denial's consequences. Over the last couple of decades, psychology and neuroscience have shown that emotions matter greatly to all aspects of human life, especially in decision-making and behavior. Emotions shape perceptions, judgements and thoughts and motivate decision-makers to deal with a situation through a portfolio of possible actions (Lerner et al., 2015). At the same time, emotions do not determine behavior, they merely influence it by synchronizing different mechanisms to deal with the situation at hand (Tooby & Cosmides, 2008). The resulting behavior depends on many circumstantial factors, with emotions being only one of them, although an important one (Frijda, 2004). Hence, emotions shape how we interact with the world, but they do not dictate the exact character of that interaction. They may motivate both poor and great choices, depending on whether their character suits the situations that inspire them (Scherer, 2011; Seo & Barrett, 2007). The bottom line is that people simply do not make any meaningful choices, reasonable or unreasonable ones, without the influence of emotions (Damasio, 2005).

Building upon these findings, scholarship in international relations and strategic studies has developed emotion-centric models, which describe how it is possible to decrease the adversary's will to fight by manipulating their emotions (Markwica, 2018). Specifically, scholars have shown that emotions beyond fear can fulfill this task, notably emotions such as sadness but also happiness (Zilincik & Duyvesteyn, 2021). This trend ties back to observations made in existing deterrence scholarship, which proposed that deterrence by denial, as opposed to deterrence by punishment, is not necessarily tied to fear (Quinlan, 2004, pp. 13–14). Others have proposed that denial influences the adversary through the inculcation of “hopelessness”, rather than fear (Johnson et al., 2003, p. 17). Yet again, given the multiplicity of denial logics, it is unlikely that any one emotion, being it fear or hopelessness, explains all scenarios. Instead, it is more likely that each denial logic is associated with a set of different emotions that, in turn, can generate favorable effects, i.e., to decrease the adversary's willingness to engage in hostile behavior. We consider here the potential emotional effects of these logics on the political and military leadership of the adversary while acknowledging that emotional effects may be context dependent and may vary across cultures and personality types (van Hemert et al., 2007).

In order to tie distinct denial logics with their emotional effects, we first need to understand how emotions emerge and affect human behavior. Emotions provide adaptive mechanisms to the situations people encounter (Tooby & Cosmides, 2008). Hence, changes in situations can inspire emotions, especially if these changes matter to people's concerns (Brosch et al., 2010). It is the appraisal of the situation that matters the most for

emotion emergence (Roseman & Smith, 2001). While there is room for subjective interpretation of each situation, some situations are nonetheless more likely to inspire certain emotions than others. By implication, the adversary is likely to feel different emotions based on the character of the denial situation they are presented with. The subsequent emotional experience, whether real or merely anticipated, can then decrease the adversary's will to fight, and ultimately their decisions about the conduct of aggression, by affecting their cognitive processes and behavior. Emotions act as amplifiers of the original appraisals, they confirm and propagate these appraisals and even make us see the whole world through these lens (DeSteno et al., 2000; Druckman & McDermott, 2008; Lerner & Keltner, 2001). Equally importantly, emotions convey a motivational urge to act in a certain way to deal with the situation (Frijda, 1988, p. 351). Let us now look at how these emotional effects may play out in case of each denial logic.

Capability elimination presents the adversary with a real or potential situation in which they lose some of the resources necessary, or at least desirable, for employing military power. Hence the adversary may appraise the situation as a real or potential loss, which is the key appraisal characteristic of emotions such as sadness and especially its subset of despondency (Carver & Scheier, 2013, pp. 187–188; Lazarus, 2001, p. 64). This emotional experience produces a pessimistic outlook concerning the evolving situation (Oatley, 2000, p. 94; Wright & Bower, 1992). What may have initially looked like an easy task, now looks hardly possible. Embarking on a war suddenly seems less attractive. The inculcated pessimism makes the adversary reconsider their original plans (Karnaze & Levine, 2018). Zilincik (2022b, pp. 9–10) describes how despondency, or sadness more broadly, inspired through capability elimination may explain the Roman decision to abandon further territorial conquest in the early first century BC. In sum, capability elimination provokes the appraisals of loss and these can turn into despondency, which promotes pessimism and motivates the adversary to abstain from their original objective, in this case aggression.

The situation associated with real or potential operational paralysis is different. There is no inherent prospect of loss here for the adversary. The adversary's armed forces may get stuck, but they may still avoid harm. The main problem here is that these forces cannot make any meaningful move toward their original objective. Consequently, the adversary may appraise the whole situation as too difficult to resolve, which is characteristic of resignation (Yih et al., 2020). The feeling of resignation again confirms and propagates the original appraisal and motivates the adversary to give up the aggression. Essentially, resignation motivates the adversary to embrace the “acceptance of that which cannot be changed” (Ellsworth & Smith, 1988, p. 298). For illustration, resignation could partly explain why Mathias Corvinus temporarily abandoned his attempts to conquer

Bohemia after George of Podebrady outmaneuvered him and blocked all the meaningful pathways to conquest in the late fifteenth century (Frankenberger, 1960, pp. 102–104). Hence, in this case, operational paralysis provokes appraisals of pathways to success being blocked, while resignation confirms these appraisals and motivates the adversary to eschew the aggression.

Tactical performance degradation connotes yet another type of situation. Here the adversary faces, or expects to face, a deteriorating situation on the battlefield. From the aggressor's perspective, the result of battle is never certain to begin with, but it can seem increasingly uncertain when the other party makes the fighting unexpectedly more difficult for the aggressor's forces. Uncertainty, associated with a threatening situation, is a key appraisal associated with the emergence of fear (Smith & Ellsworth, 1985, p. 834). Once the adversary gets scared, they become even more pessimistic about the prospect of victory in battle. This is because fear propagates risk aversion perceptions and overall pessimism about the future (Lerner & Keltner, 2001). Ultimately, fear may motivate the adversary to abstain from the aggression altogether to avoid the threatening situation. Zilincik and Pikner (2021, pp. 161–162) suggest that fear may have been responsible for Gustav Adolph's II reluctance to attack Albrecht of Wallenstein's fortified position during the Thirty Years War. Hence, degradation of tactical performance provokes the appraisals of uncertainty and threat, while the ensuing fear amplifies these appraisals, makes the adversary more pessimistic, and motivates it to avoid the aggression if possible.

Finally, reduction of strategic effect implies a situation different from other denial logics. In this situation, the adversary can employ their forces relatively freely, yet such behavior does not result in the desired consequences. The adversary realizes that its performance fails to live up to its initial expectations. This appraisal characterizes the emotion of disappointment (Dijk & Zeelenberg, 2002). The emotional experience of disappointment “involves feeling powerless” and conveys “a tendency to do nothing” (Zeelenberg et al., 1998, p. 228). Disappointment thus motivates abandonment of the adversarial efforts because they fail to deliver. Building upon Mueller's (2018b, p. 257) example of the allied airlift, the Soviet termination of the Berlin blockade can be attributed to the emotion of disappointment concerning the continuation of endeavor that was failing to deliver as expected. Therefore, the reduction of strategic effect induces the appraisal of an unexpectedly poor performance, which effectuates disappointment, and consequently dissuades from aggression.

The proposed pathways of emotional effects are not mutually exclusionary. Although each denial logic can inspire a specific emotion, this does not preclude the emergence of other emotions that in turn affect the decision-making process. In fact, strategic practice is often so complicated

and messy that the adversary likely experiences many different emotions simultaneously or sequentially (Zilincik, 2022a). This is especially true for situations in which multiple denial logics take place in quick succession. Some of the emotions may hinder each other's effects, while others may reinforce each other (Pe & Kuppens, 2012). Research on this sort of complex emotional effects in the context of international security is in its infancy (Beauregard, 2022). It is therefore too early to reach any strong conclusions on the matter. At best, we can speculate that emotions such as disappointment, resignation, and despondency can amplify each other's cognitive and motivational tendencies because these are so similar. Fear, in turn, is a more complicated emotion because it can both increase and decrease the adversary's willingness to fight. Perhaps the experience of one or multiple of the other emotions can tilt fear's effects in a different direction but the reverse may also be possible. Therefore, the relationships proposed here certainly provide the basis for further analysis, but should not be taken as linear relationships that exist in a vacuum.

It is also imperative to acknowledge that denial strategies may generate undesired emotional effects, and, therefore, meet with ditto undesired behavioral consequences on the adversary's side. Capability elimination can elicit hatred, especially if it takes the form of protracted conflict that involves the killing of people over a prolonged period of time (Halperin, 2008). Hatred, in turn, can motivate people to fight on with no regard to personal losses (Fischer et al., 2018). Operational paralysis in virtually any form can make the adversary angry, since by definition it makes it difficult for the latter to achieve their objectives. Anger makes people optimistic about their chances to win and it motivates bold and aggressive, even vengeful behavior rather than restraint (Lerner & Tiedens, 2006). Tactical performance degradation can easily inspire fear that motivates the adversary to fight rather than abstain from fighting (Steimer, 2002). The adversary may worry about their situation getting worse with time and decide to attack as soon as possible to increase their chances of success. Strategic effect reduction can inspire humiliation or anticipation of shame when the adversary's overall conduct is extraordinarily poor compared to initial expectations (Elshout et al., 2017). The adversary may then want to sustain or even increase their efforts in order to avoid these emotions (Markwica, 2018). Alternatively strategic effect reduction produces no emotional effects at all simply because the adversary fails to notice the effort, especially if it concerns more subtle actions such as public education concerning the dangers of terrorist attacks, or concealed defenses. Hence, while this article focuses on the favorable emotional effects of denial, it is worth bearing in mind that denial can also inspire emotions detrimental or irrelevant to the overall effort.

From a scholarly perspective, the value of the proposed emotions lens resides in the explanation of how denial leads to consequences by identifying

the causal mechanisms through which such attempts affect the outcome. From a practitioners' perspective, the focus on emotions allows professionals to better anticipate the effects of their actions in adversarial interactions. It also allows for the tailoring of all efforts, military and nonmilitary, to increase the chances of inducing emotions that are most appropriate to the situation and lead to the desired outcomes. More generally, the emotion lens provide an opportunity to devise more elaborate "strategic scripts," meaning "stories about the future" (Freedman, 2013, pp. 620–621). Instead of assuming that actions will lead to success only by instilling fear in the adversary, practitioners can develop more refined theories of success. Table 2 summarizes the logic.

If our argument is correct, and each denial logic in fact generates consequences through different emotions, then current strategic theory is both incomplete and inadequate because it simply does not captures the complexity of decision making in practice. This then should drive the need for further refinement of existing theory. Such a theory will need to elaborate on the relationships among the different logics and their associated emotional effects. On the one hand, this is certainly more difficult than the prevalent but perhaps overly simplistic notion that deterrence by denial is only about manipulating the cost/benefit equation or about instilling fear. On the other hand, such a theory would more accurately capture the real-world complexity associated with strategy execution in practice, which is a quality worth aspiring to.

## Conclusion: Implications for research and practice

This article has argued that denial strategies are of paramount strategic utility in today's security environment, but that it is necessary to clarify existing conceptual confusion concerning their scope and nature. In doing so this article has offered a typology that distinguishes different denial logics and different emotional effects through which denial leads to consequences. Still, it remains to answer the pending "so what?" question. Why should strategic theorists and practitioners care about these logics and about the role of different emotions that are associated with distinct denial logics? And what does this mean for practice and future research?

First and foremost, the denial taxonomy offers multiple logics of denial that can help structure assessments of the strategic utility. Surely, strategic

**Table 2.** Denial, emotional effects, favorable consequences.

Action	Denial	Emotional Effect	Favorable Consequence
Offensive action	Capability elimination	Despondency	Loss of Will to Fight
Offensive/Defensive action	Operational Paralysis	Resignation	Loss of Will to Fight
Offensive/Defensive action	Tactical degradation	Submissive Fear	Loss of Will to Fight
Defensive action	Strategic effect reduction	Disappointment	Loss of Will to Fight

utility differs across scenarios and from one domain to another but the denial taxonomy offered here provides the analytical framework to assess issues such as effectiveness, feasibility, legitimacy, escalation potential, and costs, which can be taken up in future research. As such, and in addition, it offers added value to practitioners to help inform the design of real-world postures and the various capabilities and measures that make up such a portfolio. The suggested approach should motivate practitioners to explain their reasoning and be dissatisfied with the answer that they merely deter through denial. Instead, the approach invites practitioners to ask what sort of denial they aim for, how they will do so, what emotional effects this particular form of denial may generate, and how these effects are expected to contribute to attaining the overall political objectives. Our approach thus nurtures asking tough questions about prioritization and performance in adversarial contexts, which is an important ingredient of effective strategy-making.

Second, the identification of the role of different emotions through which these denial logics generate their effects sheds an important light on the micro-mechanisms that are often underappreciated in extant strategic theory. The important role of emotions highlighted in this article further expands and refines previous attempts to conceptualize the role of perceptions and the “operational code” of decision-makers, building on the emerging field of emotion sciences that has been making inroads in the strategic studies discipline in recent years (George, 1969). Further research will have to corroborate the role of emotions in experimental settings using simulations—something that is quite prevalent in psychology, amongst others, and which has also been used more often in the international relations discipline—as well as in in-depth case studies to specify their effect.

Third, the approach we propose offers multiple avenues for further research. We outline three here. For one, it is desirable to explore the relationships between the various denial strategies, specifically whether and when in their application they are symbiotic because they reinforce one another, or, instead, counterproductive because they have opposite or negative effects. Such research will strengthen scholarly understanding of the utility of different strategies and inform more calibrated assessments of strategies that lie beneath general headers such as deterrence and compellence. Second, an equally relevant and similar avenue for future research applies to the emotional effects of these denial strategies: Do these emotions amplify each other’s potential or can they also cancel each other out? Going down this avenue will help deepen the integration of emotion sciences in coercion research and enhance scholarly understanding of the mechanisms that drive decision-making at the micro-level. Third, and more specifically, a third avenue could apply a similar analytical framework to disentangle deterrence by punishment strategies, to examine whether the measures,

mechanisms and effects associated with this prominent concept are not in fact also more diverse than commonly assumed.

In closing, we express our hope that other scholars follow up on these recommendations so that we as a community can continue to refine our knowledge and insight of strategies that are critically important for matters of war and peace in the years to come.

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