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When Do Two Wrongs Make a Right? Schadenfreude and the Legitimization of Illegal
Attacks Against Corrupt National Institutions

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Funding Note: This work was supported by the UKRI under Grant “Secret Power” No. EP/X02170X/1 (awarded to GA Travaglino under the European Commission’s “European Research Council - STG” Scheme) and the BA/Leverhulme Small Research Grants SRG2324\240792.

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Authorship Statement: The names of GB, AB, and PK are in alphabetic order.

Acknowledgements: The first author acknowledges the contribution of Luna Tianyuan Travaglino-Li, whose timely reminders to pause (often in the form of loud cries) shaped the rhythm of this manuscript’s writing. The authors also thank Maria Heering for her research assistantship while conducting Experiment 1, which was included in her dissertation.

Data Availability Statement: All the materials, data, analysis code, and codebooks are available at the following link:

https://osf.io/sdy9m/?view_only=cc9655997a704170a1fa64ea03ae7811

When Do Two Wrongs Make a Right? Schadenfreude and the Legitimization of Illegal Attacks Against Corrupt National Institutions

This research investigated the role of schadenfreude – feelings of joy at a target’s misfortunes – in people’s legitimization of illegal attacks against corrupt institutions with formal authority. Five experiments (Experiment 1 conducted in 2018, the others in 2024-25; Experiments 2-5 pre-registered) in the UK and Italy (N -total = 1,676) employed realistic scenarios involving cyberattacks and violent intimidation from criminal groups. Across studies, exposure to institutional corruption increased support for illegal retaliation, and schadenfreude consistently mediated this effect. In Experiments 2 and 5, heightened anger and disgust at the institution’s corrupt behavior, and in Experiment 3, reduced anger and disgust toward the illegal attacks themselves did not disrupt the link between schadenfreude and legitimization. Experiments 4 and 5 employed experimental approaches to mediation. Experiment 4 employed a manipulation-of-mediation-as-a-moderator design by altering the attackers’ group affiliation. Results provided experimental support for the hypothesized mediational role of schadenfreude, indicating that attacks perpetrated by a disliked outgroup are less likely to evoke schadenfreude and, in turn, legitimacy. Experiment 5 adopted a causal chain approach and manipulated the satisfaction elicited by the attacks. More satisfying attacks (vs. baseline) elicited stronger legitimization, even when controlling for general appraisals of deservingness. Collectively, the findings highlight the importance of positive moral affect elicited by the misfortunes befalling a target as a psychological mechanism underpinning support for illegal system-disrupting actions.

Keywords: schadenfreude; anger and disgust; punishment; retaliation; subjective group dynamics; corruption

State institutions around the world are often the targets of intimidation and other forms of illegal aggression. Examples of this trend include frequent episodes of violence against institutions in the US (Ramachandran et al., 2024), the wave of abuse against elected officials in Germany (Angelos, 2024), and recent assaults against the prime ministers of Slovakia and Denmark (Gera, 2024). Attacks are sometimes carried out by criminal actors. For instance, government agencies worldwide are increasingly targeted by cyberattacks from hacker groups (Buchanan, 2020). The motivations behind these attacks are often ambiguous, ranging from mischief to broader political agendas (Coleman, 2015). In Italy, over the past decade, approximately 20% of the 7,900 municipalities have experienced illegal attacks, many perpetrated by criminal organizations (Avviso Pubblico, 2023) – harmful groups without an explicit political ideology or system-changing purpose.

In certain circumstances, criminal actors' attacks may take place in response to powerful institutions' perceived or actual wrongdoings (Avviso Pubblico, 2023; Coleman, 2015). Nevertheless, these actions remain illegal and, in democratic contexts, may be particularly detrimental to the rule of law as they disregard accountability and due process (Heering et al., 2020). In this research, we addressed the critical yet underexplored question of whether the unethical actions of powerful national institutions influence public perceptions of illegal acts against them. Specifically, we investigated individuals' judgments of illegal attacks directed at national political institutions involved in corruption and the role of *schadenfreude* in driving such judgments.

Corruption is “self-interested behavior that comes at the expense of public well-being” (Zaloznaya, 2014, p. 187). Given its far-reaching societal impacts, corruption provided a relevant backdrop for testing our hypotheses. Across five experiments, we examined cyber-attacks (Experiments 1, 3-5) and violent intimidation by organized criminal groups (Experiment 2). Thus, these experiments focused on participants' evaluations of illegal

actions perpetrated by third-party actors that, in most cases, may also be harmful to society at large (Barnes, 2017; Blok, 1972; Wall, 2017).

Research underscores the centrality of affective processes in shaping retributive responses to misdeeds (e.g., De Quervain et al., 2004; Gollwitzer et al., 2011). Accordingly, we focused on the emotional processes involved in individuals' support for illegal actions directed at institutions guilty of corruption. Specifically, we examined *schadenfreude* – feelings of pleasure in response to the misfortune or suffering of another person or group (e.g., Feather, 2014) – as a key mechanism. *Schadenfreude* arises when a person or group (which we will refer to as a 'target') is perceived as deserving of a negative outcome due to their wrongdoing (Feather, 2014; Wang et al., 2019). We contend that the experience of *schadenfreude* is especially relevant because it may not only prompt individuals to devalue the target of an attack (Lange & Boecker, 2019) but also positively orient them toward the retributive actions carried out by others (Barron et al., 2023; Yam et al., 2023). In this research, we investigated whether *schadenfreude* increases the likelihood that individuals legitimize retributive actions, even when those actions are illegal and morally questionable.

Punishment, Retaliation, and the Social Control of the Powerful

Punishing wrongdoers is a fundamental tool of social control (Carlsmith & Darley, 2008; Wenzel & Okimoto, 2016). People care deeply about fairness (Gollwitzer & Van Prooijen, 2016), and under certain conditions, punishment may effectively restore individuals' sense of justice (Feather, 2005; Gromet & Darley, 2009). Societies have developed various frameworks to address violations of laws and unethical behavior, including misconduct committed by individuals or institutions in positions of power. However, formal channels – such as the criminal justice system or engagement in the institutional political process – tend to be more accessible to the affluent and powerful (Shami, 2022; Verba et al., 1995). In contrast, ordinary citizens face significant barriers when attempting to pursue

grievances, particularly against elites, those holding governmental authority, or powerful institutions (Baumgartner, 1984; Hanagan et al., 1998).

Individuals can adopt other strategies to address wrongs committed by the powerful. These strategies include overt forms of resistance, such as collective protest and social mobilization (Thomas & Louis, 2014; van Zomeren et al., 2012). However, as Leach and Livingstone (2015) argue, individuals in disadvantaged positions may lack the capacity to sustain prolonged confrontation. As a result, they may seek alternative and more covert ways to challenge injustice and unfair authorities, including redefining the meaning of group identity (Leach & Livingstone, 2015), engaging in acts of sabotage (Ambrose et al., 2002), or counterproductive behavior (Kelloway et al., 2010; Skarlicki & Folger, 1997).

The historian Hobsbawm (1965) documented an additional strategy across historical periods and diverse societies. He described circumstances in which groups such as mafias, robbers, and smugglers could gain public support because their actions were viewed as retribution against the unethical conduct of those in power. These groups, by disrupting the powerful, transform their public standing from mere criminals to folk heroes, a transformation Hobsbawm labeled *social banditry*. Cultural narratives, including folk stories about Robin Hood, exemplify this process, presenting outlaws as champions of justice against corrupt elites. Hobsbawm interpreted public *support* for such figures as a “pre-political” form of dissent. He argued that support for bandits offered individuals an outlet to express their desire for justice – more akin to *retaliation* enjoyed vicariously than a program of collective reform or social change.

Bandits and outlaws are harmful to society and frequently engage in activities that negatively impact ordinary people and the communities they inhabit (Blok, 1972). In contemporary contexts, for example, hackers with the necessary skills can commit large-scale acts of fraud and identity theft (Turgeman-Goldschmidt, 2005; Wall, 2017). Groups such as

criminal organizations have a profound social impact through their involvement in illicit markets and the use of widespread violence (Barnes, 2017). Yet, despite these harms, prior analyses suggest that such actors can sometimes provide a benefit by exerting informal control over powerful institutions or individuals acting predatorily, thereby attracting support (Curott & Fink, 2012). This is consistent with Hobsbawm's analysis and also with Fiske and Rai's (2015) theory of virtuous violence, which posits that people may view violence as righteous when it fulfils perceived moral duties, such as protecting one's community or punishing wrongdoers.

Together, these perspectives underscore the possibility that harmful, illegal, and even violent acts may, under certain circumstances, be framed as legitimate. In this research, we examined the critical question of how illegal responses to injustice become subjectively acceptable to individuals, even when such responses are carried out by harmful third parties. Understanding this is crucial as it may shed light on the psychological processes and strategies that underlie individuals' covert resistance against injustice (Leach & Livingstone, 2015).

Building on the work of macro-theorists like Hobsbawm (1965; see also Abrahams, 1998), we conceptualize the legitimization of social banditry's acts as *indirect* retaliation against a powerful entity that has engaged in unethical practices detrimental to the common good. This retaliation is indirect because it is enacted not by the individual but by a third-party actor – for example, hackers of criminal groups. It allows observers to satisfy their sense of justice vicariously (Travaglino, 2019; cf. Carlsmith et al., 2008).

Prior research has provided some evidence of these dynamics in related domains. For instance, Heering et al. (2020) found that support for cyberattacks against institutions such as universities or workplaces was influenced by how responsive those institutions were to user grievances. Specifically, individuals expressed greater support for cyberattacks when the

targeted organization was seen as unresponsive to complaints about unfair treatment. Similarly, Ireland (2022) and Travaglini (2019) investigated the predictors of public perceptions of the hacktivist group Anonymous, highlighting the role of perceptions of societal fairness and institutional responsiveness. This evidence, however, remains limited in scope because it focuses on specific groups (e.g., Anonymous) and, with the exception of Heering et al (2020), is mainly correlational.

In the present research, we extend this work by focusing on powerful national institutions as the targets of illegal attacks. These institutions – such as government agencies or public bodies – wield authority and are responsible for safeguarding the common good. As such, when they engage in unethical or corrupt practices, they may elicit particularly strong condemnation (Thomas & Louis, 2014). Yet, it remains unclear whether institutional misconduct influences the legitimization of illegal attacks enacted by third parties. Importantly, the contribution of moral emotions such as *schadenfreude* to these dynamics is unexplored. In our Experiments, we tested the hypothesis that *schadenfreude*, evoked by observing a criminal attack against an unethical institution, may be linked to the legitimization of such attacks.

Schadenfreude

Functionalist approaches posit that emotions have evolved to maximize survival by guiding individuals toward or away from specific targets (Levenson, 1999). As such, emotions constitute an essential component of the self-regulatory system, motivating individuals to approach or avoid particular actions, situations, or people (e.g., Frijda et al., 1989). For instance, transgressions and unfair behaviors tend to elicit negative emotions such as anger or disgust (e.g., Rozin et al., 1999), which are in turn related to individuals' desire to punish the wrongdoer (Hofmann et al., 2018). Conversely, retaliating against transgressions tends to elicit satisfaction (De Quervain et al., 2004; Funk et al., 2014; Gollwitzer et al.,

2011; Tripp et al., 2002), at least under certain conditions (Carlsmith et al., 2008; Eadeh et al., 2017).

In social settings, emotions regulate interpersonal and intergroup relationships by promoting disengagement from or affiliation with others (Fischer & Manstead, 2016; Fischer & Van Kleef, 2010; Lange & Boecker, 2019; Lange & Crusius, 2015; Van Kleef et al., 2006). For example, exposure to organizations perceived as predatory can evoke emotional reactions of anger or fear, which may, in turn, motivate individuals to endorse policies opposing them (Eadeh & Chang, 2020; Fiagbenu & Kessler, 2022). Thus, emotional responses can also contribute to shaping how individuals navigate complex social and political environments, particularly when other actors are seen as violating norms of justice.

The emotional experience of *schadenfreude* is especially relevant when individuals witness retaliation or punishment directed at wrongdoers, rather than directly enacting revenge themselves, because it reflects the pleasure of seeing justice restored (Wang et al., 2019). “Justice *schadenfreude*” arises from the desire to see a wrongdoer punished for their misdeeds, and it occurs when a target is perceived as deserving of a negative outcome (Boecker et al., 2022; Feather, 2014; Van Dijk et al., 2015; Van Dijk & Ouwerkerk, 2014). Judgments of deservingness reflect individuals’ assessment of whether a target has earned a given outcome, following a fit principle (e.g., Feather, 2006). For instance, a negative outcome (e.g., punishment) is generally perceived as deserved when it follows a negative action (e.g., misbehavior). Judgments of deservingness, in turn, lead to the activation of discrete emotions, including *schadenfreude* (Van Dijk et al., 2005, 2009).

The experience of *schadenfreude* typically leads individuals to distance themselves from the target eliciting the emotion (Fischer & Manstead, 2016). Evidence from the literature on interpersonal relations supports this notion, showing that people experience pleasure from observing others punishing a transgressor (Carlsmith et al., 2008; Yam et al.,

2023). This evidence is consistent with the idea that schadenfreude plays an essential social regulatory function, leading individuals to devalue those targets perceived as unfairly achieving success, dominance, or status (Lange & Boecker, 2019; see also Feather & Sherman, 2002).

However, while emotions typically have a primary function, they can serve multiple purposes (Fischer & Manstead, 2016). We propose that, beyond devaluing a target engaged in unfair conduct, the pleasure derived from punishment may also positively predispose individuals toward the actions used to administer punishment or toward the actor carrying out the punishment. Research on this aspect is still limited, but some initial evidence supports this additional function of schadenfreude. For instance, Barron et al. (2023) demonstrated that the experience of schadenfreude, which they termed “hedonistic motive,” was associated with more positive attitudes towards online shaming of a target perceived as deserving punishment. Interestingly, across their studies, the pathway from perceived deservingness to online shaming via schadenfreude was stronger and emerged more consistently than that via moral outrage. This finding suggests that, in some cases, individuals may approve of punishment for a transgression specifically because witnessing that punishment evokes pleasure and gratification. Further, in the context of trust games, Yam et al. (2023) showed that schadenfreude was linked to more positive attitudes toward another player meting out punishment against a trust violator.

In our studies, we extended research on schadenfreude by examining the experience of this emotion in the context of responses to illegal attacks perpetrated against institutions that fail to meet important ethical standards. Notably, we investigated schadenfreude in situations where an adverse outcome befalls a powerful target that belongs to the *same* national category as the observer. At the group level, research has primarily focused on schadenfreude experienced by witnessing outgroups suffering (Cikara, 2015; Leach et al.,

2003; Ouwerkerk et al., 2018). This “intergroup schadenfreude” is underpinned by social identity concerns (Wang et al., 2019) and can be evoked by threatening upward comparisons (Van Dijk et al., 2015). Indeed, intergroup schadenfreude is more likely to be evoked in contexts marked by rivalry between groups (Leach et al., 2003) and following feelings of inferiority (Leach & Spears, 2008).

Notably, however, even in intergroup settings, justice-related concerns can play a role in shaping the experience of schadenfreude. Specifically, schadenfreude tends to be modulated by circumstances that alter the perceived deservingness of the misfortune. Individuals tend to report lower schadenfreude when an outgroup’s suffering is perceived as undeserved or when the outgroup’s superiority is viewed as legitimate (Leach et al., 2003; Leach & Spears, 2008). These findings suggest that justice appraisals can constrain or amplify schadenfreude.

While most intergroup research has focused on schadenfreude directed at outgroups, prior work also suggests that individuals may respond emotionally to the suffering of ingroup institutions, particularly when those institutions are seen as violating norms and ethical standards. For example, subjective group dynamics theory (SGD) posits that transgressions by ingroup targets undermine the subjective validity of ingroup norms, motivating group members to harshly derogate such transgressors (e.g., Abrams et al., 2021; Pinto et al., 2010). This dynamic extends to cases involving transgressive subgroups (e.g., institutions) within a superordinate category (e.g., the nation, Abrams et al., 2021). Research in the SGD paradigm, therefore, suggests that individuals may respond with joy and pleasure to the suffering affecting one of their national institutions if it is engaged in corruption. We propose that schadenfreude might, in turn, be linked to individual support for illegal actions against these institutions.

Overview of the Experiments and Hypotheses

In five experiments, we investigated for the first time whether the unethical conduct of national institutions influences individuals' legitimization of illegal attacks upon those institutions. Based on the reasoning that such attacks might be perceived as a justifiable response to the unethical behavior of national institutions (Hobsbawm, 1965; Travaglino, 2019), we hypothesized that individuals would exhibit stronger legitimization of these illegal actions following exposure to institutional corruption. Furthermore, extending the social regulatory function of *schadenfreude* (Fischer & Manstead, 2016; Lange & Boecker, 2019), we hypothesized that *schadenfreude* would orient individuals positively toward the (highly morally questionable) actions used to administer punishment.

Experiments 1 and 2 tested our hypotheses using samples from the UK (Experiment 1) and Sicily, Italy (Experiment 2). In the UK, we tested our hypotheses in the context of cyberattacks against the government embroiled in a cash-for-influence scandal. Hackers are sometimes described as modern social bandits who use illegal means to retaliate against injustices (Coleman, 2015; Travaglino, 2019). In Sicily, we operationalized illegal attacks through mafia intimidation against the local health system, portrayed as mismanaging its funds. The Sicilian mafia is a powerful group with a history of violence against institutions (e.g., Daniele & Dipoppa, 2017). Thus, we tested our hypotheses in settings involving distinct national institutions and illegal actions, enhancing the generalizability of the psychological process examined.

In our experiments, we also explored alternative mechanisms that might account for the increased legitimization of illegal attacks. Specifically, we examined whether the path from exposure to corruption to legitimization via *schadenfreude* remained robust when controlling for other emotional responses directed at two distinct targets: the corrupt institution (Experiments 2 and 5) and the illegal attackers themselves (Experiment 3). In Experiment 2, we focused on anger toward the institution. Episodes of injustice, such as cases

of corruption, can evoke outrage and anger in individuals, even when they are not personally affected (e.g., Rothschild & Keefer, 2022). Anger underpins the devaluation of a transgressive target (Rozin et al., 1999) and has been shown to predict punitive attitudes toward transgressions (Pagano & Huo, 2007). Thus, we tested whether – consistent with its social regulatory function of positively orienting individuals toward punishment – the effect of schadenfreude is robust to controlling for anger against the institution.

Experiment 3 used the context of cyber-attacks to test whether the effect of schadenfreude was robust to controls for other emotions elicited by the illegal attacks themselves. Attacks against national institutions are themselves deviant and immoral. In addition to anger, disgust also plays a role in shaping individuals' responses to deviance across societies and situations (Andersson et al., 2024; Giner-Sorolla et al., 2018). We hypothesize that individuals should experience reduced anger and disgust in response to illegal attacks carried out as punishment against unethical national institutions. However, if schadenfreude has a specific social regulatory function, the path through this emotion should also remain significant when controlling for a reduction in the experience of anger and disgust. Thus, this experiment tested whether participants viewed the attacks as more legitimate, specifically because these attacks elicited hidden satisfaction rather than only lower negative emotions of anger and disgust.

Experiments 1–3 employed a traditional approach to testing mediation in which the mediator and the dependent variable were measured concurrently. The limitations of this approach are well documented – primarily, that it cannot establish causal evidence for the path from the mediator to the dependent variable (Bullock et al., 2010; Fiedler et al., 2011; Lemmer & Gollwitzer, 2017; MacKinnon & Pirlott, 2015; Spencer et al., 2005). To address this limitation, Experiments 4 and 5, both conducted in the context of cyberattacks, employed

two different strategies to provide stronger evidence of a causal relationship between the mediator and the dependent variable.

Experiment 4 drew on recommendations from the manipulation-of-mediation-as-a-moderator (MMM) design (Ge, 2023). The MMM identifies the sufficient and necessary conditions to confirm the presence of a mediating process (see Ge, 2023 for a detailed discussion). Central to the MMM is the manipulation of the mediator, including a condition where participants do not experience the mediating process. In our paradigm, we sought to create a situation that maintained the retaliatory actions the same across conditions while being less likely to evoke *schadenfreude*. We operationalized this requirement by describing an illegal attack by a strongly disliked outgroup. Specifically, we focused on cyberattacks from Russian hackers because of the negative views of this national group among the UK public (Menon et al., 2022).

Illegal attacks by a disliked outgroup are less likely to evoke *schadenfreude* because individuals tend to perceive the motivations of an outgroup less positively, expecting more discrimination and less fairness from outgroup members (e.g., Foddy et al., 2009; Moy & Ng, 1996). Research on intergroup perception highlights a general expectation of bias and lower trustworthiness when evaluating outgroup actions (e.g., Brewer, 1979; Campbell, 1967). As a result, attacks perpetrated by a disliked outgroup are less likely to be interpreted as motivated by a genuine desire to restore justice. This is critical, as the perception of justice restoration is a central underpinning of *schadenfreude* (Wang et al., 2019). Overall, this research suggests that describing the attacks as perpetrated by an outgroup might interfere with the experience of joy and pleasure that comes from seeing a corrupt ingroup institution punished, making it less likely for such attacks to evoke *schadenfreude*. Based on this reasoning, we hypothesized that an illegal attack by a disliked outgroup would be less likely to evoke *schadenfreude* and be seen as a legitimate response to institutions' unfairness.

Experiment 5 employed a causal chain approach to mediation. This approach tests the causal relationship between the components of a mediation model across separate experiments. The causal link between the independent variable and the mediator was tested in Experiments 1–3. Accordingly, Experiment 5 focused on testing the causal link between the mediator and the dependent variable by manipulating the degree of joy and satisfaction individuals could derive from the attack. In a qualitative analysis of revenge episodes, Tripp et al. (2002) identified three features that increase satisfaction from retaliatory acts: symmetry (the punishment mirrors the harm inflicted), altruism (the act considers the welfare of others), and poetic justice (the act is seen as particularly fitting in the situation). Drawing on this research, we presented participants with an illegal attack against a corrupt institution that included these elements (vs. a baseline attack). This allowed us to test whether attacks that evoke more pleasure and satisfaction are legitimized more strongly.

In addition to its primary aim, Experiment 5 addressed two further objectives. First, it revisited the role of anger and disgust directed at the corrupt institution to assess whether the effect of *schadenfreude*, as manipulated in this study, remained robust when controlling for these negative emotional responses against the corrupt target. Second, the experiment included a measure of perceived deservingness to test whether *schadenfreude* contributes to the legitimization of illegal attacks above and beyond judgments of deservingness. Although deservingness is a well-established antecedent of *schadenfreude* (Feather, 2006; Van Dijk et al., 2005, 2009), we included this variable as a control in Experiment 5 to examine whether the discrete emotional response of *schadenfreude* accounts for additional variance in the legitimization of illegal attacks beyond what is explained by the general moral appraisal that the corrupt institution “deserved” its punishment.¹

Transparency and Openness

¹ We thank an anonymous reviewer for raising this point.

Materials, data, and code are available at the following link:

https://osf.io/sdy9m/?view_only=cc9655997a704170a1fa64ea03ae7811 (Travaglino, 2025).

Experiments 2 to 5 are pre-registered. We report all conditions. Additional measures collected in some of the studies are described in the supplementary materials. Pre-registered participant exclusions are only based on failed attention checks. Due to limited space, information on the attention checks employed is available in the pre-registrations and supplementary materials.

Additional demographic information about the samples is also described in the supplementary materials. Across studies, sample size was determined based on the availability of resources and with the aim of detecting small-to-medium effects. Data were analyzed using R (V. 4.2.1; R Core Team, 2022), and the main packages employed were lavaan (Rosseel, 2012), tidyverse (Wickham et al., 2019), bruceR (Bao, 2023), and psych (Revelle, 2023).

Experiments 1 and 2

Experiments 1 (collected in 2018) and 2 (collected in 2024) tested our hypotheses in the context of cyberattacks in the UK and organized crime intimidation in Sicily, Italy, respectively. In both experiments, we investigated participants' feelings of schadenfreude and legitimization of illegal attacks following institutions' unethical behavior compared to a neutral condition. Institutions' unethical behavior was operationalized as a cash-for-influence scandal in the government (Experiment 1) and mismanagement of funds in the national health system (Experiment 2). By focusing on different countries, institutions, and forms of illegal attacks, we aimed to assess the generalizability of our hypotheses, including attacks involving violence (cf. Fiske & Rai, 2015). Additionally, Experiment 2 included a measure of anger directed at the institution to control for the influence of this emotion on the legitimization of illegal attacks.

Experiment 1

Participants and Design

A sample of 217 British participants was recruited via Qualtrics on the Prolific platform (51% men, 49% women, $M_{age} = 37.13$, $SD_{age} = 12.91$). Participants were randomly assigned to one of two conditions (Corruption vs. Neutral) in a between-subjects design. A sensitivity power analysis indicated that this sample size allowed us to detect a minimum effect size of $d = .39$, assuming 80% power and $\alpha = .05$.

Procedures and Measures

Participants were exposed to the experimental conditions through two fabricated newspaper articles designed to mimic the format of Reuters. In the Corruption condition, participants read about a 'cash for influence' scandal involving members of the British Parliament (MPs). This scenario, based on actual events, described how MPs from both the Conservative and Labor parties had allegedly received money in exchange for favorable legislation. In the Neutral condition, participants read an article about recent legislative efforts by MPs to regulate the use of laser pointers at airports.

Next, all participants, regardless of the condition, read about a cyberattack:

Immediately following the press release of the article above, a group of British hackers hacked into the computers of various British government officials, apparently succeeding in stealing sensitive files and the officials' personal information. The hackers' actions caused a lot of public damage to the officials involved and to the government as a whole.

Then, participants completed the measures. *Schadenfreude* was measured using four items (Van Dijk et al., 2008), "When I think about what the hacking attack means for the Government..." "I cannot resist a little smile," "This gives me satisfaction," "I feel pleasure,"

and “I actually have to laugh a little” ($\alpha = .94$; 1 = *strongly disagree* to 7 = *strongly agree*).

Legitimization was measured with six items (Heering et al., 2020), “The purpose of the hackers' actions was legitimate,” “Actions like those performed by the hackers are a threat to democracy” (reverse scored), “The hackers' actions deserve respect,” “The hackers' actions are criminal and should be condemned” (reverse scored), “Actions like these are a threat to personal security” (reverse scored), “The hackers' actions deserve admiration” ($\alpha = .90$, 1 = *strongly disagree* to 7 = *strongly agree*).²

Results

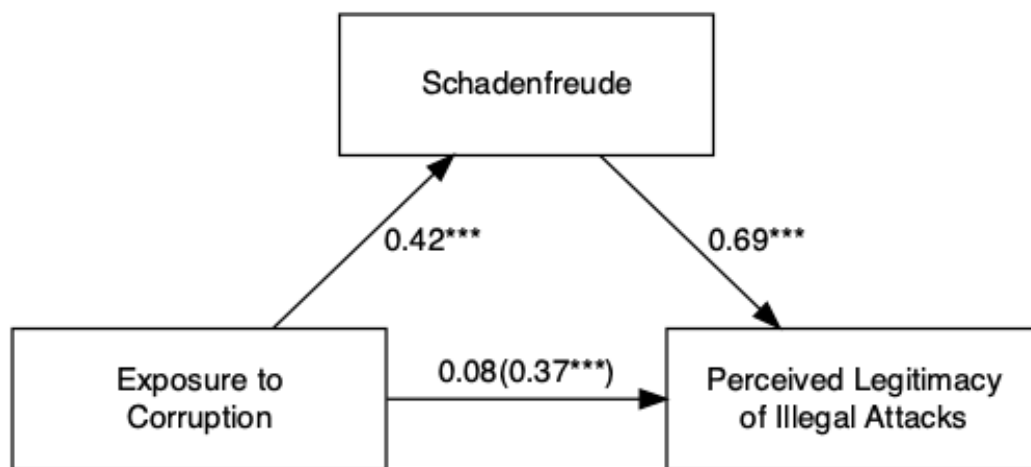
Supporting the hypothesis that the unethical behavior of institutions might influence individuals' evaluations of illegal attacks, a t-test showed that, compared to the Neutral condition ($M = 2.64$, $SD = 1.06$), participants legitimized hackers' illegal attacks more strongly when exposed to Corruption ($M = 3.52$, $SD = 1.15$), $t(211.81) = -5.87$, $p < .001$, $d = -0.80$, 95% CI [-1.07, -0.52]. A t-test also showed that, compared to the Neutral condition ($M = 2.59$, $SD = 1.45$), participants reported more schadenfreude ($M = 3.98$, $SD = 1.56$) when reading about the cash-for-influence scenario, $t(212.15) = -6.76$, $p < .001$; $d = -0.92$, 95% CI [-1.20, -0.64]. Schadenfreude and legitimization were correlated, $r(215) = .72$, $p < .001$, 95% CI [0.65, 0.78].

Mediation Model. To test whether schadenfreude mediated the effect of exposure to Corruption on the perceived legitimacy of illegal attacks, we employed a path model with 10,000 bootstrapped samples. The model's standardized estimates are summarized in Figure 1. Being exposed to corruption significantly predicted schadenfreude, $b = .69$, $SE = .10$, p

² We tested the measurement models of schadenfreude and legitimacy across all studies by comparing a one-factor solution, where all items loaded on the same factor, with a two-factor solution, where schadenfreude and legitimacy were treated as distinct factors. Results are summarized in Table E in the Supplementary Materials. Across all studies, the two-factor solution provided a substantially better fit to the data than the single-factor solution, suggesting that schadenfreude and legitimization, albeit correlated, are distinct constructs. However, we note that the absolute fit of the two-factor model (e.g., RMSEA) was somewhat weaker than the conventional benchmark, and results should therefore be interpreted with this caveat in mind.

$< .001$, 95% CI [0.49, 0.90]. Schadenfreude was associated with the perceived legitimacy of illegal attacks, $b = .49$, $SE = .04$, $p < .001$, 95% CI [0.41, 0.57]. Exposure to corruption indirectly predicted perceived legitimization of illegal attacks via schadenfreude, $\beta = .29$, $SE = .06$, $p < .001$, $b = .34$, 95% CI [0.23, 0.47].

Figure 1. Mediation Model in Experiment 1 with Standardized Coefficients



Note. Exposure to Corruption: -1 = Neutral, 1 = Corruption

Experiment 2

Participants and Design

Five hundred ninety-five participants were recruited from Sicily, Italy, and took part in the experiment voluntarily and without financial compensation. After pre-registered exclusions (https://aspredicted.org/NWY_DW1), the final sample was $N = 375$ (31.73% men, 67.2% women, and 1.07% non-binary; $M_{\text{age}} = 32.38$, $SD = 14.26$) participants. As pre-registered, we excluded participants who failed the attention checks and recruited additional participants until we achieved the desired sample size. Participants were recruited using a chain referral sampling strategy. A member of the research team sent a Qualtrics link containing the study to an initial set of contacts. On completion of the study, these

participants were asked to forward the link to at least two additional contacts, describing it as a study “on the perception of local events.” Participants were instructed not to reveal information about the study. This process was continued iteratively until the desired sample size was achieved. Participants were randomly assigned to one of two conditions (Corruption vs Neutral) using a between-subjects design. A sensitivity power analysis indicated that this sample size afforded 80% power to detect a minimum effect size of $d = .29$ at $\alpha = .05$.

Procedures and Measures

Participants were exposed to either an episode of corruption or a neutral scenario through bogus newspaper articles designed to mimic a leading news agency in Italy (ANSA). In the Corruption condition, participants read about a case of mismanagement of funds within the healthcare system. They learned that, due to questionable administrative decisions, critical resources meant for the healthcare system were being diverted from their original purposes. These practices were described as compromising hospital efficiency. In the neutral condition, the article described the regional health administration’s announcement of operational updates to the hospital's internal communication system. The updates were described as routine administrative operations.

After reading one of the two articles, all participants were informed that:

The offices and territorial branches of the regional health administration were raided. Personnel received threats and found their vehicles set on fire. Ongoing investigations suggest a direct link between these acts and the local mafia. Organized crime’s actions have caused significant damage both to the individual administrators involved and to the regional health administration as a whole.

Participants then completed the same four-item measure of *schadenfreude* ($\alpha = .88$; 1 = *strongly disagree* to 7 = *strongly agree*) and six-item measure of legitimization ($\alpha = .68$; 1 = *strongly disagree* to 7 = *strongly agree*), as in Experiment 1. Items were translated into Italian and adapted to the context (e.g., the actions of the local mafia were legitimate). *Perceived anger* was measured using three items, “The way the regional health administration has behaved makes me angry,” “I am furious when I think about what the officials of the regional health administration have done,” “I feel outraged towards the regional health administration and its officials” ($\alpha = .96$; 1 = *strongly disagree* to 7 = *strongly agree*).

A manipulation check was included to confirm that the corruption scenario was perceived as unethical. This consisted of three pairs of polar adjectives (1 = *illegal* to 7 = *legal*; 1 = *fair* to 7 = *unfair*³; 1 = *honest* to 7 = *dishonest*) preceded by the instructions: “To what extent is what have you read about the actions of the regional health administrations and its personnel ...” ($\alpha = .92$).

Results

A t-test on the manipulation check confirmed that, compared to the Neutral condition ($M = 3.07$, $SD = 1.97$), participants’ perception of the institution’s unethical behavior increased in the Corruption condition ($M = 6.34$, $SD = 1.33$), $t(319.37) = -18.71$, $p < .001$, $d = -1.94$, 95% CI [-2.19, -1.69]. Moreover, compared to the Neutral condition ($M = 1.34$, $SD = 0.50$), participants legitimized the mafia’s actions more strongly in the Corruption condition ($M = 1.64$, $SD = 0.64$), $t(359.24) = -5.08$, $p < .001$; $d = -0.52$, 95% CI [-0.73, -0.32].⁴ These results supported the hypothesis that individuals legitimize illegal attacks more strongly

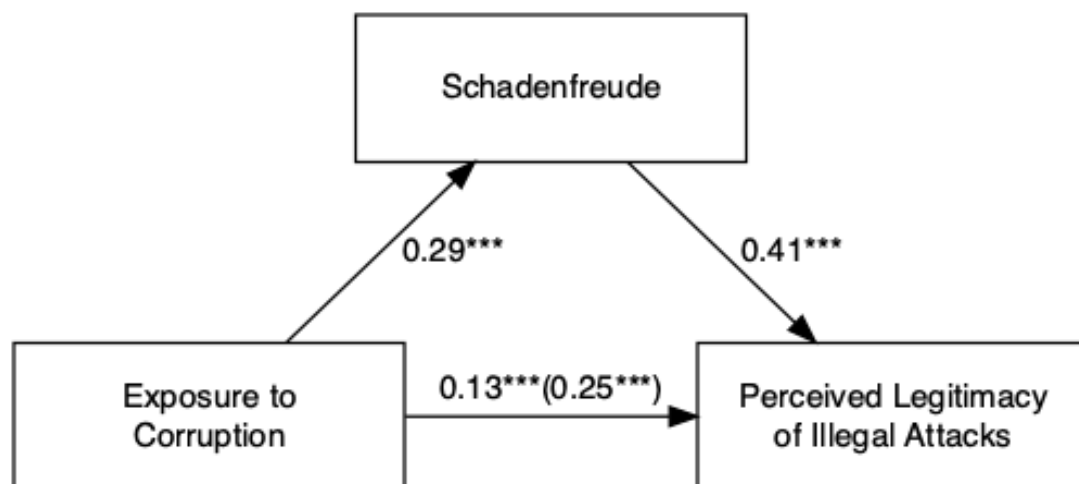
³ The study was conducted in Italian, where the word “giusto” encompasses both “just” and “fair.” Accordingly, the preregistration (written in English) referred to “just/unjust,” while the manuscript reports the same item as “fair/unfair,” in line with the other studies.

⁴ We had initially pre-registered one-tailed t-tests for these analyses. However, for ease of exposition and coherence with the other studies, we report two-tailed tests. In addition, as pre-registered, we used regression analyses to examine the effects of the condition on *schadenfreude* and legitimization while controlling for the covariates of age, gender and education. Results remain unvaried when the covariates are included in the model; none of the covariates was significantly associated with *schadenfreude* or legitimization.

following institutions' unethical behavior in the context of harmful and violent organized crime groups. Moreover, relative to the Neutral condition ($M = 1.45$, $SD = 0.93$), participants reported more schadenfreude when the mafia's attacks followed an episode of corruption ($M = 2.11$, $SD = 1.24$), $t(352.01) = -5.82$, $p < .001$, $d = -0.60$, 95% CI [-0.81, -0.39]. Schadenfreude and legitimization were correlated, $r(373) = .45$, $p < .001$, 95% CI [0.37, 0.53].

Mediation Model. We tested whether schadenfreude mediated the effect of exposure to corruption on the legitimization of mafia attacks (see Figure 2). Exposure to corruption significantly affected schadenfreude, $b = .33$, $SE = .06$, $p < .001$, 95% CI [0.22, 0.44]. Schadenfreude was significantly associated with the legitimization of illegal attacks, $b = .21$, $SE = .04$, $p < .001$, 95% CI [0.14, 0.29]. The indirect effect, tested with 10,000 bootstrapped samples, was significant $\beta = .12$, $SE = .02$, $p < .001$, $b = .07$, 95% CI [0.04, 0.11].

Figure 2. Mediation Model in Experiment 2 with Standardized Coefficients



Note. Exposure to Corruption: -1 = Neutral, 1 = Corruption

In non-preregistered analyses, we retested our mediation hypothesis controlling for anger. Anger was affected by exposure to corruption ($M_{neutral} = 2.61$, $SD_{neutral} = 1.64$, $M_{corruption} = 6.38$, $SD_{corruption} = 0.91$), $t(283.01) = -27.43$, $p < .001$, $d = -2.85$, 95% CI [-3.16, -2.54]. Moreover, anger was also associated with schadenfreude, $r(373) = .35$, $p < .001$, 95% CI [0.26, 0.44] and legitimization $r(373) = .27$, $p < .001$, 95% CI [0.17, 0.36]. When included in a parallel mediation model, the indirect effect of corruption exposure on legitimization via anger was not significant, $\beta = .03$, $SE = .04$, $p = .60$, $b = .02$, 95% CI [-0.05, 0.10]. In contrast, the indirect effect via schadenfreude remained unchanged.

Discussion of Experiments 1-2

Findings from Experiments 1 and 2 supported our hypotheses in two countries and across distinct operationalizations of corruption. Additionally, we generalized the process to different illegal actions, including cyberattacks from hackers and violent intimidation from mafia groups. Notably, Experiment 2 also tested an alternative explanation for this phenomenon, namely anger against the institution's unethical behavior. Anger is involved in the devaluation of transgressive targets. We have theorized an additional social function for schadenfreude of devaluing the transgressive target while simultaneously orienting individuals positively towards the action carried out as punishment. The findings were consistent with this theorizing. Anger was associated with exposure to corruption, participants' schadenfreude, and their legitimization of the attacks. However, the indirect effect of anger was not significant, whereas that of schadenfreude remained unaltered.

Experiment 3

Experiments 1 and 2 tested our hypotheses in different contexts, countries, and forms of illegal attacks. Experiment 3 (collected in 2024) was designed to examine whether the pathway through schadenfreude was robust to controls for emotions evoked by the illegal attacks themselves. Using the context of cyber-attacks against an institution in the UK, we

tested anger and disgust, which are central to how individuals react to deviant acts (Andersson et al., 2024). If a reduction in negative emotions against the attacks is sufficient, then anger and disgust should explain all the variability in the link between institutions' unethical behavior and the legitimization of illegal attacks. A significant effect of *schadenfreude*, while controlling for these emotions, would be consistent with the additional social function of this positive experience in response to punishment.

Participants and Design

Three hundred fifty-one British participants were recruited on Prolific (one additional participant was returned by the platform). After pre-registered exclusions for the attention checks (https://aspredicted.org/B7K_FHY), the final sample was $N = 337$ (49% men, 51% women; $M_{\text{age}} = 43.12$; $SD_{\text{age}} = 13.43$). Participants were randomly assigned to one of two conditions (Corruption vs Neutral) in a between-subjects design. Using a Monte Carlo approach and assuming large correlations between variables, the sample size afforded sufficient power ($> .80\%$) in a multiple mediation design to detect the indirect effects of Condition on legitimization via the three emotional responses (Schoemann et al., 2017).

Procedures and Measures

As in previous experiments, participants were presented with one of two texts. In the Corruption condition, the text depicted a case of fraud and conflict of interest within the Office for National Statistics (ONS), a non-ministerial department. It described instances where senior ONS civil servants engaged in transactions with companies in which they held financial interests. The Neutral condition featured an article about the ONS's efforts to modernize building lighting systems to enhance aesthetic appeal and functionality. After reading one of the two scenarios, all participants read that “a group of British hackers breached the computer systems of the Office for National Statistics (ONS) and various ONS senior civil servants, succeeding in stealing sensitive files and the civil servants' personal

information. The hackers' actions have caused considerable damage to the civil servants involved and to the ONS as a whole.”

Participants then completed measures of *schadenfreude* (4 items; $\alpha = .96$), *anger toward the attack* (3 items; “I am furious about the hackers' attack,” “When I think about what the hackers did, I feel outraged,” and “The hackers’ attack angers me”; 1 = *strongly disagree* to 7 = *strongly agree*; $\alpha = .96$), *disgust toward the attack* (3 items; “When I think about the hackers' attack, I feel ... disgusted, grossed out, repulsed”; 1 = *strongly disagree* to 7 = *strongly agree*; $\alpha = .93$) (Clifford & Jerit, 2018) and legitimization (6 items; $\alpha = .90$). Finally, participants completed the same manipulation check of the institutions’ unethical behavior as in the previous studies ($\alpha = .94$).

Results and Discussion

T-test results are summarized in Table 1. When exposed to corruption, participants correctly perceived the institution’s behavior as more unethical. The hypothesis that the institution’s unethical behavior can shape individuals’ legitimization of illegal attacks was supported. Table 2 displays the correlation among the measures. When exposed to corruption, participants experienced more *schadenfreude* and diminished anger and disgust toward the illegal attacks.

Multiple Mediation Model

Using a multiple mediation model, we tested whether *schadenfreude* mediated the effects of exposure to corruption on the legitimization of illegal attacks, controlling for the other potential mediators (reduced anger and disgust toward illegal attacks). The results are summarized in Figure 3 and Table 3. Exposure to corruption significantly affected all three emotions. *Schadenfreude* and anger, but not disgust, significantly predicted the legitimization of illegal attacks. A test of the indirect effects using 10,000 bootstrap samples revealed that the effects through *schadenfreude* and anger, but not disgust, were significant.

Table 1. Means, Standard Deviations, and Test Statistics for the Measures in Experiment 3

Measures	Cond: Neutral	Cond: Corruption	Test Statistics
	<i>M (SD)</i>	<i>M (SD)</i>	
Perceived Unethical Behavior (Man. Check)	3.06 (1.86)	6.02 (1.04)	$t(245.71) = -17.75, p < .001; d = -1.96, 95\% \text{ CI } [-2.23, -1.68]$
Schadenfreude	1.75 (1.18)	3.08 (1.57)	$t(323.14) = -8.81, p < .001; d = -0.96, 95\% \text{ CI } [-1.18, -0.73]$
Anger	4.57 (1.52)	3.46 (1.55)	$t(333.29) = 6.61, p < .001; d = 0.72, 95\% \text{ CI } [0.50, 0.94]$
Disgust	3.77 (1.59)	3.02 (1.53)	$t(329.66) = 4.42, p < .001; d = 0.48, 95\% \text{ CI } [0.27, 0.70]$
Legitimization	2.14 (0.92)	3.09 (1.14)	$t(330.29) = -8.43, p < .001; d = -0.92, 95\% \text{ CI } [-1.14, -0.69]$

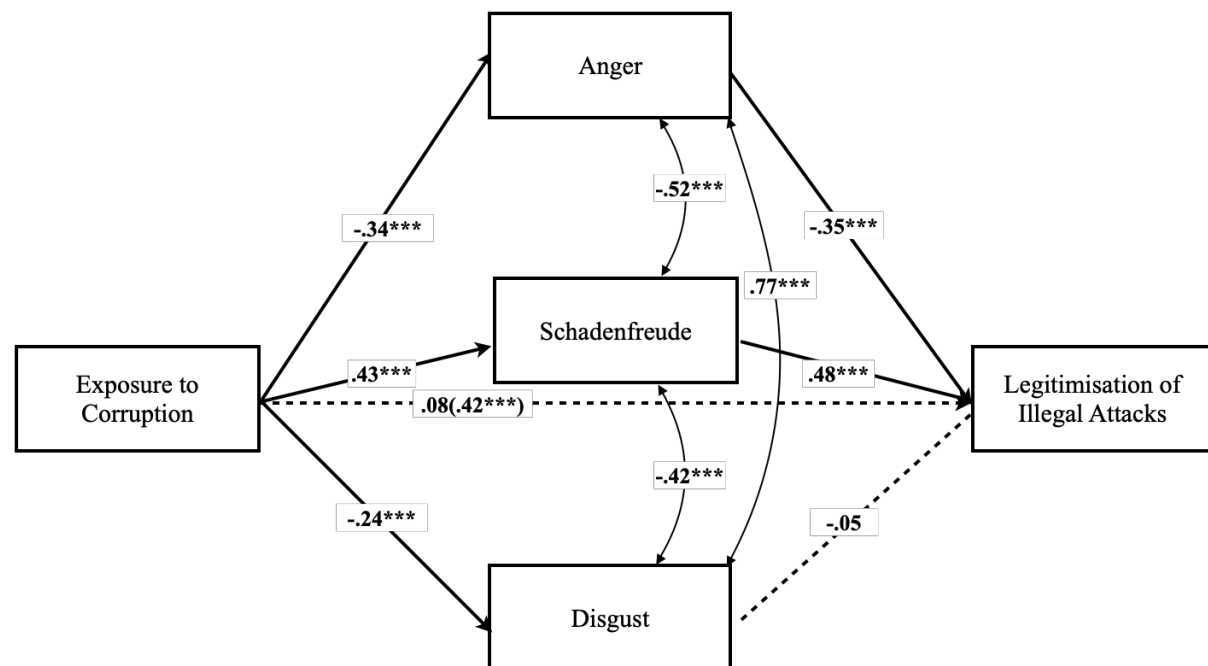
Note. Condition was coded as -1 = Neutral, 1 = Corruption

Table 2. Correlations among variables in Experiment 3.

	1	2	3	4
(1) Anger				
(2) Disgust	.79 [0.74, 0.82]			
(3) Schadenfreude	-0.59 [-0.66, -0.52]	-0.47 [-0.55, -0.38]		
(4) Legitimization	-0.70 [-0.75, -0.64]	-0.57 [-0.63, -0.49]	0.75 [0.69, 0.79]	

Note. All correlations were significant at $p < .001$. $N = 337$ for all correlations. 95% Confidence Intervals are displayed in square brackets.

Figure 3. Multiple Mediation Model in Experiment 3



Note. Exposure to Corruption -1 = Neutral, 1 = Corruption; The emotions of anger and disgust were measured in relation to the illegal attacks.

Table 3. Multiple Mediation Model in Experiment 3

Criterion	Predictor	β	<i>b</i>	95% CI	<i>SE</i>	<i>p</i>
Schadenfreude						
	Condition	.43	.66	0.51, 0.81	.08	< .001
Anger						
	Condition	-.34	-.55	-0.71, -0.39	.08	< .001
Disgust						
	Condition	-.24	-.38	-0.55, -0.21	.09	< .001
Legitimization						
	Schadenfreude	.48	.36	0.28, 0.43	.04	< .001
	Anger	-.35	-.24	-0.33, -0.16	.04	< .001
	Disgust	-.05	-.03	-0.11, 0.03	.04	.35
	Condition	.08	.09	0.01, 0.17	.04	.03
Indirect Effects						
	Schadenfreude	.21	.24	0.17, 0.32	.04	< .001
	Anger	.12	.13	0.08, 0.21	.03	< .001
	Disgust	.01	.01	-0.01, 0.05	.01	.38

Note. Condition was coded as -1 = Neutral, 1 = Corruption

Experiment 3 supported our hypothesis that the mediating effects of *schadenfreude* would be robust against other emotional reactions to the illegal attacks. As expected, participants reported diminished anger and disgust towards illegal attacks when such acts followed an episode of corruption. There was an independent effect of anger on legitimization. This effect likely emerges because, unlike Experiment 2, which addressed anger against the *institution*, in the current study, we focused on emotional reactions toward the *attacks*. *Schadenfreude*, however, remained a significant predictor of the legitimization of illegal actions targeting unethical institutions.

In this experiment, emotional reactions of anger and disgust toward the hackers were highly correlated. We examined the Variance Inflation Factors (VIF) for the variables included in the model and found that none exceeded the commonly accepted threshold of 5, which is typically considered indicative of problematic multicollinearity (James et al., 2017). Nonetheless, we conducted an additional non-preregistered robustness check by creating a composite index of moral outrage using all the relevant items (see Sabo & Giner-Sorolla, 2017 for a similar strategy). Results of this model are presented in the supplementary material (Table F). They revealed a pattern consistent with the preregistered analysis, indicating that the indirect effect via *schadenfreude* on legitimization ($\beta = .22$, $SE = .04$, $p < .001$, $b = .25$, 95% CI [0.18, 0.33]) remained robust when controlling for a reduction of moral outrage toward the attacks. The indirect effect of moral outrage was also significant $\beta = .11$, $SE = .06$, $p < .001$, $b = .12$, 95% CI [0.08, 0.18].

Experiments 4 and 5

Experiments 4 and 5 aimed to provide stronger evidence for the mediating role of *schadenfreude* in the legitimization of illegal attacks by manipulating the mediator using different strategies and approaches. Experiment 4 (collected in 2024) followed the recommendations of the manipulation-of-mediation-as-a-moderator (MMM) design (Ge,

2023) and employed a paradigm in which participants observed illegal attacks being carried out against a corrupt (vs. neutral) institution, but schadenfreude was less likely to be evoked in one of the conditions. To reduce the likelihood of participants experiencing schadenfreude, we described the illegal punitive attacks as enacted by a disliked outgroup (vs. the ingroup).

As discussed earlier, schadenfreude is more likely to be evoked when justice is perceived as being restored (e.g., Wang et al., 2019). Prior research indicates that individuals are less likely to attribute fairness to the actions of outgroups (e.g., Foddy et al., 2009; Moy & Ng, 1996). Thus, we reasoned that illegal attacks carried out by an outgroup would be less likely to be perceived as motivated by the goal of restoring justice, thereby reducing the likelihood of evoking schadenfreude. This approach allowed us to test the specific role of schadenfreude in influencing the legitimization of these illegal actions.

The MMM design requires performing three key tests (Ge, 2023). First, it requires examining the interaction between the independent variable and the manipulation of the proposed mediating process on the dependent variable. This test assesses whether manipulating the mediating process alters the effect of the independent variable on the dependent variable, thereby confirming the existence of a mediating mechanism. Second, the design calls for testing the effect of the independent variable on the measured mediator within the condition in which the mediating process is not expected to be evoked. This step establishes whether the independent variable still influences the mediator, supporting the first path of the mediation process (i.e., independent variable on the mediator). Finally, the third test involves assessing the effectiveness of the manipulation of the mediator. This entails comparing levels of the measured mediator between conditions designed to manipulate it to determine whether the manipulation successfully altered the mediating process. This test establishes that the manipulation had the intended impact on the mediator.

Experiment 5, conducted in 2025, aimed to provide additional experimental evidence for the mediating process following the principles of the causal-chain approach (Spencer et al., 2005). As the path between the independent variable and the mediator was established in prior experiments, Experiment 5 focused on manipulating the link between the mediator (schadenfreude) and the dependent variable (legitimization of illegal attacks). In this experiment, all participants were exposed to identical scenarios involving institutional corruption and illegal attacks. We operationalized higher schadenfreude by describing the illegal attacks as containing elements identified by prior research as enhancing pleasure and satisfaction derived from punishment, namely symmetry of punishment, altruism, and qualities of poetic justice (Tripp et al., 2002). Additionally, Experiment 5 tested whether the experience of schadenfreude – as manipulated by increasing the perceived satisfaction derived from the attacks – affected the legitimization of illegal attacks, even when controlling for the general moral appraisals of deservingness and the experience of anger and disgust toward the institutions' corruption.

Experiment 4

Participants and Design

Six hundred and two British participants were recruited on Prolific (two extra participants were returned by the platform). After pre-registered exclusions due to attention checks (https://aspredicted.org/XZ7_6V8), the final sample was $N = 552$ (48% men, 50% women, 1% non-binary, and 1% did not report their gender; $M_{\text{age}} = 44.87$, $SD_{\text{age}} = 14.10$). Participants were randomly assigned to one of four conditions in a 2 (Exposure to Corruption: Corruption vs Neutral) x 2 (Group: Ingroup vs Outgroup) between-subject factorial design. A sensitivity power analysis indicated that the sample size afforded 80% power to detect an effect size $f^2 = .014$, assuming $\alpha = .05$.

Procedure and Measures

The manipulation of exposure to corruption was identical to that used in Experiment 3, presenting participants with either a case of fraud or a neutral scenario about the Office for National Statistics (ONS). After reading one of the two scenarios, all participants were introduced to a cyberattack scenario. They read about a group of hackers – either the British (ingroup) or Russian (outgroup) hacker network, depending on the condition – posting a message on the web matching the previous scenario (“British ONS is corrupt” or “British ONS updated the lighting systems”). The label “Russian Hacker Network” was presented to participants in Russian (with English translation).

Subsequently, participants learned that these hackers had breached the computers of various senior civil servants at the ONS, successfully stealing sensitive files and personal information. They were informed that the hackers’ actions had caused significant damage to both the civil servants involved and the ONS overall. Participants read that the evidence confirmed that the attack originated from the UK [Russia] and was conducted by the British [Russian] Hacker Network.” After the manipulations, participants completed the measures of *schadenfreude* (4 items; $\alpha = .95$) and legitimization (6 items; $\alpha = .89$) as in previous studies. Finally, participants completed the manipulation check of the institutions’ unethical behavior (3 items; $\alpha = .92$).

Results

The manipulation check confirmed that, relative to the neutral condition ($M = 3.70$, $SD = 1.99$), participants perceived the ONS’ behavior as more unethical in the corruption ($M = 5.77$, $SD = 1.23$), $t(447.99) = 14.68$, $p < .001$; $d = 1.25$, 95% CI [1.07, 1.44]. The correlation between *schadenfreude* and legitimization was significant, $r(550) = .73$, $p < .001$, 95% CI [0.69, 0.77].

Manipulation-of-Mediation-as-a-Moderator Design. We conducted the three sets of analyses required by the MMM design. First, we tested whether Exposure to Corruption

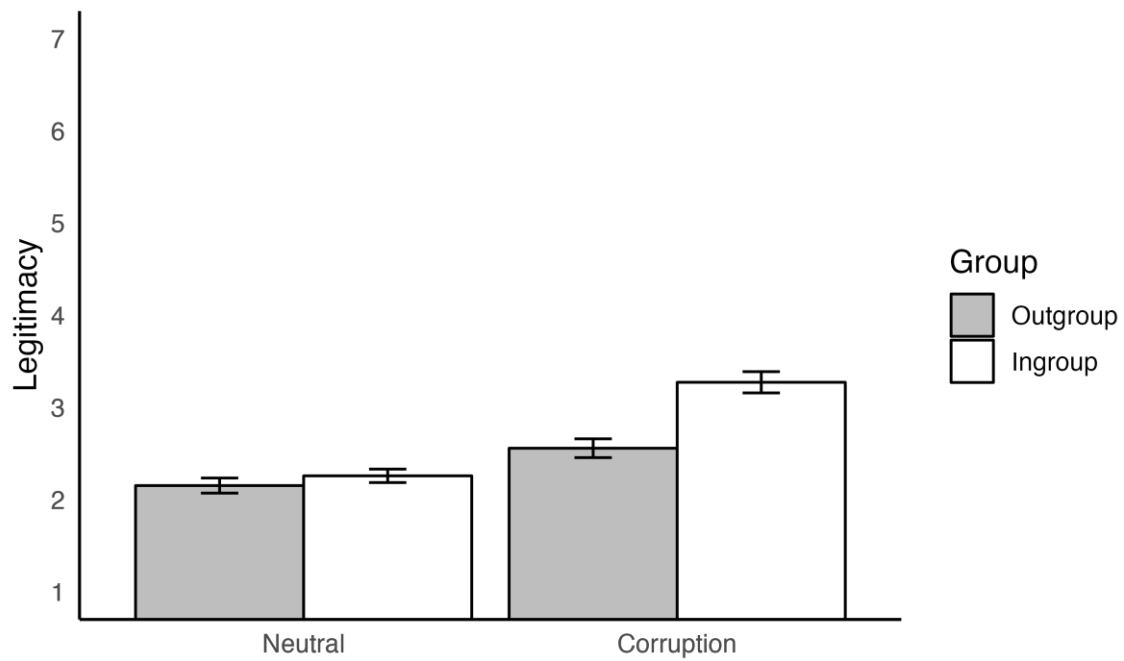
and Group interactively affect the legitimization of illegal attacks. A 2 x 2 between-subject ANOVA on legitimization revealed significant main effects of exposure to corruption, $F(1, 548) = 56.345, p < .001, \eta^2p = .093, 90\% \text{ CI } [0.06, 0.13]$, and group, $F(1, 548) = 18.832, p < .001, \eta^2p = .033, 90\% \text{ CI } [0.01, 0.06]$. Crucially, the interaction was significant, $F(1, 548) = 10.385, p = .001, \eta^2p = .02, 90\% \text{ CI } [0.004, 0.042]$. The means are displayed in Figure 4 and summarized in Table 4. We inspected the pairwise comparisons of the Group in the Exposure to Corruption factor. As expected, when exposed to ingroup corruption, participants legitimized the illegal attack more strongly when enacted by the ingroup than by the outgroup, $t(548) = 5.377, p < .001, d = .65, 95\% \text{ CI } [0.41 \text{ to } 0.88]$. In the neutral condition, with no ingroup corruption, the group membership of the attackers made no significant difference to its perceived legitimacy, $t(548) = 0.786, p = .432, d = .10, 95\% \text{ CI } [-0.14 \text{ to } 0.33]$.

Next, we tested whether schadenfreude differed between levels of the condition employed to manipulate it. A *t*-test on schadenfreude comparing the ingroup and outgroup conditions confirmed that participants reported more schadenfreude when the attack was enacted by the ingroup ($M = 2.51, SD = 1.49$) than the outgroup ($M = 2.08, SD = 1.29$), $t(530.19) = 3.67, p < .001; d = 0.31, 95\% \text{ CI } [0.14, 0.48]$. This result confirmed that the manipulation of schadenfreude was effective: despite the punitive illegal attacks being the same across conditions, the illegal attacks from a disliked outgroup were less likely to evoke schadenfreude.

Finally, we tested whether Exposure to Corruption affects schadenfreude at the level of the condition in which schadenfreude is not expected to be evoked (the outgroup). A *t*-test confirmed that in the outgroup condition, exposure to corruption exerted a significant effect on schadenfreude $t(272.01) = 3.36, p < .001; d = 0.39, 95\% \text{ CI } [0.16, 0.63]$. Participants felt

more schadenfreude when exposed to corruption ($M = 2.30$, $SD = 1.44$) compared to a neutral scenario ($M = 1.81$, $SD = 1.02$).

Figure 4. Mean Legitimization of Illegal Attacks by Conditions



Note. Error bars represent standard errors.

Table 4. Means and Standard Deviations of Legitimization at Different Conditions of Exposure to Corruption and Attacker Group

	<i>M (SD)</i>	<i>M (SD)</i>
	Neutral	Corruption
Ingroup	2.26 (0.87)	3.27 (1.30)
Outgroup	2.15 (0.93)	2.56 (1.26)

Experiment 5

Participants and Design

Two hundred Italian participants were recruited on Prolific. Pre-registered exclusions due to attention checks (<https://aspredicted.org/gwt9-xwdx.pdf>) resulted in a final sample of $N = 195$ (51% men, 48% women, 1% non-binary, and 1% did not report their gender; $M_{\text{age}} = 31.44$, $SD_{\text{age}} = 8.08$). Participants were randomly assigned to one of two conditions (Satisfaction of Attacks: Enhanced vs Baseline) in a between-subjects design. A sensitivity power analysis indicated that the sample size afforded 80% power to detect an effect size $f^2 = .04$, assuming $\alpha = .05$ in a multiple regression where the focal effect of the manipulation was controlled for the other three measured predictors (deservingness, anger, and disgust toward the institution).

Procedure and Measures

All participants read about an episode of nepotism involving the Italian National Institute for Social Security (INPS) through a bogus newspaper article designed to mimic a leading Italian news agency. The article described the existence of a system that facilitated the employment of family members and relatives by functionaries holding key positions within the institution. The practice was portrayed as involving several regional branches.

After reading the article, participants were exposed to the manipulation of the Satisfaction of Attacks. In the Baseline condition, participants read a text describing a cyber-attack conducted by Italian hackers, similar to the text used in previous experiments. In the Enhanced condition, by contrast, participants read a description of an attack designed to enhance feelings of satisfaction involving features of symmetry, altruism, and poetic justice (Tripp et al., 2002). Specifically, participants read:

Shortly after the publication of the article, a group of Italian hackers breached the central and peripheral information systems of the INPS, successfully stealing sensitive institutional data and the personal information of INPS officials.

The hackers' actions caused significant reputational and financial damage to both the affected officials and the INPS as an institution. Additionally, they managed to steal a sum of money equivalent to the costs associated with the illegal hiring of relatives and family members, which was subsequently donated to *Hackers for Charity* – an organization that provides cybersecurity services free of charge to non-profit entities that would otherwise be unable to afford them.

The hackers, who identified themselves as the "Digital People's Paladins," also modified the INPS website into an interactive game titled "*INPS Official Hunt*." In the game, participants navigated a virtual maze of offices to find and "hit" hidden officials using a fly swatter, earning points for each successful hit. Each hit revealed personal details about the official, including a comically edited photo, their phone number, and their address.

After the manipulations, participants completed the measures of *schadenfreude* (4 items; $\alpha = .90$) and *legitimization* (6 items; $\alpha = .84$) as in previous studies. Participants also completed measures of *anger* (3 items; $\alpha = .83$) and *disgust toward the institution* (3 items; $\alpha = .90$) adapted from Experiment 3 and a measure of perceived deservingness of the institution (3 items; "To what extent do you think the INPS officials deserved the negative consequences they experienced?", "To what extent do you think that what happened to the INPS officials was a direct result of their actions or behavior?" and "How much do you think the INPS officials deserved to experience the hacker attack?"; 1 = *not at all* to 7 =

completely; $\alpha = .83$). Finally, participants completed the same check of the institutions' unethical behavior as in prior experiments (3 items; $\alpha = .92$).

Results

Manipulation Checks. A single-sample t-test against the mid-point of the scale (4) confirmed that the institution's actions were perceived as highly unethical ($M = 6.30$, $SD = 1.14$), $t(194) = 28.26$, $p < .001$; $d = 2.02$, 95% CI [1.78, 2.27]. An independent sample t-test comparing the two experimental conditions indicated that the manipulation successfully increased feelings of schadenfreude. Relative to the Baseline ($M = 3.60$, $SD = 1.61$), participants reported significantly more schadenfreude in the Enhanced ($M = 4.36$, $SD = 1.51$) condition, $t(170.29) = -3.34$, $p = .001$; $d = -.49$, 95% CI [-0.78, -0.20].

Main Analyses. The results of the main analyses are summarized in Table 5. Supporting the idea that participants would legitimize the illegal attacks more when the pleasure derived from the attacks was enhanced, a t-test showed that participants legitimized the attacks more in the Enhanced condition compared to the Baseline condition. Our manipulation of satisfaction did not significantly affect feelings of disgust or anger toward the institution, nor the appraisal of deservingness, consistent with the fact that the institution's behavior was identical across conditions.

To examine the robustness of the experimental effect of schadenfreude, we employed a multiple regression model in which our experimental manipulation predicted legitimization while controlling for the other measures. Results are summarized in Table 6. Participants' appraisal of deservingness was associated with the legitimization of the illegal attacks, whereas the associations between anger and disgust toward the institution and legitimization were not significant. The effect of the experimental manipulation remained significant after

Table 5. Means, Standard Deviations, and Test Statistics for the Measures in Experiment 5

Measures	Cond: Baseline	Cond: Enhanced	Test Statistics
	<i>M (SD)</i>	<i>M (SD)</i>	
Legitimization	3.38 (1.19)	3.80 (1.17)	$t(175.02) = -2.47, p = .014; d = -0.36, 95\% \text{ CI } [-0.64, -0.07]$
Anger toward Institution	5.45 (1.11)	5.71 (1.05)	$t(171.31) = -1.66, p = .099; d = -0.24, 95\% \text{ CI } [-0.53, 0.05]$
Disgust toward Institution	5.26 (1.22)	5.24 (1.34)	$t(185.38) = 0.09, p = .927; d = 0.01, 95\% \text{ CI } [-0.27, 0.30]$
Deservingness	4.15 (1.61)	4.24 (1.54)	$t(172.06) = -0.38, p = .706; d = -0.05, 95\% \text{ CI } [-0.34, 0.23]$

Note. Condition was coded as -1 = Baseline, 1 = Enhanced

Table 6. Multiple Regression Model in Experiment 5

Criterion	Predictor	β	b	95% CI	SE	p
Legitimization						
	Condition	.17	.20	0.06, 0.34	0.07	= .006
	Anger	-.05	-.05	-0.23, 0.13	0.09	= .568
	Disgust	-.02	-.02	-0.16, 0.13	0.08	= .841
	Deservingness	.57	.43	0.34, 0.53	0.05	< .001

Note. Condition was coded as -1 = Baseline, 1 = Enhanced

controlling for these other predictors.⁵ VIF values for all predictors in the model were below conventional thresholds for multicollinearity concerns, with anger VIF = 1.92, disgust VIF = 1.90, and deservingness VIF = 1.08. Similar to Experiment 3, in non-preregistered analyses and as an additional robustness check, we created a composite index of moral outrage by averaging the anger and disgust items. Results from this model were consistent with those of the preregistered analysis.

Discussion of Experiments 4-5

The primary objective of Experiments 4 and 5 was to provide stronger causal evidence for the hypothesized mediating process of schadenfreude. These experiments

⁵ As pre-registered, we also conducted a multiple regression in which we predicted legitimization using the measure of schadenfreude in place of the manipulation while controlling for the other measures of deservingness, anger, and disgust toward the institution. The model yielded a similar conclusion: schadenfreude remained significant ($\beta = .50, p < .001$) after controlling for the other emotional reactions and deservingness. Results from this model are summarized in the Supplementary Materials (Table G). Additionally, for both the regression model reported in the main text and the one reported in Table G, removing deservingness did not alter the results. The manipulation ($\beta = .18, p = .018$) and measure ($\beta = .67, p < .001$) of schadenfreude remained significant.

employed two distinct design strategies and manipulations of the mediator. Experiment 4 used a manipulation-of-mediation-as-a-moderator design (Ge, 2023). This design requires creating a condition in which the mediating process is less likely to occur, thereby altering the effect of the independent variable on the dependent variable. We aimed to reduce the likelihood that punitive illegal attacks against corrupt institutions would evoke *schadenfreude* by framing them as carried out by a disliked outgroup. We reasoned that individuals are less likely to attribute fair or justice-restoring motives to outgroup actors (e.g., Moy & Ng, 1996), making such attacks less likely to trigger *schadenfreude*. The results provided experimental support for the mediation hypothesis. Moreover, the findings revealed that participants were more likely to legitimize illegal attacks when they were carried out by an ingroup actor compared to an outgroup.

Experiment 5 employed a causal chain approach to mediation (Spencer et al., 2005), focusing on testing the causal effect of the mediator (*schadenfreude*) on the dependent variable. We manipulated the degree of satisfaction evoked by the attacks by describing them using features that prior research has shown to enhance the perceived satisfaction of retaliation (i.e., symmetry, altruism, and poetic justice Tripp et al., 2002). Results showed that participants were more likely to legitimize attacks that were described as more satisfying, providing additional evidence of a causal link between *schadenfreude* and legitimization. These findings strengthen the case for *schadenfreude* as a key mechanism underlying the legitimization of illegal attacks against corrupt institutions.

Further, Experiment 5 showed that this effect was driven by the experience of *schadenfreude* rather than by other negative emotional responses such as anger or disgust toward the corrupt institution. The effect also remained robust when controlling for general judgments of deservingness. Judgements of deservingness refer to a process of responsibility allocation that often precedes *schadenfreude* (Feather, 2006; Van Dijk et al., 2009). Thus, this

finding underscores that the affective response of *schadenfreude* – the satisfaction felt at witnessing a negative outcome befall a target – remains a determinant of the legitimization of illegal attacks, even when individuals' appraisals of deservingness are taken into account.

Additional Experiments

In the supplementary materials, we describe two additional pre-registered experiments conducted in the context of cyber-attacks targeting an institution engaged in nepotism in Italy (Experiment A) and organized crime intimidation targeting a city council in England involved in bribery (Experiment B). As discussed earlier, groups such as hackers and criminal organizations can be perceived as offering benefits by disrupting powerful actors (Curott & Fink, 2012), yet they may also be harmful to the public (Barnes, 2017; Blok, 1972; Wall, 2017). In these experiments, we directly tested the effect of harm to the public. We conceptualized such harm as a diffuse “cost” of illegal retaliation and examined whether drawing attention to the broader societal costs of illegal retaliation would influence individuals' perceptions of the attacks. Specifically, these experiments explored whether emphasizing the harm these attacks inflicted on the general public would reduce the legitimization of illegal actions. Individuals are typically less supportive of sanctions that entail unjustified harm to non-blameworthy parties (Carlsmith et al., 2002; Darley & Shultz, 1990). Thus, we predicted that the presence of collateral costs to a bystander public, combined with the illegality of the attacks, would make these actions less acceptable.

However, these findings did not support our pre-registered predictions. Despite manipulation checks confirming that participants perceived the costs accurately, we found no evidence that emphasizing either the public harm caused by illegal attacks (Experiment A) or by the mere presence of criminal actors (Experiment B) reduced *schadenfreude* or legitimization. Although the cost manipulations did not yield the expected effect, the results nevertheless provided further support for our two main hypotheses across a broader range of

institutional contexts, forms of unethical behavior, and perpetrating groups. Individuals' legitimization of illegal attacks was influenced by the perceived unethical conduct of the targeted institutions, and the indirect effect through *schadenfreude* was significant. Experiment B also revisited the role of anger directed at institutions, replicating the pattern observed in Experiment 2.

A possible interpretation of the null finding is that participants were willing to bear diffuse societal costs when evaluating illegal retaliation against corrupt institutions. This pattern is consistent with evidence that people sometimes accept costs to sanction wrongdoing (Fehr & Gächter, 2002; Kahneman et al., 1986). Overall, the pattern of results was consistent with the idea that individuals might be willing to tolerate the societal costs of illegal actions when such actions disrupt powerful but corrupt institutions (Curott & Fink, 2012).

General Discussion

The present research aimed to elucidate the processes involved in the increased legitimization of illegal attacks against national institutions that engage in unethical practices, one of the strategies that individuals employ to resist the unfair actions of the powerful (Leach & Livingstone, 2015). In some circumstances, criminal actors can be transformed in public perception from mere criminals to protectors of the people (Hobsbawm, 1965). This transformation occurs when their actions are perceived as retaliation against those in power. Drawing on theorizing on punishment, retaliation, and justice *schadenfreude* (Gollwitzer et al., 2011; Lange & Boecker, 2019; Wang et al., 2019), we hypothesized that witnessing illegal attacks on corrupt ingroup institutions would influence individuals' legitimization of these attacks. Moreover, we hypothesized that these attacks would evoke *schadenfreude*, which in turn would mediate the relationship between exposure to corruption and increased

legitimization of these actions. We found consistent support for our hypotheses in five experiments.

In Experiments 1 and 2, participants were exposed to descriptions of illegal attacks by hackers or mafia groups in the UK and Sicily, respectively. Individuals tended to legitimize these attacks more strongly in response to national institutions' unethical behavior. Additionally, results were consistent with the notion that *schadenfreude* mediated the relationship between exposure to corruption and the increased legitimization of these illegal attacks.

In our experiments, we tested the effect of *schadenfreude* vis-à-vis other emotional reactions against distinct targets. To aid interpretation, Table 7 provides a concise overview of the findings from Experiments 1–3. Experiment 2 ruled out increased anger against the institutions as an alternative explanation. Experiment 3 tested the indirect effect of *schadenfreude* together with other emotional responses to illegal attacks themselves, specifically reduced anger and disgust, which are central to how individuals assess transgressions (Andersson et al., 2024). This study replicated the findings from Experiments 1 and 2. Moreover, it showed that the indirect effect of *schadenfreude* remained robust even when accounting for a reduction of negative emotions toward the attacks. Notably, across studies, the average levels of *schadenfreude* elicited by illegal attacks against corrupt institutions in our studies are comparable to those reported in prior research (e.g., Leach & Spears, 2008; Van Dijk et al., 2009), underscoring that the effects we document fall within the typical range of emotional responses to deserved misfortunes.

Table 7. Summary of Key Effects Across Experiments 1–3

Exp.	Context & Attack Type	Indirect via schadenfreude	Indirect via anger	Indirect via disgust	Direct Effect (IV → DV, controlling for emotions)	Notes
1	UK – Cyberattack	✓	n/a	n/a	X	
2	Italy – Mafia intimidation	✓	X	n/a	✓	Tested anger at institution
3	UK – Cyberattack	✓	✓	X	X	Tested anger/disgust at illegal attacks

Note. ✓ = significant; X = non-significant; n/a = not applicable. Indirect effects are mediation pathways estimated within the same model (IV → mediator → DV). Experiments 4 and 5 (UK – Cyberattack) tested the mediation experimentally (MMM and causal chain designs, respectively) and are therefore not included in this table. In Experiment 5, additional controls for anger and disgust toward the institution (both non-significant) and for deservingness (significant) are reported in the main text. Detailed coefficients and model specifications appear in the main text and Supplementary Materials.

Finally, Experiments 4 and 5 tested the mediation effect of *schadenfreude* experimentally. In Experiment 4, in addition to exposure to corruption, we manipulated a contextual variable to reduce the likelihood of evoking *schadenfreude*. Specifically, the attacks were described as carried out either by the ingroup or by a disliked outgroup. The resulting significant interaction strengthened our confidence in the mediating role of *schadenfreude*. The findings are consistent with the idea that illegal punishment is less likely to evoke *schadenfreude*, and thus less likely to restore a sense of justice, when it is enacted by a disliked outgroup. In Experiment 5, we manipulated how satisfying the attacks were by presenting participants with either an attack described using elements known to enhance the enjoyment of punishment (Tripp et al., 2002) or a baseline description. Results showed that participants were more likely to legitimize attacks that were described as more satisfying, providing further causal evidence for the role of *schadenfreude*. Additionally, Experiment 5 demonstrated that this effect was robust when controlling for negative emotional reactions of anger and disgust toward the corrupt institution, as well as general cognitive appraisals of deservingness.

The critical role of ingroup engagement in punishment revealed in Experiment 4 is theoretically consistent with research on subjective group dynamics theory, particularly the analysis of how people sustain their social identity by ensuring the legitimacy of their ingroup norms and values (Abrams et al., 2021; Pinto et al., 2010). In particular, at a national level, there are multiple agencies with control over specific spheres such as health, welfare, education, etc., and it is possible that, at times, one or other of these is found to be engaging in corrupt or undesirable actions. How, then, can a deviant part of a larger superordinate structure be controlled? One means is via disapproval, derogation, or public outcry, but in the absence of higher-level institutional intervention, people will be psychologically oriented toward preserving the subjective validity of ingroup status by ensuring that the ingroup as a

whole adheres to widely held standards. This is where support for illegal forms of retribution seems to play a role. Punishment of the corrupt agency may contribute to restoring the subjective validity of the ingroup as a whole. The *schadenfreude* that follows from this punishment may reflect the reinforcement of ingroup validity that follows from retribution against a deviant within the group (Abrams et al., 2021). Moreover, Experiment 4 also suggests that the sense of justice being done needs to be achieved through other members of the ingroup and that an outgroup attack on corrupted ingroup entities does not yield the same moral justification process.

In the context of our studies, *schadenfreude* was evoked by the misfortunes of a target perceived as deserving of punishment. However, Experiment 5 showed that a general appraisal of deservingness, in itself, is not sufficient to account for individuals' legitimization of illegal attacks. Rather, the findings underscored the importance of the discrete emotional experience of *schadenfreude*. Participants were more likely to legitimize attacks when these were described using features that heightened the pleasure derived from punishment, even when directly controlling for perceived deservingness.

Notably, the pleasure experienced in response to punishment likely reflects an additional regulatory function of *schadenfreude* in social settings. *Schadenfreude* has a social-distancing function (e.g., see Fischer & Manstead, 2016; Lange & Boecker, 2019), which leads individuals to devalue and disengage from a transgressor (in our case, the institution), even when the transgressor belongs to the same category as them. Notably, however, our findings suggest that *schadenfreude* might also increase participants' affinity toward (and explicit moral legitimization of) others' actions used as punishment (Barron et al., 2023; Yam et al., 2023), even when such actions are illegal and violent. Consistent with this argument, we found that the mediating effect of *schadenfreude* was robust to controls for increased anger and disgust toward the institution (emotions implying devaluation of the

transgressive target; Rozin et al., 1999), as well as reduced anger and disgust toward the illegal attacks (a diminished negative response to the illegal attacks).

Our findings do not exclude the possibility of other models. For example, it is plausible that moral emotions such as anger or disgust toward the corrupt institution precede the experience of schadenfreude in response to the attacks (Leach & Spears, 2008). However, the current studies convincingly show that the experience of schadenfreude remains robust when statistically controlling for these negative emotional reactions. Overall, the research provides compelling evidence that schadenfreude plays a key role in the relationship between exposure to corruption and the legitimization of illegal acts against corrupt national institutions.

Limitations and Future Directions

Experiments 4 and 5 were designed to provide stronger evidence for the mediating role of schadenfreude. Taken together, they offer causal evidence for this mechanism, using different designs and complementary approaches. However, this does not exclude the possibility of bidirectional effects between the variables. For example, punitive actions perceived as more legitimate may themselves elicit greater satisfaction and gratification. Future work could examine this possibility by testing models that allow for reciprocal influences between emotional and evaluative responses.

Moreover, these experiments also have limitations that should be considered. A limitation of Experiment 4 was the strategy we employed to manipulate schadenfreude. By using attacks from a disliked outgroup, our paradigm maintained consistency in the type of punitive actions across conditions while varying the likelihood that the attacks would evoke schadenfreude. However, this approach remained an indirect manipulation of the emotion.

Experiment 5 provided additional support for the causal link between schadenfreude and legitimization by manipulating how satisfying the attacks were. However, our

manipulation of *schadenfreude* combined three elements previously identified as enhancing the satisfaction of retaliation, namely, symmetry of the retaliatory act, altruism, and poetic justice (Tripp et al., 2002). This approach was consistent with our main goal of establishing a causal effect between the mediator and the dependent variable rather than isolating the specific components that drive *schadenfreude* in the context of punishment. Future research should attempt to disentangle these elements and investigate which of them represent necessary or sufficient conditions for increasing individuals' satisfaction when witnessing punishment being meted out.

This research also raises other important questions that should be addressed in future work. A central unresolved issue concerns the motivations that the public attributes to illegal actors such as organized criminal groups or hackers. Understanding how individuals form these attributions for punishment is particularly important (cf. Gollwitzer & Okimoto, 2021), given that the motives of illegal actors are often opaque. For instance, hackers may attack institutions for personal gain, amusement, or broader political agendas (Coleman, 2015). Similarly, there is evidence that groups such as the mafia have strategically framed their attacks as acts of retaliation in defense of “the people” to cultivate public support (Schneider & Schneider, 1994). An especially important question is whether an explicit framing of an illegal attack as system-changing is necessary to generate support, or whether such acts may be deemed acceptable regardless of their stated justification. Future research should also examine how the motives attributed to these actors shape emotional responses. For instance, self-serving motivations may elicit disillusionment or disappointment (Maher et al., 2020), whereas politically or morally framed motivations may heighten *schadenfreude* and, in turn, increase the perceived legitimacy of illegal punishment.

Complementarily, another avenue for future research concerns the public's attributions about the institutions targeted by attacks. Evidence suggests that people ascribe

agentic thinking states (e.g., intentions, goals) more readily than experiential feeling states (e.g., suffering, pain) to organizations (Rai & Diermeier, 2015). In turn, attributing agency tends to heighten emotions such as anger and blame, but may dampen emotions such as sympathy and, importantly, *schadenfreude*, because organizations are not typically perceived as capable of “suffering” in the experiential sense. In our manipulations, we described attacks as harming institutions overall but also specific functionaries within them, leaving it unclear which attributions participants made about the institutions themselves. Future work should examine whether emotional responses, such as *schadenfreude*, differ when institutional “suffering” is construed as damage to an organization’s functioning or reputation, rather than harm to its members.

Additionally, psychological theorizing on individuals’ appraisals of illegal retaliation would benefit from examining further boundary conditions of this phenomenon. Future research should investigate which characteristics of the target, the nature of the attacks, or the identity of the actors involved influence emotional and cognitive responses to illegal retaliation. In our experiments, we focused on bandit-like attacks directed at corrupt institutions. However, similar processes may also apply to other targets, such as business elites or powerful corporate actors. A recent example that illustrates this point is the murder of the UnitedHealthcare CEO in the United States, which sparked significant public debate and, in some segments of the population, celebration (Nai & Vargiu, 2025; Wong, 2024).

The latter incident also highlights the importance of understanding how the social identity of both perpetrators and targets shapes public reactions to illegal retaliation. While our studies involved institutions within the same national category as the participants, portraying them as corrupt may have shifted how such institutions are perceived, potentially recasting them as a distinct subgroup (e.g., the powerful against the people). Concurrently, actors who punish these institutions (albeit criminally) might be viewed as a valued

subgroup, eliciting the sympathies of observers. Notably, when the presence of disliked outgroup attackers heightened the salience of the intergroup context, individuals were less likely to legitimize illegal retaliation. This suggests that individuals may be willing to protect the transgressive in-category subgroup when they categorize it as their own (Abrams et al., 2021). Future research should investigate these complex dynamics of categorization across different contexts and group types.

Finally, particularly reprehensible attacks or attacks directed at institutions that are generally viewed more positively might elicit empathy (cf. Wang et al., 2019), reduce expressions of *schadenfreude*, or weaken the link between *schadenfreude* and the legitimization of these attacks. Notably, the association between *schadenfreude* and legitimization of illegal attacks was relatively weaker when the attacks were described as carried out by organized criminal groups (see Experiments 2 and B). This suggests that feelings of pleasure may have a weaker relationship with legitimization under certain circumstances, such as when the attacks involve violence or are carried out by particularly anti-normative groups. Furthermore, expressions of remorse by the corrupt institution or efforts at reparations might diminish *schadenfreude* and potentially decrease the legitimization of such acts.

Constraints on Generality

Our studies were conducted in two countries (the UK and Italy) and involved non-student samples (demographic details are described in the supplementary materials). They incorporated materials about different actors, including particularly reprehensible organized criminal groups. We explored various forms of corruption, such as fraud and mismanagement of funds, and examined scenarios involving different institutions – ranging from the government to national health systems and statistical agencies – which differ in their levels of partisanship and influence over people. This speaks to the broad generalizability of the

findings. However, it would be essential to examine these processes in additional societies, populations, and communities characterized by varying degrees of institutional capacity and different relationships with institutions and systems of social order. For example, because our sample comprised a relatively larger proportion of highly educated individuals (see demographics information of Experiments 3 and 4 in the supplementary materials), it would be important to test these dynamics among less educated individuals and those from lower socioeconomic backgrounds who tend to perceive institutions as less responsive to their needs (Rasmussen & Nørgaard, 2018; cf. Heering et al., 2020). It is also possible that the dynamics investigated here could differ depending on the societal systems of social order present in a country (democracies vs. autocracies). Additionally, future research should employ longitudinal methods to examine whether these dynamics generalize to the within-person level of analysis (Fisher et al., 2018).

Conclusions

Attacks against institutions carried out by actors such as hackers or organized criminals may pose risks to democratic norms. Consistent with the notion of social banditry, when these attacks are a form of retaliation against corrupt or unjust institutions, illicit actors are more likely to position themselves not as mere offenders but as champions of justice. Further, the findings highlight the critical role of *schadenfreude* in these processes. The social regulatory function of *schadenfreude*, which devalues the transgressor while positively orienting individuals toward the punishment, can foster more favorable evaluations of actions that, while illegal, are seen as restoring justice. Given the high social relevance of this phenomenon, it is essential to further examine how emotional responses such as *schadenfreude* shape individuals' appraisals of illegal forms of retaliation – especially in contexts where institutional legitimacy is in question.

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