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Fuzzy Authoritarian Rule: How Uncertainty Deters Dissent*

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Abstract

Many authoritarian regimes, including some of the world's most populous autocracies, such as China and Egypt, often do not make it clear what views, attitudes, and behaviors people may express openly without being sanctioned. We investigate how the uncertainty that this style of rule instills among people impacts the effectiveness of repression in deterring dissent. We develop a novel argument about how it can magnify the effect of repression by affecting how people understand what repression signals about a regime's resolve to sanction dissent. Our analysis, based on two laboratory experiments conducted in Egypt, confirms our argument and, in the process, challenges aspects of prominent behavioral arguments linking negative emotions to uncertainty. Our results imply that repression is least effective against acts of dissent regimes are opposed to the most and are very clear about their resolve to repress them as a result.

Cambridge University Press, forthcoming

*The authors would like to thank the anonymous reviews of this work, Lisa Anderson, Sarah Bush, Benjamin Carbonetti, Ursula Daxecker, Jen Gandhi, Shareen Hertel, Amaney Jamal, Olena Nikolayenko, Yuree Noh, Emily Sellars, Megan Turnbull, and audience members of the APSA Annual Conference-Montreal, the Second Annual EVAP Research Workshop, Norwegian University of Science and Technology, and Yale University's Protests and Politics around the World conference, for comments on earlier versions of this paper, as well as the APSA-MENA section for financial support. For research assistance, we thank Hood Ahmed, Adam Eddouss, Hassan Gad, Ingie Gohar, Ahmed Nada, and Farah Otozbeer.

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1 Introduction

Several young women, known infamously as the TikTok Girls, were arrested in Egypt at the outset of this decade for posting videos of themselves dancing to popular songs on the eponymous social media platform. The women were convicted for violating family values and human trafficking, having urged followers to publish videos on another platform paying users for clicks earned. Yet, the women were not unusually dressed and, at the time, countless other Egyptian women had posted similar videos and had monetized their accounts. After the TikTok Girls' arrest, a petition circulated online asking: "If TikTok women are being punished for their content that 'violates the Egyptian Family Values', could we at least know what are those values?"[1]

As the case of the TikTok Girls illustrates, many authoritarian regimes, including some of the world's most populous autocracies, such as China and Egypt, do make it unclear what views, attitudes, and behaviors people can openly express without being sanctioned. In Egypt, the cybercrime law under which the TikTok Girls were prosecuted does not define "public morality" or "family values."[2] In China, people can be arrested for the equally vague crime of "picking quarrels and stirring up trouble."[3] Under state law prohibiting it, people have been arrested for a wide range of acts, including accusing the government of corruption and poor governance, likening President Xi Jinping to Winnie-the-Pooh, and referring to him as Steamed Bun Xi. In this study, we do not attempt to explain why autocrats rule in this way, but how the uncertainty that this style of rule generates for people affects their likelihood to dissent.

This style of governance, which we refer to as fuzzy authoritarian rule, can have a sig-

[1] "Digital Campaign Supports TikTok Women Arrested over 'Egyptian Family Values' Law," *Egyptian Streets*, 15 July 2020.

[2] "Law No. 175 of 2018 on Anti-Cyber and Information Technology Crimes," *WIPO Lex*, *https* : *//www.wipo.int*, Accessed 4 June 2025.

[3] US Department of State, 2021, *Country Reports on Human Rights Practices: China*, Washington, DC: U.S. Department of State.

nificant effect on dissent, we contend, and its converse, self-censorship. Self-censorship is pervasive in authoritarian regimes and can have as great, if not a greater effect, than censorship on the survival of authoritarian regimes (Shen and Truex 2021).[4] Even when access to censored materials is possible, individuals commonly restrict themselves, forgoing opportunities to acquire banned materials unless these materials are especially desirable or inexpensive to obtain (Chen and Yang 2019; Roberts 2022). While self-censorship can make it difficult for autocrats to identify and forestall potential threats to their authority (Wintrobe 1998), it can also inhibit collective action against authoritarian regimes by preventing individuals from knowing the extent of their shared opposition to these regimes (Kuran 1995).

Fuzzy authoritarian rule, we argue, makes acts of repression more effective in deterring dissent by instilling uncertainty among people about the probability of being sanctioned for dissent. Uncertainty, in this sense, can have a powerful deterrent effect on dissent, as Joshua Wong, a prominent Hong Kong activist and Nobel Prize candidate, remarks. According to Wong, "Uncertainty creates a perfect environment for self-censorship."[5] Hossam el-Hamalawy, his Egyptian counterpart, makes this point even more sharply. In his view, "[t]he absence of red lines not only leads to self-censorship, but it leads to self-paralysis."[6]

Uncertainty, we argue, makes acts of repression more effective in deterring dissent by affecting how people understand what repression conveys about a regime's resolve to sanction dissent. This results in higher expectations of the risk of sanction and/or greater certainty that this risk is high. Uncertainty, we further argue, is likely to maximize the deterrent effect of repression by making people less likely to discount the information that repression conveys about a regime's resolve when repression is inconsistent with their expectations.

[4]Self-censorship is defined in general terms as "withholding of one's true opinion from an audience perceived to disagree with that opinion" (Hayes, Glynn and Shanahan 2005, p.299). It has been more broadly construed to involve misrepresenting one's views (i.e., preference falsification) (Kuran 1995), or otherwise acting 'as if' one shares others' views (Wedeen 1999). We do not include these broader definitions in this analysis.
[5]Personal Communication, 12 September 2020.
[6]Personal Communication, 14 June 2022.

Uncertainty, we contend, is unlikely to make repression more effective in deterring dissent by intensifying negative emotions, as psychology-based arguments predict. While emotions may affect the likelihood of people to dissent, the effect of uncertainty on emotions, we hypothesize, is conditional on people's expectations of the risk of sanction. Uncertainty, we argue, is likely to intensify negative emotions relative to certainty when people believe prior to repression that the risk of being sanctioned for dissent is low. It is likely to have the opposite effect when they believe it is high.

Most research on authoritarian regimes focuses on the types of institutions associated with authoritarian regimes and their effect on regime stability (Brancati 2014). The limited research that exists on this style of rule also argues that uncertainty suppresses dissent (Stern and Hassid 2012; Tapscott 2021). However, our research differs from this research in several important ways. We conceptualize this style of rule and uncertainty differently and/or propose an alternative mechanism by which uncertainty constrains dissent. We identify the conditions under which uncertainty is more likely to reduce dissent and who uncertainty is more likely to affect. We also take a different methodological approach to understanding the relationship between uncertainty and dissent. While extant research relies primarily on interviews to theorize inductively about the effect of uncertainty on dissent, we develop our argument deductively and test it experimentally.

The empirical analysis consists of two laboratory experiments conducted in Egypt – an authoritarian regime where, like many authoritarian regimes, the lines of permissible forms of dissent are often unclear (Sadek et al. 2024). Our experimental results show, as expected, that uncertainty magnifies the deterrent effect of repression, especially when repression is inconsistent with people's expectations. The effect, we find, is most likely due to people's receptivity to the information that repression conveys about a regime's resolve to sanction dissent when they are uncertain of the risk of sanction prior to repression. Negative emotions, we find, are potentially important in reducing dissent. However, uncertainty does not always

intensify negative emotions. This, we find, depends on people's prior expectations regarding the risk of sanction.

These findings not only help to explain the impact of fuzzy authoritarian rule on dissent, but also contribute to the existing research on state repression and the repression-dissent nexus in particular. The latter concludes that state repression has mixed effects on dissent (Davenport 2007*a*; Earl 2011; Davenport and Appel 2022). According to it, repression reduces dissent in some cases, increases it in others, and has no effect on it at all in others. Our argument offers a novel explanation for why repression is more effective in some contexts than in others. The findings help explain why the effect of repression varies across authoritarian regimes and within states across issues and among individuals, regardless of ideology.

The study proceeds as follows: We first describe what we mean by fuzzy authoritarian rule, its effects on uncertainty, and how authoritarian regimes foster uncertainty in order to provide context for our argument about how uncertainty affects dissent. We then discuss the existing literature on state repression to demonstrate the contribution of our argument to it. Afterwards, we present our argument about information and consider an alternative pathway through which uncertainty may affect dissent, namely emotions. We subsequently present two experiments to test our argument and this alternative explanation for why uncertainty is likely to maximize the deterrent effect of repression. In the conclusion, we review our findings, discuss their contribution to existing knowledge about authoritarian governance, repression, and dissent, and present the broader implications of our argument.

2 Fuzzy Authoritarian Rule

Fuzzy authoritarian rule, we define, as a style of governance associated with authoritarian regimes in which it is unclear what views, attitudes, and behaviors people may express openly

without being sanctioned.[7] In this context, people may not know where regimes stand on issues and, thus, what constitutes dissent, as well as what forms of dissent regimes are willing to tolerate. Sanctions can take many forms in authoritarian regimes, including physical harm (e.g., incarceration, forced disappearances, and assassinations), as well as financial loss (e.g., unemployment and missed educational opportunities). Fuzzy authoritarian rule is not another term for regimes that are quasi-autocratic (Brancati 2014). Scholars have developed other terms to describe these regimes – anocracies, competitive authoritarian regimes, electoral authoritarian regimes, hybrid regimes, and semi-democracies (Schedler 2002; Levitsky and Way 2010).

Fuzzy authoritarian rule exists across authoritarian regimes. It exists in weakly authoritarian regimes and strongly authoritarian states, such as China, Egypt, and Saudi Arabia. It is unlikely to exist, though, at the extreme end of authoritarian regimes, where no dissent is permitted and all dissent is consistently repressed, as in North Korea. This style of governance is not associated with a particular type of authoritarian regime either (e.g., military, monarchical, party, or personalist regimes). Rather, it varies across authoritarian regime types.

Fuzzy authoritarian rule also varies across leaders, with some autocratic leaders ruling in a clearer manner than others. The extent to which autocrats make it clear how people may express themselves openly without being sanctioned likewise differs across issues. Some autocrats, that is, can make their willingness to tolerate certain views, attitudes, or behaviors clearer than others. These issues likewise differ across regimes and leaders over time. One issue, though, that autocrats seem to universally make their opposition to clear is sedition since sedition poses an existential threat to authoritarian regimes (Brancati 2016).

[7]Put simply, the red lines that if crossed will result in people being sanctioned are fuzzy in this style of rule. Our concept is distinct from the concept of "stealth authoritarianism," which refers to the "use of legal, primarily sub-constitutional, mechanisms that exist in regimes with favorable democratic credentials" (Varol 2015, 1733).

Take, for example, Saudi Arabia, a country notorious for its high level of regulation of public and private spaces. The extent to which this country's leadership has made its positions clear on certain issues has varied over time. For decades, the red lines were clear and rigid under the House of Saud. When Crown Prince Mohammed bin Salman (MBS) initiated reforms to modernize the country, though, these lines became fuzzy for many political and social issues (Sadek et al. 2024). According to Lina al-Hathloul, a prominent Saudi human rights activist, "[m]ost Saudis know MBS is not a reformer," but now "[w]hat is even worse is that they do not know where the red lines are."[8] In Saudi Arabia, according Nadyeen Abdulaziz, this is due to "the absence of a consistent ideology, policy or clear alliances."[9] The monarchy, for example, now permits mixed-gender events. However, the country's highest religious body, the Council of Senior Scholars, has issued fatwas declaring some of these practices haram, and it is illegal to violate them.

2.1 Foundations

Authoritarian regimes can make it difficult for people to know what views, attitudes, and behaviors they may openly express without being sanctioned for various reasons. Information about laws tends to be less accessible in authoritarian regimes than in democracies. Autocracies, for examsple, scored one-third of a point lower than democracies on the World Justice Project's (WJP) open government index in 2025.[10] This index measures the extent to which legal information is easy to understand, publicly available, and accessible.

Laws can also be vague, excessively broad, and contradictory in authoritarian regimes, as the previous example of Saudi Arabia illustrates. Even though laws can be vague in

[8] Lina al-Hathloul, interview by Christiane Amanpour, *CNN*, 19 February 2021.

[9] Nadyeen Abdulaziz, Personal Communication, 15 October 2025.

[10] Figures based on 136 countries are calculated by the authors. Specifically, autocracies scored an average of 0.337 in 2025 on the "publicized laws and government data" component (0-1) measuring government openness on the WJP Rule of Law Index, while democracies scored an average of 0.558. Democracies, we define, as states scoring 0.500 or above on the V-Dem Electoral Democracy Index (2024), while autocracies are states scoring below 0.500. World Justice Project, *https* : *//worldjusticeproject.org/rule* − *of* − *law* − *index/*. Accessed 28 October 2025.

democracies (Endicott 2000), laws are likely to be clearer, more narrowly defined, and more coherent in democracies than in authoritarian regimes.[11] Autocratic regimes can use vague laws to repress the opposition while maintaining a veneer of legality (Ginsburg and Mustafa 2012), and generally lack independent courts that clarify how laws ought to be interpreted and applied (Helmke and Rosenbluth 2009).

Many authoritarian regimes, for example, have vague laws against "insulting" state institutions that do not define what constitutes an insult. This includes Egypt, Russia, Thailand, and Zimbabwe, among others. In these countries, an insult has been interpreted as a statement directly criticizing the policy, performance, competency, or appearance of state institutions and their leadership, as well as a basic lament about societal conditions. In Thailand, a US academic was recently arrested for insulting the monarchy after stating that the king had authority over changes in the country's military leadership.[12] In the past, people have been arrested in Thailand for the same offense for comments made about the king's beloved dog.[13]

Laws against fake news and terrorism are similarly ill-defined in many authoritarian regimes. Russia, for example, defines fake news as "unreliable" information "disguised as accurate" information, but does not define what it means to be unreliable.[14] Numerous journalists, activists, and ordinary people have been jailed in Russia for "fake news" regarding

[11] Legal scholars suggest that vague laws across regime types can allow for just outcomes and that, legal vagueness, by implication, is an intentional aspect of law for this purpose. According to Timothy Endicott (2005), vagueness can be useful because it allows for the inclusion of borderline cases, enables courts to more effectively establish just and legal standards, especially where quantifiable standards do not exist, and allows for just ordering, among other things. In authoritarian regimes, vagueness, according to legal scholars and practitioners, serves an additional purpose, namely to attack the opposition while maintaining a veneer of legality. Since courts are generally less independent in authoritarian regimes (Helmke and Rosenbluth 2009), courts are less likely, in this case, to refine how laws ought to be interpreted and applied in judicial decisions.

[12] Isabella Kwai, "American is Arrested in Thailand on Charges of Criticizing Royalty," *The New York Times*, 9 April 2025.

[13] Nash Jenkins, "A Thai Man Faces Nearly 40 Years in Jail for Insulting the King's Dog," *Time*, 15 December 2015.

[14] "Federal Law No. 149-FZ on Information, Information Technologies and Protection of Information (amendment 2020)," *WIPO Lex*, *https* : *//www.wipo.int*, Accessed 24 June 2025.

the Russo-Ukrainian War.[15] Sometimes, those jailed directly opposed the war. At other times, they simply expressed sympathy for Ukraine or commented on the intensity of the violence conducted by Russia during it. Initially, ultra-nationalists who criticized the war effort for being too weak were not arrested. However, after a failed mutiny by mercenaries fighting the war, they too were arrested for spreading fake news.[16]

In Saudi Arabia, anti-terrorism laws include non-violent acts, such as "disturbing public order," "shaking the security of the community and the stability of the state," and "exposing its national unity to danger."[17] Many women's rights activists in Saudi Arabia have been arrested for terrorism under this law. This includes Loujain al-Hathloul, who advocated for an end to male guardianship rules and spearheaded a campaign against a now-defunct ban on women driving. As part of the latter campaign, al-Hathloul famously filmed herself attempting to drive from the United Arab Emirates into Saudi Arabia, where she was detained and held for months.

In Egypt, anti-terrorism laws likewise include non-violent acts, which disturb public order, endanger the safety, interests, or security of Egyptians, or prevent public authorities from carrying out their work, among other things.[18] Under this law, the Egyptian regime arrested several young adults for a parody they posted on TikTok about visiting a prison.[19] The video depicts a woman visiting a friend, imprisoned for arguing with someone in power. The group had previously posted videos sarcastically discussing price hikes and the devaluation of the Egyptian pound without incident.

Not only are laws frequently broad, vague, and contradictory in authoritarian regimes,

[15] Uliana Pavlova, "Russian Teen Faces Years in Jail over Social Media Post Criticizing War in Ukraine," *CNN*, 29 January 2023.

[16] Tim Lister, Anna Chernova and Sophie Tanno,"Ultra-nationalist Military Blogger Arrested in Moscow," *CNN*, 1 September 2023.

[17] "Saudi Arabia: New Counterterrorism Law Enables Abuse," *Human Rights Watch*, 17 November 2017.

[18] "Law No. 94 of 2015 on Confronting Terrorism," *WIPO Lex*, *https* : *//www.wipo.int*, Accessed 4 June 2025.

[19] "Egypt: Three TikTok Influencers Arrested after Parody Video of Jail Visit," *Middle East Eye*, 30 January 2023. AFTE, "8 Months After Being in Pretrial Detention over Sarcastic Content, the Creators of the Visit Video were Released under the Guarantee of their Residence among Dozens of Others," 30 September 2023.

but they are also often enforced in arbitrary and opaque ways. In democracies, this is less common because the government is subject to the will of the people and the scrutiny of an independent media. Democracies scored twice as high as autocracies in terms of due process (i.e., the clarity and coherence of their laws and the predictability of their enforcement) in 2024, according to V-Dem.[20] In Iran, in what became known as the "happiness campaign," the government arrested an elderly shop owner when a video of him dancing in public went viral.[21] Dancing is not illegal in Iran, but the constitution prohibits "indecent" acts. His arrest inspired others to dance in public as well and to share videos of themselves dancing on social media. After initially shuttering the shop owner's Instagram account for "criminal content," the government released him, saying that he had never been detained, and restored his account.

Enforcement can be opaque because authoritarian regimes regularly fail to provide formal charges for arrests and issue unclear court rulings. They also frequently charge people with crimes that they did not commit to punish them for other acts likely to attract more domestic and international scrutiny (Varol 2015; Pan, Xu and Xu 2026). Take, for example, the case of Loujain al-Hathloul. Al-Hathloul was convicted in an anti-terrorism court for violating national security, among other things. In the court case against her, tweets about her involvement in the #Women2Drive campaign were provided as evidence of her wrongdoings. However, the court decision never specified how her activism undermined national security. Al-Hathloul was detained for nearly a year before charges were issued and released early with little explanation.

Authoritarian regimes, lacking an independent media, also commonly censor coverage of

[20] In 2024, according to V-dem, democracies (states scoring 0.500 or above on the Electoral Democracy Index) were rated an average of 2.99 for having laws that were "clear, well publicized, coherent (consistent with each other), relatively stable from year to year, and enforced in a predictable manner" (transparent laws and predictable enforcement). Autocracies (states scoring below 0.500 on this index), were rated an average of 1.58). Figures based on 179 states.

[21] Farnaz Fassihi and Leily Nikounazar, "A Viral Dance and 'Happiness Campaign' Frustrates Iran's Clerics," *The New York Times*, 17 December 2023.

repression or shift blame for it onto others. President Vladimir Putin, for example, refused to take responsibility for the dramatic poisoning of political activist Alexei Navalny. Navalny, an outspoken critic of Putin, fell critically ill on a plane after he was poisoned by a nerve agent, apparently placed in his underwear. Initially, Putin denied Navalny was poisoned although Navalny was poisoned with Novichok, an agent only the Kremlin produces.

Similarly, the Saudi monarchy initially denied any involvement in the death of Jamal Khashoggi. In 2018, the journalist and vocal critic of the Saudi monarchy was killed, dismembered, and subsequently smuggled out of the Saudi consulate in Turkey, where he was seeking marriage-related documents. After initially claiming that Khashoggi had not been killed, Saudi officials eventually said Khashoggi was accidentally killed in an unauthorized operation by intelligence agents. According to a US intelligence investigation, Crown Prince Mohammed bin Salman approved and likely ordered the operation.[22]

There are potentially many reasons why red lines are fuzzy in authoritarian regimes. Authoritarian regimes may rule in unclear ways to appear benevolent to Western states. The image of a benevolent dictator may raise the international status of regimes, encourage foreign investment (Blanton and Blanton 2007), or discourage Western states from interfering in states' domestic affairs. It may also dampen domestic backlash (Pan, Xu and Xu 2026). Authoritarian regimes may also rule in unclear ways as part of an intentional strategy to deter domestic dissent. Or, they may rule in this way for non-strategic reasons, such as fissures among state leadership (Svolik 2009) or insufficient resources to consistently enforce laws. It is impossible to know why autocrats behave in these ways. In this study, we do not attempt to explain why they do, but rather how the uncertainty that this style of rule generates for people affects their likelihood to dissent.

[22]"CIA Concludes Saudi Crown Prince Ordered Jamal Khashoggi's Assassination," *The Washington Post*, 16 November 2018.

2.2 Implications for Uncertainty

Not surprisingly, in this environment, people are often uncertain how likely a regime is to sanction different forms of dissent. Although some authoritarian regimes, such as North Korea, leave little room for dissent, cracking down on even the slightest infraction, most authoritarian regimes tolerate some forms of dissent. We consider dissent to be any expression of views that differ from the policies, actions, norms, values, customs, and so forth of a regime.[23] Dissent can take many forms. It can be verbal or non-verbal, formal or informal, intentional or unintentional, spontaneous or organized, and singular or collective. We focus our analysis on verbal forms of dissent. They are the foundation for other forms of dissent, such as coups d'état and protests, and are more common than them as well.

The extent to which people are uncertain of the probability of being sanctioned for dissent, we refer to as *punitive uncertainty*.[24] While we consider punitive uncertainty to be a spectrum, we often speak of it in terms of certainty and uncertainty to facilitate comprehension. Certainty is high when individuals are very sure that they know the probability of being sanctioned for dissent. Uncertainty is high, conversely, when individuals are very unsure of the probability of being sanctioned for dissent.

Punitive uncertainty is distinct from the expected risk of sanction (i.e., the probability of being sanctioned). When certainty is high, individuals may be very sure that the probability of being sanctioned for dissent is high, or they can be very sure that the probability of being sanctioned for dissent is low. Certainty is high, for example, when people are very sure that the probability of being sanctioned for demanding democratic reforms is great. Given

[23] Dissent broadly refers to the expression of views that differ from others (Jetten and Hornsey 2014).

[24] In economics, uncertainty is defined as a state in which individuals do not know the probability of a future event to occur and certainty as the opposite (Knight 1921). We conceive of uncertainty more colloquially as a spectrum measuring the extent to which individuals are unsure of the probability of a future event to occur – in this case, being sanctioned for dissent. People can also be uncertain regarding the severity of the sanction. We anticipate that uncertainty will have less of an effect on dissent, the less severe people expect the risk of sanction. However, the effect of uncertainty regarding punishment severity is outside the scope of our analysis.

that democracy poses an existential threat to authoritarian regimes, this is likely the case for most people in authoritarian regimes. It is also high for people in authoritarian regimes when they are very sure that the probability of being sanctioned for using a VPN (virtual private network) is low. Even autocracies that restrict the use of VPNs, such as China and Cuba, rarely sanction ordinary people for using them, sanctioning VPN-sellers instead.

Similarly, when uncertainty is high, the expected risk of sanction may be low or high. When uncertainty is high, the expected risk of sanction may be high because events, such as a change in leadership or international pressure, raise doubts as to whether regimes will penalize acts of dissent they had always sanctioned (Lachapelle 2020; Grewal 2024). Many Iranians, for example, believed, but were uncertain, that the risk of being sanctioned for not wearing a hijab was high shortly after the Masha Amini protests. The deadly protests against Iran's mandatory hijab law were rumored to have produced a split in the country's leadership over the law.[25] At the same time, when uncertainty is high, the expected risk of sanction may be low, because a regime rarely imposes penalties against acts of dissent that violate state law. This was likely the case with the TikTok Girls.

To facilitate comprehension, we have created a typology depicted in Figure 1, describing people with different levels of uncertainty and expectations of risk.

Figure 1: Typology

		uncertainty	
		low	high
risk	low	certain optimist	uncertain optimist
	high	certain pessimist	uncertain pessimist

Uncertain pessimists are people who believe, but are uncertain, that this risk of sanction

[25] Farnaz Fassihi and Leily Nikounazar, "Iran's Onerous Hijab Law for Women is Now a Campaign Issue," *The New York Times*, 24 June 2024.

is high.[26] *Certain pessimists* are people who are certain that the risk of sanction is high. Certain pessimists, we anticipate, are less likely to dissent in general than uncertain pessimists because they are confident that the risk of sanction is high, and the higher people believe that the risk of sanction is, the less likely they are to dissent. *Uncertain optimists*, in contrast, are people who believe, but are uncertain, that the risk of sanction is low, while *certain optimists* are people who are certain that the risk of sanction is low. Certain optimists, we anticipate, are more likely to dissent in general than uncertain optimists because they are confident that the risk of sanction is low, and the lower people believe that the risk of sanction is, the more likely they are to dissent. Anyone – activists, ordinary people, and regime insiders – can belong to any one of these categories. Which category people belong to can vary across issues over time within regimes. A person, for example, may be an uncertain optimist regarding one issue and a certain pessimist regarding another.

When regimes are not clear, people's estimates of the risk of sanction for a given issue can differ widely from one another. That is, people can have very different expectations from each other regarding the risk of sanction when regimes are not clear about how willing they are to tolerate particular forms of dissent. For the same act of dissent, some people may believe that the risk of sanction is low, while others may believe that it is high. Uncertainty is not synonymous with a middling level of risk. People's expectations of the risk of sanction are especially likely to vary from each other in this context based on people's particular knowledge, experiences, assumptions, and so forth.

After the arrest of the TikTok Girls, there was a lot of uncertainty in Egypt as to what people could post on social media without being sanctioned, and differing views of the level of risk associated with it.[27] Anecdotally, some young Egyptians, who were uncertain of this

[26]The terms optimist and pessimist are not meant to imply that people's estimates of the risk of sanction are rose-colored and, consequently, above the actual risk of sanction, or gloomy and, thus, below the actual risk of sanction.

[27]Gabriele Cosentino, "TikTok in Egypt: Where Rich and Poor Meet – and the State Watches Everything," *The Conversation*, 7 May 2025.

risk, believed that the risk was low for most women making posts similar to the TikTok Girls. In their view, the TikTok Girls were likely only targeted because they were influencers with large followings. Many believed that the regime targeted these female influencers because of their reach and ability to gain financial independence outside traditional family and work structures. However, others who were uncertain of this risk believed that the risk was high because of the wide discretion that the country's cybersecurity laws gave the regime to crack down on dissent. Moreover, any post can go viral even for people with few followers.

2.3 Alternative Regime Classifications

Although authoritarian regimes often do not make it clear what views, attitudes, and behaviors people can express without being sanctioned, there has been little research on this style of authoritarian rule (Tapscott 2021; Stern and Hassid 2012). Existing research that distinguishes among authoritarian regimes tends to focus instead on who makes the decisions within these regimes and on the extent to which authoritarian leaders utilize non-violent versus violent means to maintain power. Research, which decomposes authoritarian regimes in this way, does not generally analyze the effect of authoritarian regimes on self-censorship. Instead, it focuses on outcomes, such as regime collapse and leadership turnover, which can result from certain forms of dissent, such as protests and coups d'état.

Research on the former distinguishes among regimes based primarily on their institutions. They focus on whether authoritarian regimes have institutions similar to democracies, who leads the regimes (e.g., civilians, the military, or a royal family), and how much influence regime insiders and the general public exert on autocratic decisions. Authoritarian regimes with institutions, such as legislatures, that address societal demands and co-opt the opposition are generally thought to be more stable than those that do not (Gandhi 2008). Party-based regimes, and regimes that allow for elite power-sharing more broadly, are also perceived to be more stable than personalist regimes, military regimes, and monarchies be-

cause they are less vulnerable to internal splits (Magaloni 2008; Svolik 2012; Yom and III 2012; Geddes, Wright and Frantz 2018; Anckar 2018; Meng 2020). Junta-based military regimes, where a group of officers governs and controls access to political offices, are believed to be less stable than personalist or strongman military regimes due to their preferences for military unity (Geddes 2003; Kim and Kroeger 2017).

Research on the latter distinguishes among authoritarian regimes based on the extent to which regimes rely on violent versus non-violent means to remain in power (e.g, co-optation, propaganda, disinformation). Davenport (2007*b*) finds that single-party regimes are less repressive than personalist and military regimes because they incorporate a greater proportion of the population into the political process. Franz, et al. (2020) argue that personalist regimes rely more on repression than other regimes because they have few noncoercive means to co-opt people but have loyal and reliable security forces. Xu (2021) looks at a particular type of noncoercive tool autocrats use to remain in power, digital surveillance. He argues that authoritarian regimes with access to digital surveillance rely more on non-violent means to remain in power because digital surveillance allows regimes to precisely target opponents. In contrast to this research, we look at a style of rule that makes state repression more effective by fostering uncertainty among people regarding the probability of being sanctioned for dissent. This style of rule cuts across authoritarian regime types.

The little research that exists on this style of rule similarly argues that uncertainty suppresses dissent and promotes self-censorship (Stern and Hassid 2012; Tapscott 2021). Our research, though, differs from this research in several important ways. We conceptualize this style of rule and uncertainty differently and/or propose an alternative mechanism by which uncertainty constrains dissent that focuses on information rather than emotions. We further identify the conditions under which uncertainty is more likely to reduce dissent and among whom. We also adopt a different methodological approach. While this research primarily uses interviews to theorize inductively about the effect of uncertainty on dissent,

we develop our argument deductively and test it experimentally. The experiments allow us to establish the causal effect of uncertainty on dissent. We also use interviews of activists, government officials, and ordinary people in our analysis, but we use them primarily to triangulate and elucidate our claims and to design our analysis and interpret our results.

Rebecca Tapscott, for example, attempts to explain how states develop what she calls arbitrary governance and how it affects collective action (Tapscott 2021). Her conceptualization of arbitrary governance and the uncertainty it produces differs from our concept of fuzzy authoritarian rule and uncertainty. Our concept of fuzzy authoritarian rule is broader. Arbitrary governance refers to how different institutions within states capriciously claim or deny jurisdiction over issues, particularly in state and security sectors. It is one reason why laws can be enforced in arbitrary ways in authoritarian regimes and why regimes do not make it clear what views, attitudes, and behaviors people may express openly without being sanctioned.

Arbitrary governance, Tapscott argues, produces fear and uncertainty among the populace regarding which authority will intervene in a situation and what rules it will apply.[28] The uncertainty that this style of rule produces, she argues, helps prevent collective action against regimes by making states seem coherent and authoritative, and by preventing people from having a shared understanding of how states behave. The system, she posits, does not result from a grand strategy by elites, but from a combination of historical and endogenous factors. Tapscott develops her argument through hundreds of interviews with a broad cross-section of Ugandan society, including members of opposition groups, former government leaders, and locals.

Stern and Hassid (2012) analyze authoritarian rule from a perspective similar to ours.

[28]Our concept of uncertainty is similarly broader. Uncertainty regarding "which authority will intervene in a situation and what rules it will apply" (Tapscott 2021, p. 157) can lead to uncertainty about "the probability of being sanctioned for dissent" (p. 13). The latter, however, can result from other factors that have been previously specified, such as broad and opaque laws, unclear and non-transparent court rulings, and so forth.

They conceptualize uncertainty in terms of not knowing what acts of dissent authoritarian regimes will repress. Although they do not elaborate on the reasons for uncertainty, as we do, they also argue that this uncertainty increases self-censorship. According to Stern and Hassid, "uncertainty over the limits of political tolerance amplifies repression and pushes people to control themselves" (p. 1233). They propose a different explanation about how uncertainty reduces dissent. They argue that uncertainty increases self-censorship by fostering fear and anxiety among people. They also take a different approach to analyzing this issue. They develop their argument inductively based on hundreds of interviews with professionals (e.g., journalists and lawyers) in China. We consider the potential effect of uncertainty on emotions in greater detail in subsequent sections and test its effect on dissent experimentally.

Other conceptualizations of uncertainty related to authoritarian regimes define uncertainty in terms of a regime's actual or perceived hold on to power (Schedler 2013; Bernhard, Edgell and Lindberg 2020; LeBas and Young 2024). Studies of this type of uncertainty examine how uncertainty affects the strategies autocrats use to maintain power, the choices opponents make about challenging this power, and ultimately, the survival of authoritarian regimes. Alternative conceptualizations of uncertainty discussed in relation to authoritarian regimes define uncertainty in terms of societal uncertainty (i.e., the breakdown of society's leadership and social fabric) (Neerdaels et al. 2026) and self-uncertainty (i.e., doubts about one's identity, beliefs, and societal role) (Schoel et al. 2011; Rast III, Hogg and Giessner 2012). Studies of these forms of uncertainty examine how uncertainty leads people to support authoritarian leaders out of a desire for order, structure, and clarity.

3 Relationship between State Repression and Dissent

For decades, researchers have debated whether state repression reduces dissent, increases dissent, or has no effect on dissent at all (Earl 2011; Davenport and Appel 2022). By state

repression, we mean hard repression – the use of physical force against either an individual or organization.[29] In recent years, the debate regarding repression has shifted. Instead of asking whether or not state repression reduces dissent, researchers have focused instead on identifying the conditions under which state repression reduces dissent. This growing body of research highlights the environment in which repression takes place, the nature of the repression, and the characteristics of the repressed.

Research on the environment in which repression takes place has emphasized the differences between authoritarian and democratic regimes. This research has generally concluded that authoritarian regimes are more effective in repressing dissent than democracies (Gupta, Singh and Sprague 1993). Democracies, according to this research, are more limited in the force that they may use against the public due to democratic norms and are likely to provoke protests for violating these norms (Carey 2006). Numerous studies have demonstrated a backlash to the excessive use of force against protesters in democracies (Bloom 2020). Democracies also have a free media, which limits the ability of leaders to control the narrative regarding repression and discredit the opposition (Kim, Whitten-Woodring and James 2015; Pop-Eleches and Way 2023).

Meanwhile, research on the nature of the repression has highlighted the intensity, scope, overtness, and timing of repression. Intense repression is hypothesized to reduce repression because it instills fear among the populace and makes it difficult for individuals to organize against regimes (Lichbach 1987; Gupta, Singh and Sprague 1993; Booth and Richard 1996; Moore 1998; Bellin 2004; Girod, Stewart and Walters 2018). Targeted repression is argued to be more effective than diffuse or collective repression because the latter reveals a state's inability to surveil the opposition (Blaydes 2018) and increases solidarity among the

[29]Robert J. Goldstein defines state repression as "the actual or threatened use of physical sanctions against an individual or organization, within the territorial jurisdiction of the state, for the purpose of imposing a cost on the target as well as deterring specific activities and/or beliefs perceived to be challenging to government personnel, practices or institutions" (quoted in Davenport (2007*a*), p. 2).

opposition (Nugent 2020).

Repression, meanwhile, targeted against clandestine activities (e.g., training and funding) is hypothesized to reduce dissent, while repression aimed at overt collective activities, such as protests, is said to increase it (Sullivan 2016). Covert repression (i.e., punishing opponents for non-political crimes) supposedly reduces dissent more than overt repression because it undermines the moral authority of the opposition (Pan, Xu and Xu 2026). Finally, preventive repression is thought to be more effective than repression that occurs in response to ongoing protests because it undermines sympathy for protesters, among other things (Ritter and Conrad 2016; Tertytchnaya 2023).

Research on the characteristics of those who are repressed has examined various factors that affect the motivation and capacity of opposition actors to challenge regimes after they have been directly repressed. These characteristics relate to the values, strategies, claims, goals, and organizational structure of opposition actors. Repression, for example, has been hypothesized to be more effective against psychologically motivated groups (i.e., groups motivated by emotions, identity, and justice) than against materially motivated groups because the rewards of participating in a movement are non-rivalrous and do not decline as a movement becomes larger (de Mesquita and Shadmehr 2023).

Repression is also widely argued to be less effective against non-violent actors although violent groups are more costly to repress (Sutton, Butcher and Svensson 2014; Chenoweth, Perkoski and Kang 2017). Non-violent groups, according to this research, are viewed more positively by outsiders and are better able to attract and maintain international and domestic support. In general, repression is thought to be less effective against opposition groups that are perceived as credible, moral, and dedicated towards the benefit of society (Edwards and Arnon 2021; Shadmehr and Boleslavsky 2022; Pop-Eleches and Way 2023; Pan, Xu and Xu 2026). Repression is also believed to be less effective against groups that are harder to surveil, whether they are embedded in local communities (Petersen 2001) or compartmentalized and

detached from society (Amat 2024).

We build on this literature in several ways. We introduce a new factor – punitive uncertainty – that helps explain the differential impact of state repression on dissent. This new factor distinguishes among authoritarian regimes in terms of the nature of their rule. It also explains variation in the effectiveness of repression within regimes since uncertainty and the risk of sanction vary within regimes across issues among people. Repression and uncertainty can coincide on issues where repression is not consistent and absolute. Persistent and systematic repression, conversely, will leave no doubt that the probability of being sanctioned for dissent is high. While we recognize that the meso-level – the type of repression itself – is important, we propose that people can have varied responses to the same act of repression based on differences in how repression is perceived, given the environment in which they reside.

4 How Punitive Uncertainty Affects Dissent

We consider two competing pathways by which punitive uncertainty can make acts of repression more effective in deterring dissent.[30] The first is an informational pathway that we develop, and the second is an emotional pathway derived largely from research in psychology.

4.1 Information

Repression can deter people from engaging in dissent by signaling publicly that a regime has a high resolve to sanction dissent. Resolve is a matter of the desire of a regime to sanction dissent and its ability to sanction it. Resolve is highest when regimes have the desire as well as the ability to sanction dissent. By signaling that a regime's resolve is high, repression, we argue, can deter dissent and increase self-censorship in two ways. They are by

[30] Repression can take many forms and can range in severity. Repression can also involve a number of smaller acts of repression against individuals as when governments repress protests. To simplify our argument, we speak about repression in binary terms (i.e., repression/no repression).

changing people's expectations of the risk of being sanctioned for dissent and by changing people's certainty regarding this risk. We anticipate that people are less likely to dissent the higher they believe the risk of sanction is, and the more certain they are that the risk of sanction is high, and the less certain they are that it is low. Changes in uncertainty, we further anticipate, are likely to have a smaller effect on dissent than changes in expectations regarding the risk of sanction.

Uncertainty, we argue, magnifies the deterrent effect of repression by affecting how much repression changes people's expectations and certainty regarding the risk of sanction.[31] Uncertainty, we contend, is likely to result in comparatively higher expectations of the risk of sanction and/or greater certainty that the risk of sanction is high following repression. The extent to which uncertainty magnifies the deterrent effect of repression in these ways depends, we further argue, on people's level of uncertainty prior to repression and their expectations regarding the risk of sanction. It is greatest, we argue, for uncertain optimists and smallest for certain pessimists. Table 1 summarizes the main components of our argument that are detailed further below.

Table 1: Informational Pathway

	Pre-Repression		**Repression**	**Post-Repression**		
Typology	**Sanction Risk**	**Expected (Un)certainty**	**Increased Discounting**	**Increased Certainty**	**Increased Sanction Risk**	**Increased Self-Censorship**
Certain Optimist	Low	Certainty	Yes	No	Yes	High
Uncertain Optimist	Low	Uncertainty	No	Yes	Yes	Very High
Certain Pessimist	High	Certainty	No	No	No	Very Low
Uncertain Pessimist	High	Uncertainty	No	Yes	No	Low

Repression, we argue, is likely to reduce dissent the most in the case of uncertain optimists. Repression is likely to raise these people's expectations of the risk of sanction to a large extent. It is also likely to make them more certain that the risk of sanction is high. Un-

[31] In Bayesian statistics, uncertainty can be thought of as the variance around the mean of the priors and, thus, the strength of the prior. More certainty would mean a larger variance and a weaker prior. Greater certainty would mean a smaller variance and a stronger prior. Weaker priors have less effect on the posterior distributions than strong priors.

certain optimists have the potential to learn a lot from repression about a regime's resolve to sanction dissent because they believe that the risk of sanction is low, while repression signals that a regime's resolve is high. They also, though, have an incentive to discount the information that repression conveys about a regime's resolve to sanction dissent because repression is not consistent with their expectations.

By discount, we mean to disregard the extent to which repression indicates that a regime has a high resolve to sanction dissent. Discounting affects both people's expectations regarding the risk of sanction and their certainty around these expectations. Discounting, we hypothesize, limits the extent to which people increase their expectations of the risk of sanction in response to repression. It also limits the extent to which people become more or less certain of their expectations regarding the risk of sanction in response to repression.

Uncertain optimists, although they have an incentive to discount the information that repression conveys about a regime's resolve, are unlikely to do so because uncertain optimists are not confident of their expectations. In the face of repression, they are likely instead to believe that their original expectations were wrong, and to change them accordingly. They are also likely to become more certain that the risk of sanction is high. Over time, we anticipate, repeated acts of repression against a given form of dissent are likely to turn an uncertain optimist into a certain pessimist.

This is consistent with the public's response to the repression of the TikTok Girls. Prior to their arrest, most young women in Egypt anecdotally believed that the risk of being detained for posting videos like theirs was low, but were uncertain of it. Many other Egyptian women had posted similar videos on the social media website without incident. However, all women do not face the same scrutiny in Egypt, and the TikTok Girls were influencers with large followings. After the Egyptian government arrested the TikTok Girls, countless young women, reportedly believing that the risk of repression was much higher than they thought, purged their channels and closed their social media accounts.

Discounting can also occur due to motivated reasoning. However, motivated reasoning is not necessary, we argue, for discounting to occur. Motivated reasoning occurs when people interpret information to be consistent with their preferences or identities (Tappin and Gadsby 2019). We believe that people, regardless of their preferences for state repression or their ideological alignment with regimes, are likely to discount the information that repression conveys about a regime's resolve to sanction dissent if it is inconsistent with their expectations, and if they are certain of these expectations. Based on interviews with government officials, we also anticipate that, except for very few regime insiders, those ideologically aligned with fuzzy authoritarian regimes are not likely to be more certain regarding the risk of sanction than those who are not.

In general, when people are uncertain of a regime's resolve, we also anticipate that the effect of repression is likely to spill over to other issues. That is, when people are uncertain how likely a regime is to sanction a given act of dissent, they are less likely, we expect, to engage in acts similar to the ones that a regime has repressed. If a regime, for example, sanctions someone for criticizing a particular policy, we expect people to be less likely to express sympathy for those negatively affected by this policy – uncertain whether this action falls under the category of non-permissible forms of dissent as well. The more similar the act, the less likely, we expect, people are to engage in it.

Certain optimists also have the potential to learn a lot from repression about the resolve of a regime to sanction dissent since repression is also inconsistent with their expectations. Certain optimists, however, are likely to discount the information that repression conveys about a regime's resolve to sanction dissent since they are confident prior to repression that the risk of sanction is low. In discounting the regime's resolve, certain optimists are apt to wonder whether a regime sanctioned a particular act of dissent for a reason other than the regime's opposition to this act. These reasons may include the desire to fulfill a personal vendetta, to punish a political opponent without generating public backlash, or to retaliate

against an opponent through a relative, among other things.

As a result, repression is not likely to raise certain optimists' expectations of the risk of sanction by as much as it is likely to raise those of uncertain optimists. The extent to which it does, we contend, depends on how much certain optimists discount the information that repression conveys about a regime's resolve to sanction dissent. The more they discount it, the less repression is likely to increase their expectations of the risk of sanction. We expect certain optimists to discount the regime's resolve to a greater extent, the lower their initial expectations of the risk of sanction, and the more certain they are of their expectations.

Repression is also likely to reduce how sure certain optimists are that the risk of sanction is low. This, we argue, is also likely to reduce dissent because people are less likely to dissent when they are uncertain that the risk of sanction is low than when they are certain it is low. Over time, we hypothesize, repeated acts of repression against a given form of dissent are likely to change certain optimists into certain pessimists. However, this change is likely to be more gradual than in the case of uncertain optimists for reasons already described. Repression could potentially increase self-censorship in this case by decreasing people's certainty regarding the risk of sanction without changing their expectations regarding the risk of sanction. We test for this alternative in the analysis.

Repression, we argue, is likely to reduce dissent the least for certain pessimists. Repression is not likely to change these people's expectations of the risk of sanction by much or their certainty that this risk is high. It is not, because certain pessimists already believe that the risk of being sanctioned for dissent is high, and are certain of this fact. The higher they believe that the risk of sanction is, and the more certain they are of this fact prior to repression, the less repression is likely to reduce dissent.

The poisoning of Kremlin critic Alexei Navalny is illustrative. By all accounts, Navalny and his supporters were certain before the attack on him that Vladimir Putin was highly likely to sanction anyone like Navalny challenging his right to rule. Others who had tried

in the past, such as Boris Nemstov, had been attacked and killed. Consequently, the attack on Navalny seemed to do little to alter the expectations of Navalny and his supporters in this regard. Nor, did it seem to change their behavior. After recovering from the poisoning in Germany, Navalny willingly returned to Russia, where he was immediately jailed. From detention, Navalny continued to criticize Putin until his death, calling Putin an "insane czar" and "a naked, thieving king," while his supporters furthered his work outside it.[32]

Repression is likely to have a larger effect on uncertain pessimists than on certain pessimists. Repression is also consistent with uncertain pessimists' expectations of the risk of sanction. Therefore, is not likely to change their expectations of the risk of sanction by much either. However, unlike in the case of certain pessimists, repression is likely to increase their certainty that the risk of sanction is high. This, in turn, we argue, is likely to reduce dissent because people are less likely to dissent when they are certain that the risk of sanction is high than when they are uncertain of it. We do not expect increasing a person's certainty regarding the risk of sanction is likely to reduce dissent by as much as raising a person's expectations of the risk of sanction.

The greater willingness of uncertain pessimists to dissent than certain pessimists may explain why Jamal Khashoggi went to the Saudi consulate in Turkey where he was killed. According to confidants of his, Khashoggi believed that the risk of the Saudi regime trying to harm him for his pointed criticism of the regime was high, but was uncertain that he would be harmed at the Turkish consulate. Saudi Arabia had not previously threatened dissidents living in Turkey. While Khasshogi told his fiancé that "nothing bad could happen on Turkish soil," Khashoggi also told a friend the day before visiting the consulate that he was worried about being kidnapped and sent back to Saudi Arabia.[33]

[32] "In Court Hearing, Navalny Calls Putin A 'Naked, Thieving King'," *NPR*, 29 April 2021.

[33] "Jamal Khashoggi: All You Need to Know About Saudi Journalist's Death," *BBC*, 24 February 2021; "What Happened to Jamal Khashoggi? Conflicting Reports Deepen a Mystery," *The New York Times*, 3 October 2018.

In sum, we argue that repression is likely to reduce dissent and increase self-censorship because it signals that a regime has a high resolve to sanction dissent. Repression, we further argue, is likely to reduce dissent more when people believe prior to repression that the risk of sanction is low. People have the most to learn about a regime's resolve to sanction dissent in this case because repression is inconsistent with their expectations. Uncertainty, we hypothesize, is further likely to maximize the deterrent effect of repression when the risk of sanction is low. In this context, people are not likely to discount the information that repression conveys about a regime's resolve to sanction dissent. Consequently, repression is likely to reduce dissent the most for uncertain optimists and to reduce it the least for certain pessimists.

4.2 Emotions

Psychology-based research suggests an alternative pathway through which uncertainty may affect dissent and its converse, self-censorship, namely emotions. Instead of reducing the likelihood of people to dissent by affecting people's understanding of a regime's resolve to sanction dissent, uncertainty, according to this pathway, reduces dissent and increases self-censorship by intensifying negative emotions, such as fear and anxiety. As Rachel Stern and Jonathan Hassid (2012) eloquently write, "unpredictable flashes of repression instill fear and amplify silence" (2012, 1231).

Social psychologists argue that uncertainty intensifies negative emotions because it increases people's curiosity and leads them to ruminate on issues for longer (Wilson et al. 2005; Kurtz, Wilson and Gilbert 2007; Bar-Anan, Wilson and Gilbert 2009). They disagree as to which negative emotions are associated with uncertainty and which are associated with certainty. Grupe and Nitschke (2013) argue that fear is associated with certainty and anxiety is associated with uncertainty. In contrast, Lerner and Keltner (2001) claim that fear is associated with uncertainty and anger is associated with certainty. They also find that

fear is associated with negative risk estimates while anger is associated with positive risk estimates.

Researchers also disagree about which negative emotions that are supposedly associated with uncertainty motivate dissent and which discourage it. Lauren Young (2019) argues that fear discourages dissent because it leads to higher expectations of state repression and lower expectations of others dissenting. Meanwhile, James Jasper (2014) argues that anger encourages dissent because it energizes people. Wendy Pearlman (2013) concurs with these arguments regarding fear and anger, but also suggests that sadness and shame promote dissent while joy and pride encourage it.

The evidence in support of these arguments is mixed. Research in social psychology suggests that uncertainty intensifies negative emotions (Wilson et al. 2005; Kurtz, Wilson and Gilbert 2007; Bar-Anan, Wilson and Gilbert 2009). However, there is no evidence to support the mechanisms by which psychologists hypothesize that uncertainty intensifies negative emotions. Bar-Anan, Wilson, and Gilbert (2009) did not find evidence that uncertainty is significantly associated with prolonged thinking or accessibility, while Kurtz, Wilson and Gilbert (2007) found that prolonged thinking is significantly associated with certainty.

Psychology-based research also finds that negative emotions affect dissent. However, some negative emotions have been found to reduce dissent while other negative emotions have been found to increase it. Lauren Young (2019), for example, finds that fear is associated with less dissent based on experiments she conducted in Zimbabwe. Rachel Stern and Jonathan Hassid (2012) find that fear and anxiety reduce dissent and that uncertainty intensifies these emotions based on interviews with public professionals in mainland China. Meanwhile, Aarti Iyer, et al. (2007) find that anger, as well as shame, encourages dissent based on experiments conducted in the United States and United Kingdom.

We do not dispute the wealth of psychology-based research showing that negative emotions provoke more pessimistic estimates of negative events to occur, or that fear and anxiety

reduce dissent. We anticipate, however, that the effect of uncertainty depends on people's expectations regarding the risk of sanction. We further contend that uncertainty only intensifies negative emotions when the expected risk of sanction is low. Table 2 summarizes our expectations regarding emotions.

Table 2: Emotional Pathway

Typology	**Expected Sanction Risk**	**(Un)Certainty**	**Negative Emotions**	**Self-Censorship**
Certain Optimist	Low	Certainty	Very Low	Very Low
Uncertain Optimist	Low	Uncertainty	Low	Low
Certain Pessimist	High	Certainty	Very High	Very High
Uncertain Pessimist	High	Uncertainty	High	High

Negative emotions are more intense, we expect, when people are certain pessimists than when they are uncertain pessimists. For uncertain pessimists, the possibility that the risk of sanction might be lower than they expect likely dampens negative emotions and results in greater dissent. For uncertain optimists, the possibility that the risk of sanction might be higher than they believe likely intensifies negative emotions relative to certain optimists and results in less dissent.

We further argue that prolonged thinking about whether or not a regime will sanction dissent will not necessarily lead to more intense emotions. It depends, we assert, on whether the prolonged thinking changes people's expectations regarding the risk of sanction, and their certainty regarding these expectations. If it leads people to be more certain that the risk of sanction is high, we expect it to result in more negative emotions. If, however, prolonged thinking leads people to be more certain that the risk of sanction is low, it will likely reduce negative emotions.

In sum, emotions-based research suggests that repression reduces dissent and increases self-censorship more when people are uncertain regarding the risk of being sanctioned for dissent because uncertainty is associated with more intense emotions. Uncertainty intensifies emotions, according to this research, because it piques people's curiosity and leads people to ruminate on issues for longer. This research does not offer clear predictions regarding

the particular emotions associated with uncertainty and dissent. We suggest that while emotions can affect the likelihood of people to dissent, the effect of uncertainty on emotions is conditional on people's expectations of the risk of sanction. Uncertainty intensifies negative emotions relative to certainty, we argue, when people believe that the risk of sanction is low. For these uncertain optimists, the possibility that the risk of sanction is higher than they expect is likely to intensify negative emotions and result in less dissent. For uncertain pessimists, we argue, the possibility that this risk is lower than they expect is likely to dampen negative emotions and result in greater dissent.

5 Methodology

In order to test these competing arguments, we conducted two pre-registered laboratory experiments in Egypt.[34] We used experiments to test these arguments to identify the causal effect of repression and uncertainty on self-censorship. We do this by randomizing uncertainty, the risk of sanction, and repression. By randomizing these factors, we are able to ensure that they are not related to each other in ways that might bias the results.[35] Although we only tested these arguments in a single country, we believe that our findings may apply to people living in other authoritarian regimes where the lines of permissible forms of dissent are not clear since they speak to fundamental aspects of human nature.

Egypt was a useful location to conduct the experiments for several reasons. First, Egypt was, and still is, an authoritarian regime. Elections were not open and competitive when we conducted the experiments and political freedoms were greatly restricted. At the time, Egypt scored in the bottom fifth on the V-Dem electoral democracy index.[36] Egypt was

[34]The experiment was conducted in the university's working language, English. We used basic language to ensure that the subjects understood the prompts and questions, and pre-tested the experiments and conducted interviews and focus groups with ordinary people of various ages to ensure comprehension among other things.

[35]We verified statistically that these factors were not significantly related to each other.

[36]Electoral Democracy Index (0-1). V-Dem, https://v-dem.net. Accessed 11 October, 2025.

also a personalist-military regime (Geddes, Frantz and Wright 2014). Power was concentrated around President Abdel Fattah al-Sisi, who faced limited checks on his authority and filled government offices with loyalists.[37] The military also exerted significant influence over elections, as well as political and economic issues.[38]

Although political freedoms were greatly restricted in Egypt at the time, there was still some space for dissent. This was notably the case at the university where we conducted the experiments, American University in Cairo (AUC). AUC has a very open environment, which provided us with an unusual opportunity to safely test our argument in an authoritarian setting. While the university is open, we still adopted extensive protocols regarding the content of the experiment and the way in which the experiment was conducted to protect the safety of our subjects and to minimize any potential psychological discomfort.[39]

Second, Egypt was also a repressive state when we conducted the experiments and remains a highly repressive state today (Rutherford 2018; Holmes 2021). Security forces routinely arrested, disappeared, and tortured political activists as well as ordinary citizens. The level of repressiveness was similar to most other authoritarian regimes at the time.[40] Although Egypt was repressive, the repressiveness was not so extensive or uniform at the time that there was no dissent within the country and no uncertainty about what views, attitudes, and behaviors people could express without being sanctioned.

[37] "Sisi Sends 11 Intelligence Officers into Early Retirement," *Middle East Monitor*, 19 June 2015.

[38] Hisham Aref, "70 Million for a Seat: The Price of Entering Egypt's Parliament," *Zawia3*, 17 July 2025.

[39] We conducted the experiments in on-campus computer labs rather than the subjects' personal devices. In the lab, subjects sat one seat apart to prevent them from viewing each other's responses. We did not retain a record of who signed up for or participated in the experiments. We allowed subjects to skip questions or answer "prefer not to say" and compensated subjects for their participation regardless of whether they completed the experiment so that they did not feel compelled to answer questions that they did not want to answer. (See footnote 45 for details on the compensation.) The subjects' responses were anonymous, encrypted, and stored electronically outside Egypt. We informed the subjects of these procedures prior to their agreeing to participate in the experiments to reduce their discomfort. A team of student research assistants ran the lab sessions to be mindful of our positionality as faculty vis-à-vis the subjects. We also provided students with information about the university's psychological services at the end of the experiment.

[40] On the *Political Terror Scale-State (PTS-S)*, Egypt scored 4 out of 5 between 2020-2022. About two-thirds of non-democracies (i.e., V-Dem Electoral Democracy Index score ≤ 0.500) received the same score or higher (equal or more repressive) in this period. Figures calculated by authors.

Third, Egypt was characterized by fuzzy authoritarian rule at the time (Sadek et al. 2024). Egypt scored slightly below the average authoritarian regime in terms of government openness, according to the WJP Rule of Law Index, and due process according to the V-dem Index, when we conducted the experiments.[41] The fuzziness was propelled by several ill-defined media, cybercrime, and counterterrorism laws that were enacted in 2015 and 2018 and were inconsistently and opaquely enforced. Using these laws, the government abruptly arrested ordinary citizens shortly before we conducted the experiments, including the TikTok Girls for violating family values, an economist for questioning the government's economic policies,[42] and a graduate student for writing about discrimination against Coptic Christians.[43] At the time, many young women had posted similar TikTok videos. Other scholars had also criticized the government's policies —particularly its limited investment in health and education and its heavy investment in mega-infrastructure projects, and other Coptic Christians had criticized the government for failing to enforce anti-discrimination laws and denying building permits for churches. The sentencing in these cases was further uneven – shortened in some cases, vacated in others with little explanation.

Fifth, given the political environment in which we conducted the experiments, we expected the students to be uncertain in some respects about what views, attitudes, or behaviors they could openly express without being detained or arrested. We did not expect them to be uncertain about all things that they could do or say in Egypt, or to be equally uncertain about them. Consistent with our expectations, a majority of subjects in the study indicated in a pre-treatment question that they were not certain that they knew most things that a person could say in Egypt these days without being detained or arrested.[44] We were

[41] See footnotes 10 and 20 for details. In 2022, Egypt scored 0.31 for open government ("publicized laws and government data), according to the WJP Rule of Law Index. In 2022, Egypt scored 1 for due process according to V-dem ("transparent laws with predictable enforcement").

[42] "Egypt Arrests Economists After Critical Book," *The New Arab*, 21 October 2018

[43] Samy Magdy, "Egyptian Court Hands Down 3-year Prison Sentence to Rights Activist in Case that Echoed in Italy," *Associated Press*, 18 July 2023.

[44] Prior to conducting the experiments, we asked respondents: "To what extent are you certain that you know

able to exploit this fact experimentally. We did this by exposing our subjects to narratives describing situations for which we expected their level of uncertainty to vary and by asking our subjects to consider issues of their own choosing that varied their level of uncertainty.

Sixth, the students represent an important segment of the population against which to test our argument. We recruited about 7% of the university population for the experiments.[45] AUC students are wealthy, young, and educated. They are not representative of the broader Egyptian society. However, young people, educated people, and those with high incomes are generally more likely to engage in activism than others (Sukarieh and Tannock 2014; Sika 2017). Young people, according to research in psychology, are also less likely to be affected by uncertainty, potentially making our population a hard test of our argument (Tymula et al. 2012; Bos and Hertwig 2017; Li 2017). The students are also diverse in other ways, such as ideology, which are relevant to the study and allow us to test for heterogeneous treatment effects.

most things that a person can say in Egypt today without being detained or arrested?" In response, 35% said that they were either "very uncertain" (13%) or "somewhat uncertain" (22%) and 17% said that they were "neither certain nor uncertain". The remainder said that they were "very certain" (10%) or "somewhat certain" (38%)

[45]Subjects were recruited through campus flyers, which we believe, are unlikely to have biased the subject pool. The flyers simply asked: "Interested in participating in a thought experiment?" To increase participation, subjects were paid 150LE for participating in the experiments with a non-descript gift card (approximately twice the hourly rate of an undergrad research assistant). No record of the gift card payment was retained. Students were also offered Yale University swag (e.g., logo pencils and stickers) at the end of the experiments. We do not believe that these techniques biased our sample towards lower-income students or incentivized the students to give certain responses. The demographic information we collected as part of the experiment was similar to the university population. The sample size, while impressive, was limited by our safety protocols. It was limited by the number of computers available on campus and the number of sessions we could hold in a term. It was also limited by our not recruiting students through direct emails to protect the students' privacy and our not collecting the names of students who signed up for the experiments to send reminder emails. We did not conduct a power analysis prior to the experiment to determine the number of subjects that we would need to find significant results for a number of reasons. The sample size was largely out of our control, given the campus's size and safety protocols. We sought instead to collect the largest sample size possible. We also lacked prior research to inform the test parameters. A power analysis is useful for interpreting insignificant results by indicating whether results are insignificant due to a small sample size or a lack of effect. Fortunately, the main results for both experiments were significant.

6 Experiment 1: Informational Pathway

To test our argument about how uncertainty affects the way that people interpret acts of repression, we conducted a vignette experiment.

6.1 Research Design

The experiment consisted of three vignettes that varied the subjects' level of uncertainty and two experimental conditions that varied whether or not the person depicted in the vignettes was sanctioned or not. The vignettes described a social media post about agricultural encroachments written by a journalist. Agricultural encroachments are illegal uses of state-owned lands (e.g., building, fishing, and dumping). It is a common practice in Egypt and other developing countries. In Egypt, encroachments are carried out largely by the poor who argue that encroachments are unavoidable due to Egypt's limited arable land, low farming-related incomes, and inadequate development schemes. The government is outwardly and adamantly opposed to them. Officials have even explicitly referred to its policy against them as a red line.[46] Stopping the encroachments, the government has claimed, would reduce Egypt's dependency on food imports and ensure all rural state lands are allocated development projects.[47]

We chose agricultural encroachments as the subject of the vignettes for several reasons. Encroachments were a topical and important issue at the time of the experiment. Yet, the subject was unlikely to have provoked a strong emotional response from the subjects, which we confirmed in pretests, because the students were unlikely to have been personally affected by the issue and the vignettes were abstract and hypothetical. We did not want

[46] Lena Masri and Ali Abdelaty, "Egypt's Poor Bear Brunt of Crackdown on Farmland Building," *Reuters*, 27 November 2018.

[47] Ahmed Mossaad, "'Akbar Hamla le 'Izalat al-Ta'adiyyat: al-Rif al-Misry Yastarid 'Arady b-60 Million Jeneh be al-Moghra," *Masrawy*, 23 June 2020.

to evoke a strong emotional response from the subjects in this experiment to isolate the effect of information from emotions. We chose a journalist as the subject of the vignettes for similar reasons. We measured the subjects' perceived similarity to the journalist to control for its effect on the results. Even though the students were unlikely to have been personally affected by the encroachments, the topic was still likely of interest to the participants, given its salience in public discourse at the time.[48]

Table 3 depicts the vignettes, the level of risk and (un)certainty we expected to be associated with each vignette, and the treatment and control conditions (i.e., detained and not detained) assigned to them. The vignettes and the treatment and control conditions were evenly distributed at random among subjects.

Table 3: Experiment 1 Vignettes and Treatment

Announcement Vignette	**(Un)certainty**	**Risk**	**Treatment**
A journalist posted the following message on Twitter: The government announced today that it had intensified its efforts against illegal encroachments on our beautiful agricultural lands in order to protect Egypt's food security. #landreforms	certainty	low	detained / not detained
Sympathy Vignette	**(Un)certainty**	**Risk**	**Treatment**
Announcement Vignette + Unfortunately, the journalist added, residents have little other choice because they cannot afford the new settlements and the public services in them are very poor. #homelessness #savethepoor #landreforms	uncertainty	low/med /high	detained / not detained
Collection Action Vignette	**(Un)certainty**	**Risk**	**Treatment**
Sympathy Vignette + Protests, the journalist further declared, are necessary if anything is going to change in Egypt. Residents need to organize themselves now!! #homelessness #savethepoor #landreforms	certainty	high	detained / not detained

Note: A picture of Egyptian farmland accompanied all three vignettes.

We expected the risk of sanction and the subjects' certainty regarding this risk to generally vary across vignettes in the following ways: For the *announcement vignette*, we expected certainty to be high and risk to be low because the journalist simply describes the government's actions against encroachments. For the *collective action vignette*, we expected both certainty and risk to be high because the journalist calls for protests against the regime's actions. While the Egyptian constitution nominally allows protests, the government has

[48]Eighty-four percent of the subjects had an opinion about encroachments.

made it very clear that it will not tolerate protests through highly restrictive laws and the constant repression of protesters.

For the *sympathy vignette*, we expected uncertainty to be high because the post does not directly criticize the regime's policy. Instead, it indirectly criticizes it by expressing sympathy for encroachers. We expected the risk of sanction to vary for this vignette – with some subjects believing that the risk of sanction was low, others believing it was high, and still others believing it was somewhere in between. We expected it to be low if subjects believed that expressing sympathy for the encroachers was a mild criticism of the regime and that the regime tolerates mild criticisms. We expected it to be high if people believed that expressing sympathy for the encroachers was a strong criticism of the regime or that the regime would not tolerate any criticism of a core government policy. Our expectations on the distribution of risk for this vignette are supported by our data on the subjects' self-reported evaluations of the risk of sanction described below.

Based on which vignette subjects read, we constructed measures of assigned (un)certainty and assigned risk. *Assigned (un)certainty* is coded 1 (certainty) if subjects were assigned to read either the announcement or the collective vignette, and 0 (uncertainty) if they were assigned to read the sympathy vignette. *Assigned risk* is coded 1 (high sanction risk) for the collective action vignette and 0 (low sanction risk) for the announcement vignette. The sympathy vignette is not coded for assigned risk since we expected risk to vary widely for it. We know based on how likely people said that they thought the journalist in the vignettes was to be detained, that on average, subjects assigned the uncertainty vignette believed that the journalist faced the same level of risk as people in the assigned certainty vignettes.[49]

After subjects read the vignettes and before they were treated, we asked them to provide their own estimates of the journalist's probability of being detained and their certainty

[49]Specifically, there were no statistically significant differences in the mean level of reported risk between the two values of the assigned (un)certainty measure - certainty (announcement vignette and collective action vignette) and uncertainty (sympathy vignette).

around these estimates. These questions constitute our measures of reported risk and reported (un)certainty. *Reported risk* is based on the following question: "How likely do you think a journalist is to be detained for a tweet [post] like this in Egypt these days?" (1=very unlikely (low sanction risk); 5=very likely (high sanction risk). *Reported (un)certainty* is based on the followup question: "How certain are you of this?" (1=very uncertain; 5=very certain).

These measures are very important for several reasons. They provide more precise and fine-grained measures of risk and uncertainty than our assigned measures and take into account the respondents' subjective interpretations of the vignettes. We expected (and confirmed through pre-tests) our subjects to diverge from our expectations at least somewhat because people may interpret the vignettes differently based on their own political knowledge, personal backgrounds, and so forth.[50] Our measure of reported risk is further important because we expected people's estimates of the risk of sanction to vary for those who read the sympathy vignette (assigned uncertainty). Thus, in measuring reported uncertainty and risk separately, we are able to separate out the effects of the two from each other. Of those who read the sympathy vignette, 47% said a journalist was "very likely" or "somewhat likely" to be detained; 38% said a journalist was "very unlikely" or "somewhat unlikely" to be detained; and the remainder said a journalist was "neither likely nor unlikely" to be detained.

After asking subjects about their expectations regarding the journalist's probability of being detained and their certainty around these expectations, we treated the subjects. We informed half that the journalist was "not detained" (no repression) and half that the journalist was "detained for two years and released – weak and sickly, having failed to receive

[50]More than one-third of subjects said they were "very" or "somewhat" familiar (37%) with the government's position on encroachements. Of the remaining subjects, 41% said that they were not "too familiar" and 22% said that they were "not familiar at all" with the government's position on encroachments. We repeated the analysis without subjects who were "not knowledgeable at all" (22%) about encroachments. The results are very consistent with the results to follow.

proper medical care" in detention (repression).[51] By randomizing repression, we are assured that people's level of uncertainty and their expectations of the risk of sanction are not a function of repression. Repression is coded 1 if subjects were informed that the journalist was detained for two years, and 0 otherwise.

Based on this information, we created two additional variables to take into account the relationship of repression to the risk of sanction. *Repression consistent* is coded 1 if subjects were informed that the journalist was detained, and had thought the risk of sanction was high (i.e., "very likely" or "somewhat likely" to be detained), and 0 otherwise. *Repression inconsistent* is coded 1 if subjects were informed that the journalist was detained, and had thought the risk of sanction was low (i.e., "very unlikely", "somewhat unlikely" or "neither likely nor unlikely" to be detained), and 0 otherwise. We had hypothesized that repression would have a larger effect when it is inconsistent with people's expectations, but that certainty would reduce the effect of repression in this context due to discounting.

After informing subjects whether or not the journalist was detained, we asked them "the most likely reason" for the journalist's treatment to measure whether the subjects discounted the repression.[52] We consider "something unrelated to the tweet [post]" and "journalist friends with important officials" to be evidence of discounting. Both indicate that the subjects did not believe that the journalist was repressed for the issue described in the vignettes. *Discounting* is coded 1 for discounting and 0 otherwise. The remaining response categories are as follows: tweet [post] supports government; tweet [post] only mildly critical of government; tweet [post] too critical of government for it to allow; none of the above; and do not know.

Finally, we measured self-censorship based on the following question: "If you had retweeted [reposted] this message, how likely would you be to delete it from your Twitter [X] account

[51] The punishment severity is not unusual. Were it much higher, subjects might have perceived the punishment itself as a signal that the journalist was punished for another reason (i.e., discounting).

[52] Responses were randomized to prevent order effects.

given this incident?" (1=very unlikely; 5=very likely). While subjects may have over/under-reported their likelihood to self-censor in practice, this is unlikely to be problematic for the analysis because people are not likely to have done so systematically across our treatment and control conditions. We expected subjects to believe the journalist's treatment to be more indicative of their own future treatment, the greater their perceived similarity with the journalist. Therefore, we also evaluated how similar subjects thought they were to the journalist. *Similarity* is coded 1 if the subjects believed they were "very" or "somewhat" similar to the journalist, and 0 otherwise.

We also looked at self-censorship more broadly in terms of advising one's "closest friend to delete this message from their feed" and to refrain from related activities in order to test spillover effects. The activities range in their similarity to the post. They are (from similar to dissimilar): post a YouTube video of the military demolishing buildings; criticize the new Cairo capital to an acquaintance; volunteer for a charity organization; post something on TikTok; use a VPN to access banned websites (VPN); and accuse a person of sexual harassment on social media. The first is most like the post described in the vignette because the military demolished buildings as part of its anti-encroachment policy. The second is similar to the post because it refers to another government housing policy. The other activities are only distantly related (i.e., the use of another social media service) or completely unrelated.

6.2 Results

We conducted two separate sets of analyses of these data. In the first, we examined the main effects. In it, we analyzed if repression reduces self-censorship and if uncertainty affects the extent to which repression reduces self-censorship. In the second set, we examined the mechanisms by which we argue that uncertainty affects self-censorship. Specifically, we examined if discounting was associated with uncertainty and if discounting reduced the extent to which repression increased self-censorship. The results to follow include all subjects

who passed basic attention checks, indicating that they paid attention to the key parts of the experimental conditions, as specified below.[53]

Main Effects: The Moderating Effects of Uncertainty on Dissent

We examine the main effects of repression and uncertainty on self-censorship through both a means comparison and regression analysis. Table 4 presents the results of the means comparison. In it, we expected the following relationships.

Table 4: Self-censorship Means Comparison

I. Self-censorship by Repression

	no repression	repression	N	difference
	3.09	4.01	453	0.92**

II. Self-censorship by Reported Risk

	no repression	repression	N	difference
low sanction risk	2.54	3.91	208	1.37**
high sanction risk	3.70	4.10	229	0.40*

III. Self-censorship (Reported Low Risk) by Reported (Un)Certainty

	no repression	repression	N	difference
low sanction, uncertainty	2.68	4.25	51	1.57**
low sanction, certainty	2.49	3.77	152	1.28**

Note: All subjects passed the repression attention check. Certain is "very certain" or "somewhat certain" of a journalist's probability to be detained; Uncertain is "very uncertain," "somewhat uncertain," or "neither certain nor uncertain" of it. High sanction risk is "very likely" or "somewhat likely"; Low sanction risk is "very unlikely", "somewhat unlikely" or "not likely at all". $*p \leq 0.05$; $**p \leq 0.01$.

First, we expected the mean level of self-censorship to be greater for persons in the

[53] While dropping subjects that do not comply with post-treatment manipulation checks can introduce bias and defeat the purpose of randomization, we do not find this to be the case. None of the following factors explain why subjects failed the attention checks: socio-economic class, gender, length of time lived in Egypt, ideological alignment with the regime (e.g., support for lifting term limits and position on encroachments), and familiarity with the government's position on encroachments, suggesting that the failure to recognize the repression and uncertainty were not driven by these factors (See Appendix). The attention checks are as follows: *Repression*: Subjects failed the basic attention check for repression if they were informed the journalist was detained for two years and did not check "two years", or they were informed the journalist was not detained and indicated the journalist was detained for "two years." *Assigned (un)certainty*: Subjects failed the basic attention check for assigned (un)certainty if they read the collective action vignette and did not indicate the journalist called for a protest, or read the announcement or sympathy vignette and indicated the journalist called for a protest. An attention check for reported (un)certainty was not necessary because it measures people's subjective evaluations. The models of repression as well as the models of repression and reported (un)certainty include as many as 468 subjects (92%) who passed the repression attention check. The models of repression and assigned (un)certainty include as many as 397 subjects (78%) who passed both checks. We also repeated the analysis dropping those who failed only the pre-treatment question regarding knowledge about the government's position on encroachments and found very similar results.

repression (treatment) condition than those in the no repression (control) condition. A higher mean indicates that repression is associated with greater self-censorship. The results are consistent with our expectations (comparison I). The difference between the repression and the no-repression conditions is almost one point on a 5-point scale.

Second, we expected the difference in the mean level of self-censorship between the repression and the no-repression conditions to be greater when the reported risk of sanction was low rather than high (comparison II).[54] A larger difference in self-censorship for the former than the latter indicates that repression had a larger effect on self-censorship when the subjects believed the risk of sanction was low (and repression was inconsistent with their expectations) than when they believed it was high (and repression was consistent with their expectations). The results are also in line with our expectations. Repression is associated with a larger increase in self-censorship when the reported risk of sanction was low (1.37) than when it was high (0.40). There does not appear to be a ceiling effect. The level of self-censorship in the repression condition for the high-risk category is nearly one point below the 5-point maximum of the scale.

Third, we expected the difference in the mean level of self-censorship to be lower for the certainty condition than for the uncertainty condition when the reported risk of sanction was low (comparison III). Comparison III depicts the difference between certain optimists and uncertain optimists. A smaller difference for the former indicates that repression increases self-censorship less for certain optimists than for uncertain optimists, as expected. According to this comparison, the difference in the level of self-censorship between the repression and no repression conditions is about 20% smaller for certain optimists (1.28) than for uncertain optimists (1.57).[55] Moreover, the mean level of self-censorship for uncertain optimists (1.57)

[54] We do not present the result for assigned risk of sanction because we do no have conditions for low and high risk for the assigned uncertainty conditions (i.e., sympathy vignette).

[55] The difference is also smaller for certain pessimists than for uncertain pessimists, and smallest overall for certain pessimists as expected.

is greater than the mean level of self-censorship for the low sanction risk condition alone (1.37), suggesting that uncertainty maximizes the deterrent effect of repression. Again, we see no evidence of a ceiling effect.

Next, we analyzed the data using ordered logistic regression. In these models, we controlled for other variables that might affect self-censorship. We expected to see the same relationships in these models that we observed in the means comparisons. That is, we expected repression to increase self-censorship. We expected repression to increase self-censorship more when the risk of sanction was low (and repression was inconsistent with the subjects' expectations) than when it was high (and repression was consistent with them). We also expected self-censorship to be greater for uncertain optimists than for certain optimists. The results are presented in Table 5.

In these models, we used interaction effects to test how the effect of one variable depends on the other – namely, how the effect of repression depends on uncertainty and the expected risk of sanction. To test the significance of the interaction effects, as well as sets of indicator variables, we used Wald tests. A Wald test indicates whether the coefficients for a set of variables are simultaneously equal to zero (Ramanathan 2002, 156). Rejecting the null hypothesis indicates that a set of variables is jointly significant and that an interaction effect is significant. We rely on Wald Tests to test the significance of the interaction effects because including interaction terms in models introduces collinearity and inflates the standard errors of coefficients, potentially resulting in Type II errors. This issue also arises for sets of indicator variables. To interpret the substantive effects, we calculated predicted probabilities and graphed the results. We examined the relationship of different values of the independent variables to different categories of the outcome variables because interaction effects may be significant for certain values but insignificant for others in non-linear models (Brambor, Clark and Golder 2006).

The results of the models are consistent with our expectations. In Models 1 and 2,

Table 5: Self-censorship Given Repression, Punitive Uncertainty, and Risk

	Model 1	Model 2	Model 3	Model 4
Repression	1.18**	1.23**		
	(0.19)	(0.18)		
Repression Inconsistent			1.92†**	3.47†**
			(0.27)	(1.00)
Repression Consistent			0.69†**	0.71**
			(0.24)	(0.24)
Repression Inconsistent*				-0.42†
(Un)certainty (Reported)				(0.26)
Assigned (Un)certainty	0.15			
	(0.20)			
Reported (Un)certainty		0.06	0.06	0.15†
		(0.10)	(0.10)	(0.12)
Reported Risk		0.42**	0.62**	0.61**
		(0.07)	(0.09)	(0.09)
Similarity	0.36	0.09	0.15	0.14
	(0.21)	(0.20)	(0.20)	(0.20)
Observations	384	428	428	428
Log Likelihood	-558.275	-600.644	-594.145	-592.790
†Wald χ^2			55.78	52.74
p>χ^2			0.00	0.00

Note: ∗p≤0.05; ∗∗p≤0.01. †Wald Test terms. Certainty is higher when assigned (un)certainty and reported (un)certainty take on higher values. Therefore, the negative values on the interaction term in Model 4 indicate that repression increases self-censorship to a greater extent when uncertainty is higher. Models based on ordered logistic regression.

we tested the effect of repression on self-censorship while controlling for the risk of sanction, uncertainty, and the subjects' similarity to the journalist. According to it, repression significantly increases self-censorship. If we interact uncertainty with repression in these models (not shown), we find that certainty modestly reduces the effect of repression on self-censorship. We are not surprised that the effect is only modest because we expected the effect of uncertainty to depend on the risk of sanction, and for the effect to be greatest when the risk of sanction is low and repression is inconsistent with the subjects' expectations regarding the risk of sanction. We examined the effect of repression when the risk of sanction is low in the next model.

In Model 3, to examine if the effect of repression on self-censorship is larger when the risk of sanction is low, we replaced our variable for repression with our variables for repression inconsistent (i.e., repression when the risk of sanction is low) and repression consistent (i.e., repression when the risk of sanction is high). No repression in the base/omitted category.

According to this model, as we hypothesized, repression that was inconsistent with the subjects' expectations was associated with significantly more repression than no repression and repression that was consistent with the subjects' expectations of the risk of sanction.

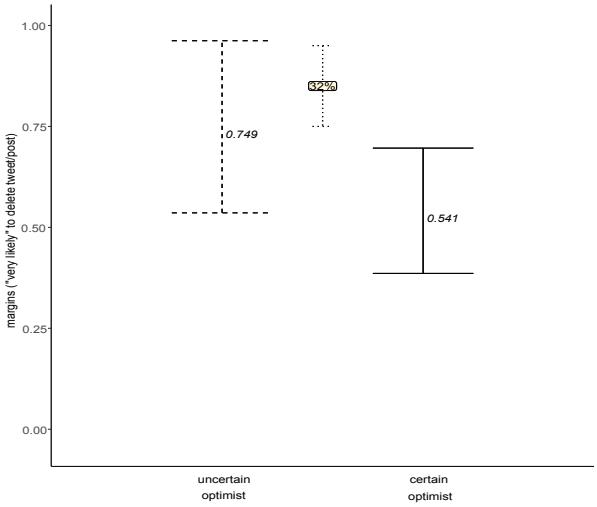
In Model 4, we tested if repression increases self-censorship less when subjects were more certain prior to repression that the risk of sanction was low. A smaller increase in self-censorship indicates that certainty reduced the effect of repression on self-censorship, consistent with our argument. We tested this relationship by interacting uncertainty and our repression inconsistent variable in this model.[56] The effect is aligned with our expectations and the effect size is large.[57] To make this easier to see, we depicted the results of Model 4 in Figure 2. The figure shows the predicted probabilities from Model 4 when certainty and uncertainty were both high and people were "very likely" to censor themselves by deleting the tweet/post. All other variables are held constant at their means in this figure. As is evident from this figure, when the risk of sanction is low, self-censorship is 32% lower when people are "very certain" of the risk of sanction than when they are "very uncertain" of it.

In sum, according to the previous analyses, repression increased self-censorship. It increased self-censorship more when the risk of sanction was low (and repression was inconsistent with the subjects' expectations). Most importantly, when the risk of sanction was low, repression was associated with less self-censorship, the more certain people were of the risk of sanction prior to repression. This is consistent with our expectations that the effect of repression would be greatest for uncertain optimists. To test the strength of these findings, we ran a number of additional models provided in the appendix. In these models, we used an

[56] We measure uncertainty in this model in terms of reported (un)certainty. We cannot test the effect of uncertainty versus certainty for assigned (un)certainty when the risk of sanction is low because we have only one condition for assigned (un)certainty (i.e., sympathy vignette) for which there is no assigned risk of sanction.

[57] If we interact, repression consistent with uncertainty, we do not find that uncertainty significantly increases the effect of repression. We expected uncertainty to have a smaller effect when the expected risk was high since repression, in this case, is only likely to increase people's certainty regarding the risk of sanction, not their expected risk of sanction. We did not expect the result to be insignificant or in the opposite direction.

Figure 2: Repression and Reported Risk Interaction (Model 4)



Note: Certain and uncertain are those "very certain" and "very uncertain" of the journalist's likelihood to be detained respectively. Optimists are those who believe that the journalist was "very unlikely", "somewhat unlikely," or "neither likely nor unlikely" to be detained. Bars represent 95% confidence intervals.

alternative measure of self-censorship (i.e., advising a friend to remove the tweet/post).[58] We applied different attention checks to the previous model and added a host of other controls. The controls include factors that might intrinsically affect people's motivation to dissent, such as people's ideological alignment with the regime, the value they placed on dissent, their general outspokenness, and risk aversion, among other factors.[59]

The results of these models are consistent with our argument and the results already presented. In the appendix, we also looked for heterogeneous treatment effects and spillover effects. We only found that subjects who were generally outspoken were significantly less affected by uncertainty than those who were not.[60] We did not find that any of the following

[58] We also examined if subjects believed that the friend had a higher sanction risk relative to the journalist following repression when they were more uncertain prior to repression of the journalist's sanction risk, which they did as expected.

[59] The controls are: perceived severity of the punishment; ideological alignment with the government (i.e., positions on encroachments and presidential term limits); personality (e.g., financial risk propensity, physical risk propensity, and outspokenness); and demographic characteristics (income and gender).

[60] We measured outspokenness based on an index created from responses to the following question: "How likely would you say something if you did not like the following?: the way the country was run; rude joke your friend made; university policy; and something your parents said." (5=very likely; 1=very unlikely).

people were significantly more or less affected by uncertainty: those who were ideologically more aligned with the regime (measured in terms of expressing support for the removal of presidential term limits or the government's position on agricultural enchroachments); those who thought it was important to dissent; those who tended to engage in physically or financially risky activities; those who were from wealthy families, or women. We also found that spillover effects were very limited. When states repressed a given act of dissent, subjects did not recommend that others censor themselves for most other activities. Uncertainty was only robustly associated with significantly less self-censorship for the act that was most similar to the act repressed (i.e., posting a YouTube video of the military demolishing buildings) if people were uncertain in general about the likelihood of the regime to sanction dissent.

Mechanisms: Discounting

We hypothesized that the effect we observed for certain optimists in the main analysis was due to subjects' discounting the regime's resolve to sanction dissent. In this section, we tested for evidence of discounting. We first used logistic regression to test if repression was associated with more discounting when repression was inconsistent with the subjects' expectations.[61] We then used logistic regression to test if certainty was associated with more discounting when repression was inconsistent with the subjects' expectations.[62] Finally, we used ordered logistic regression to test if discounting reduced the effect of repression on self-censorship. These results are depicted in Table 6. We used Wald Tests to test for the significance of the interaction effects. The results are aligned with our expectations.

In Model 5, we analyzed the effect of repression and reported (un)certainty on the likelihood of discounting. We expected more discounting to occur when repression was in-

[61] We examined a broader measure of discounting, including "do not know" and "none of the above" in the appendix. The results are consistent with the measure used here.

[62] In these models, uncertainty is measured in terms of reported (un)certainty because we have only one condition for assigned (un)certainty (i.e., sympathy vignette) for which there is no assigned risk of sanction.

Table 6: Discounting: Causes and Effect on Self-censorship

	Model 5	**Model 6**	**Model 7**	**Model 8**
Dependent Variable	Discounting	Discounting	Discounting	Self-censorship
Repression				1.48†**
				(0.21)
Repression*Discounting				-1.53†**
				(0.46)
Discounting				0.86†**
				(0.32)
Repression Inconsistent	0.89**	1.07**	-1.42†	
	(0.29)	(0.34)	(1.42)	
Repression Consistent	-1.34**	-1.28**	-1.32**	
	(0.46)	(0.51)	(0.46)	
Ideological Alignment (Term Limits)		0.06		
		(0.12)		
Ideological Alignment (Encroachments)		-0.20		
		(0.16)		
Reported (Un)certainty	0.16	0.02	-0.01†	
	(0.15)	(0.17)	(0.17)	
Repression Inconsistent*			0.60†	
Reported (Un)certainty			(0.36)	
Similarity				0.27
				(0.20)
Constant	-2.10**	-0.98	-1.48*	
	(0.60)	(0.88)	(0.66)	
Observations	401	304	401	408
Log Likelihood	-176.810	-132.689	-175.258	-584.960
†Wald χ^2			13.96	49.73
p>χ^2			0.00	0.00

Note: $*p \leq 0.05$; $**p \leq 0.01$. †Wald Test terms. Models 5-7 use logistic regression. Model 8 uses ordered logistic regression.

consistent (i.e., repression occurred when the risk of sanction was low) with the subjects' expectations of the risk of sanction. As expected, Model 5 indicates that discounting was more likely to occur when repression was inconsistent with the subjects' expectations relative to no repression. It was less likely to occur when repression was consistent with their expectations relative to no repression. Uncertainty is not significantly related to discounting in this model. However, this model does not examine the relationship between uncertainty and risk, as we do in Model 7. We expected discounting to primarily occur when people were certain that the risk of sanction was low (certain optimists).

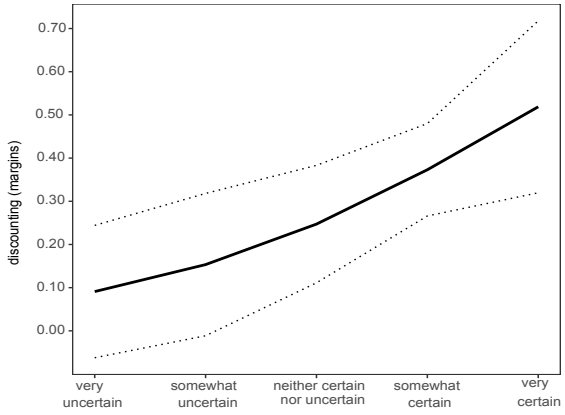
In Model 6, we added control variables for people's ideological affinity with the regime (i.e., position on presidential term limits and position on encroachments).[63] Neither was

[63]The subjects' position on presidential term limits is based on the following question: "Please indicate the extent to which you agree with the following recent Egyptian government policies?: removal of presidential terms." (1=strongly disagree; 5=strongly agree). Their position on encroachments is based on the following question: "In your opinion, do you think the government should increase or decrease its efforts to combat illegal encroachments?" (1=greatly increase; 5=greatly decrease).

significantly related to discounting. These results suggest that the discounting was not a product of motivated reasoning. The results for repression and uncertainty are consistent with the previous model.

In Model 7, we interacted the variables for repression inconsistent and reported (un)certainty. The results are also aligned with our hypothesis and the Wald Test is significant. According to this model, people were significantly more likely to discount repression when repression was inconsistent with their expectations (than when it was consistent with them), the more certain they were of their expectations prior to repression. To illustrate the results, we depict the margins from this model in Figure 3.

Figure 3: Discounting when Repression Inconsistent with Expectations, by Uncertainty (Model 7)



Note: Dashed lines represent 95% confidence intervals.

In Model 8, we used ordered logistic regression to relate discounting to self-censorship. We expected discounting to decrease the effect of repression on self-censorship. To test this hypothesis, we interacted discounting and repression in this model. According to this model, discounting significantly reduced the likelihood of subjects to self-censor in response to repression, as expected. For example, when discounting occurred, the likelihood of people to delete the tweet/post in response to repression was 38% lower than when discounting did not occur. In additional models, we also found that discounting was significantly related to

smaller changes in the subjects' expected risk of sanction post-treatment.

In the appendix, we tested for an alternative explanation based on changes in certainty. This argument claims that certain optimists censor themselves less, not due to discounting, but because repression makes them less certain of their expectations. If this explained the effect we observed, two things would be true: first, certain optimists would be less certain of the risk of sanction after repression; and second, changes in certainty would be significantly associated with self-censorship when the risk of sanction was low.[64] The results support the first expectation. Certain optimists were less certain of the risk of sanction after repression. However, the results do not support the second expectation. Changes in uncertainty were not significantly related to self-censorship when the risk of sanction was low. As a result, changes in uncertainty do not appear to be driving the results for certain optimists.

Summary of Findings

Experiment 1 suggests that uncertainty maximizes the deterrent effect of repression due to its effect on how people understand what repression signals about a regime's resolve to sanction dissent. In our main analysis, we found support for three main claims: first, repression increased self-censorship; second, repression increased self-censorship more when the risk of sanction was low; and third, in this context, repression was associated with less self-censorship when people were certain prior to repression that the risk of sanction was low. We hypothesized that the latter effect was due to people discounting the resolve of the regime to sanction dissent when repression was inconsistent with their expectations. In the second analysis, we found evidence aligned with our hypothesis. We found that certainty was associated with greater discounting of the regime's resolve when repression was inconsistent with the subjects' expectations and that discounting reduced the effect of repression on

[64]Changes in certainty in this case are based on differences in the subjects' certainty regarding the risk of sanction for the journalist pre-treatment and a friend for posting the same tweet/post post-treatment.

self-censorship. We did not find any evidence that discounting was associated with being ideologically aligned with the regime or that the effect of discounting was due to changes in uncertainty.

7 Experiment 2: Emotional Pathway

To test if uncertainty intensifies the effect of repression on dissent due instead to emotions, we conducted a second experiment designed to induce an emotional response from the subjects.

7.1 Research Design

This experiment consisted of three experimental conditions that varied the subjects' expectations regarding the risk of being sanctioned for dissent and their uncertainty around these expectations. For all three conditions, we asked the subjects to think about an issue of personal importance to them. The subjects were free to think about any specific political, social, or economic issue that they wanted. Since the issue was of personal importance to the subjects, and one that they desired to discuss with others, we expected this experiment, unlike the previous one, to evoke a strong emotional response from our subjects. To ensure this, we posed several questions to the subjects before we asked them to describe their emotions so that they thoroughly contemplated the issue at hand.[65] Even though we expected the experiment to induce a strong emotional response from our subjects, we did not expect the experiment to have posed an unusual psychological burden to the subjects since the experiment replicated the everyday thought processes of Egyptians (Pearlman 2023).[66]

[65] The questions related to the severity of the punishment, the subjects' desire and likelihood to discuss the issue with others, and the freedom that they believed they had to discuss the issue inside and outside Egypt.

[66] The fact that the percentage of subjects who said that they were likely to discuss this issue with others in the real world was very similar to the percentage of subjects who voluntarily told us what this issue was as part of the experiment suggests that the experiment did not pose an unusual psychological burden to the subjects. Specifically, two-thirds (64%) of subjects said they were either "very likely" or "somewhat likely" to discuss the issue with others outside the study, while 52% of subjects told us what this issue was as part of the experiment. Further, some students reported afterwards that the experience was cathartic because they were able to freely communicate about the issue in the experiment due to its safe and secure environment.

Table 7 depicts the three experimental conditions and the levels of risk and certainty that they cued. Respondents were assigned to one of these three conditions at random.

Table 7: Experiment 2 Treatment Conditions

Now, we'd like you to think about something (e.g., an idea, opinion, or desire) on a political, social, or economic issue that you would really like to express publicly or discuss openly with others in Egypt right now that you are ...

condition	text	risk of sanction	certainty
certainty-low risk	...CERTAIN that if you did, you WOULD NOT BE detained or arrested.	low	high
certainty-high risk	...CERTAIN that if you did, you WOULD BE detained or arrested.	high	high
uncertainty	...UNCERTAIN about whether you WOULD BE detained or arrested if you did.	low/med/high	low

The experimental conditions include two certainty conditions (low and high risk of sanction) and one uncertainty condition. In the *certainty-low risk* condition, respondents were asked to think about an issue that they were certain they were very unlikely to be repressed for discussing with others. In the *certainty-high risk* condition, they were asked to think about an issue that they were certain they were very likely to be repressed for discussing with others. In the *uncertainty* condition, they were asked to think about an issue they were uncertain whether they were likely to be repressed for discussing with others. In this condition, people were free to consider an issue that they believed had a low, medium, or high probability of being sanctioned. These conditions constitute our measures of *assigned risk* and *assigned (un)certainty*.

Next, we asked subjects to estimate their probability of being detained for discussing this issue with others and their uncertainty around these estimates. Specifically, we asked the participants: "If you had to guess, what do you think the likelihood of your being detained or arrested for saying this thing is?" (1=very likely; 5=very unlikely) and "How sure of this are you?" (1=absolutely sure; 7=absolutely unsure). These questions represent our measures of

The length of the subjects' write-in responses also suggests that the experience was cathartic for at least some subjects. Subjects who said at the end of the experiment that they were thinking about an issue that was potentially or likely at odds with the regime provided much lengthier responses than those who said that they were thinking about an issue aligned with or unrelated to the regime.

reported risk of sanction and *reported (un)certainty*.

These measures are important for several reasons. They provide more precise and fine-grained measures of risk and uncertainty than our assigned measures. They serve as manipulation checks that indicate whether or not those assigned to think about an issue with a given level of risk and certainty did as they were instructed. The first of these questions also allows us to determine the level of risk associated with subjects in the uncertain treatment condition. To distinguish the effect of uncertainty from risk, it is important that all of the subjects in the uncertain condition did not perceive their risk of being sanctioned to be the same. In the uncertain condition, 33% of subjects believed that they were "very" or "somewhat" unlikely to be detained; 44% believed that they were "very" or "somewhat" likely to be detained, and 23% believed that they were "neither likely nor unlikely" to be detained.

The most common reasons subject said that they were uncertain about whether they would be arrested or detained for discussing an issue publicly related to the divergence of their views from perceived government positions; the arbitrariness of the country's legal and police system; the nature of the community with which they intended to discuss the issue (e.g., safety/danger in small/large numbers); and their lack of knowledge of relevant laws or the government's position on an issue.

To explore our counterargument regarding emotions at the microlevel, we subsequently asked our subjects to indicate if they thought their risk of being detained might be higher or lower than they had thought, and how their uncertainty regarding this risk affected their likelihood to discuss the issue with others. To evaluate the former, we asked subjects do "you think your likelihood of being detained or arrested might be higher or lower than what you think?" (1=higher; 2=lower; 3=higher or lower). To measure the latter, we asked subjects to indicate the extent to which they agreed with the following statement: "My level of (un)certainty regarding the likelihood of being detained or arrested for openly sharing this thing with others makes me..." (1=much less likely to say it. 5=much more likely to say it).

Seventy-two percent of subjects said that their level of (un)certainty made them less likely to discuss the issue with others when they believed that their risk of being sanctioned for discussing it was high. As expected, the percentage of subjects who thought their risk of sanction was high, but might be lower, was larger the more uncertain people said they were regarding their risk of sanction. The percentage of subjects who thought their risk of sanction was low, but might be higher, was larger the more uncertain people said they were regarding their risk of sanction.[67]

Since subjects could choose the specific issue that they wanted to discuss with others, differences in the types of issues about which people were more or less certain of the probability of being sanctioned for discussing with others could affect the results. To explore this possibility, we asked the subjects prior to measuring emotions and self-censorship about two factors: the severity of the punishment they expected to be associated with discussing the issue with others and the extent to which others would agree with their view. To measure the former, we asked "If you were detained or arrested, which of the following comes closest to how long you think you'd be held?" (1=no time; 2=unknown amount of time; 3=24 hours; 4=few months; 5=few years; 6=life). To measure the latter, we asked: "How likely do you think the following people are to agree with what it is you want to say: average Egyptian, government, close friends, and parents" (5=very likely; 1=very unlikely'). We examined the former because people could be more certain of the probability of the regime to sanction dissent on issues associated with more extreme sanctions, and because people could be less likely to engage in acts of dissent with more severe sanctions. We examined the latter be-

[67]Specifically, a higher percentage of those who believed that the probability of being sanctioned was high, but were uncertain of it, believed that the probability could be lower, than those who were certain it was high (15 percentage point difference). A higher percentage of those who believed that the probability of being sanctioned was low, but were uncertain of it, believed that the probability could be higher, than those who were certain it was low (16 percentage point difference). Uncertainty, in this case, is defined as "absolutely unsure", "very unsure", "unsure", and "neither sure nor unsure", while certainty is defined as "absolutely sure", "very sure" or "sure" (reported certainty); Low sanction risk is defined as "very unlikely", "somewhat unlikely" and "neither likely nor unlikely", while high sanction risk is defined as "somewhat likely" and "very likely" to be detained or arrested (reported risk).

cause people could be more certain of the likelihood of the regime to sanction issues aligned with societal norms and less inclined to engage in these acts.

To assess how emotions are related to uncertainty and self-censorship, we subsequently asked subjects to report the extent to which feeling certain that they would be detained or arrested; certain that they would not be detained or arrested; or uncertain whether they would be detained or arrested for openly discussing the issue with others made them feel 10 positive and negative emotions (1=not at all; 5=a very large extent). These emotions include anxiety, fear, and anger, which psychologists commonly suggest should be associated with certainty or uncertainty, as well as seven other emotions (i.e., disgust, frustration, happiness, lucky, powerless, pride, and sadness).

To determine if emotions affected some subjects more than others, we asked subjects before the experiment how they tended to make decisions. Specifically, we asked: "Please indicate how much, if at all, the following factors typically guide decisions you make: data/facts, emotions, intuition, logic/reason, social norms, and values (1=not at all; 2=a little bit; 3=some; 4=a lot; 5=a huge amount). We also asked several demographic questions at the end of the experiment to look for variation in the effect of emotions on dissent among demographic groups (e.g., gender, age, and income). While we did not have any expectations regarding the demographic factors, we did anticipate that emotions would have a greater effect on those who said that emotions typically guide the decisions that they make. About 45% of respondents said that emotions typically guide decisions they made by "a lot" or "a huge amount."

To evaluate whether the effect of emotions carries over to other issues, we asked subjects how likely they "think someone is to be detained or arrested in Egypt these days" for various activities and "how likely they think at least one hundred people are to do" these activities. We also asked subjects how likely they were to do these activities.[68] The activities are: calling

[68]Specifically, we asked three questions: (1) "How likely are you to do the following things in Egypt these

for public demonstration against government policies; making a complaint to a member of parliament; criticizing the government to a friend; using a VPN to access banned websites; and posting a video on TikTok (1=very unlikely; 5=very likely).[69] If the effect of emotions carries over to other issues, more intense feelings of fear and anxiety should be associated with expectations of a higher risk of being sanctioned for engaging in these activities and lower expectations of our others and our subjects engaging in them. More intense feelings of anger, according to conventional psychology-based arguments, should be associated with higher expectations of the latter. The extent to which these activities are similar to the issues that subjects were thinking about discussing with others will vary by person. Thus, we can evaluate how far-reaching the effect of intense emotions might be in this case.

Lastly, we measured self-censorship. We measured it based on reported self-censorship (under varying degrees of risk of sanction) and observed self-censorship. Our primary measure of reported self-censorship is based on the following question: "How likely are you to share or discuss this thing [issue] with others in the near future?" (1=very likely; 5=very unlikely). Two-thirds (63%) of all subjects in the experiment said they were "very likely" or "somewhat likely" to discuss the issue with others. Given the anonymity of the survey, subjects were unlikely to have misrepresented their intentions to project a certain image of themselves to us. However, they may have misjudged their future behavior. They may have also underestimated their likelihood to censor themselves to project a liberal image of the university and Egyptians more generally to Western audiences.

Observed self-censorship is based on whether or not subjects told us what the issue was when prompted at the end of the experiment (0=no self-censorship; 1=self-censorship).[70]

days?; (2) "How likely do you think someone is to be detained or arrested in Egypt these days for the following?" and (3) "How likely do you think at least 100 people are to do the following things in Cairo these days?

[69] TikTok is not banned in Egypt, and posting on it is not necessarily an act of dissent, since people can post videos, including ones aligned with the regime.

[70] Six subjects said that they were "willing to tell us what is the thing that you'd really like to express publicly or discuss openly with others," but when given an opportunity to describe the issue, did not. They are coded

This measure captures how people behave in practice. A slight majority (52%) of all subjects told us what the issue was in the end. The issues subjects shared with us pertained to: democracy and freedom (40%); social issues (20%); government policies (16%); government institutions - legal system (5%); corruption (5%); military (2%); religion (5%); welfare (3%); international affairs (2%); and other (1%).[71]

Due to the secure environment of the experiment, we had anticipated that our subjects might be less likely to censor themselves in the experiment than in their actual lives.[72] To explore how our subjects might behave in less secure environments, we asked them if they were willing to tell us what the issue that they were thinking about was if the experiment was "anonymous but conducted on their mobile" (32%); "not anonymous but still conducted on the lab computers" (20%); or "not anonymous and conducted on their mobile" (16%). Like with our primary measure of reported self-censorship, subjects might have misjudged how they would behave in practice or overestimated their likelihood to dissent. The sharp decline in the percentage of people who said they were not willing to share this information with us in less secure environments is, nevertheless, consistent with our expectations.

In sum, psychological theories expect uncertainty to be associated in general with more negative emotions, particularly fear and anxiety, and for negative emotions to be associated with expectations of a higher probability of negative events, such as sanctions, to occur. From this, it follows that uncertainty should be associated with less dissent. Some research suggests that anger is likely to be associated with greater certainty and a higher level of dissent. We expect, in contrast to psychological theories, the effect of uncertainty on negative emotions and dissent to depend on people's expectations regarding the probability of repression. Specifically, we expect uncertainty to ease negative emotions when the expected risk of sanction is high and to be associated with more dissent and less self-censorship. We

as self-censorship.

[71]Numbers do not add up to 100% due to rounding.

[72]See footnote 39 for information about the safety protocols used in the experiment

expect the converse to be the case when the risk of sanction is low.

7.2 Results

We conduct two separate sets of analyses of these data. In the first, we examine the relationship between uncertainty and emotions. Existing arguments expect uncertainty to be associated with more intense negative emotions. We expect, in contrast, the effect of uncertainty to depend on people's expectations of the risk of sanction. Specifically, we expect certain pessimists to have more intense negative emotions than uncertain pessimists. We also expect certain optimists to have less intense negative emotions than uncertain optimists. In the second, we analyze the relationship between negative emotions and self-censorship. In it, we expect more intense negative emotions to be associated with greater levels of reported and observed self-censorship. Psychology-based explanations of dissent expect fear and anxiety to be associated with less dissent and anger to be associated with greater dissent. The results that follow include all subjects who passed basic attention checks.[73] In the appendix, we analyze the factors related to passing the attention checks and provide models with alternative attention checks.[74] The results of the latter are fully consistent with the models presented herein.

Emotions and Uncertainty

[73]The reported (un)certainty analysis required no attention check and includes all 478 participants who answered the reported (un)certainty question. The assigned (un)certainty analysis includes the 301 subjects (60%) who passed the basic attention check for (un)certainty. Subjects in the two assigned certainty conditions passed this check if they were "absolutely sure", "very sure", or "sure" of their likelihood to be detained or arrested. Subjects in the assigned uncertainty condition passed this check if they were "absolutely unsure", "very unsure", "unsure" or "neither sure nor unsure".

[74]While dropping subjects that do not comply with post-treatment attention checks can introduce bias, we do not find this to be the case. Subjects who passed the attention check were not significantly different from those who failed it in terms of theoretically relevant variables (i.e., factors likely to affect the extent to which uncertainty affects subjects). That is, they were not significantly different from each other in terms of ideological alignment with the regime (i.e., support for lifting term limits). They were also not significantly different from each other in terms of outspokenness, value placed on dissent, physical or financial risk propensity, socio-economic class, gender, or time lived in Egypt. Assigned and reported uncertainty were significantly associated with compliance (with those more uncertain less likely to comply), but reported risk was not.

Table 8 shows the mean level for each emotion by assigned (un)certainty. As is evident from this table, negative emotions are more intense for individuals in the certain repression condition (2), followed by the uncertain repression condition (3), and the certain-no repression condition (1). We cannot compare uncertainty to certainty for different levels of risk based on assigned (un)certainty because those assigned to the uncertainty condition were not assigned to think of an issue with a given level of risk. For this, we turn to our measures of reported risk and reported (un)certainty.

Table 8: Emotions (Mean) by Assigned (Un)certainty

		certainty		**uncertainty**
		low risk of sanction	**high risk of sanction**	**low/med/high risk of sanction**
	N	**(1)**	**(2)**	**(3)**
negative				
anger	261	2.18	4.15	3.57
anxiety	256	2.33	3.78	3.29
disgust	243	2.00	3.70	3.12
fear	262	2.05	3.81	3.41
frustration	259	2.21	4.26	3.87
powerless	260	2.13	4.20	3.68
sadness	258	2.04	4.00	3.44
positive				
happiness	258	4.02	1.57	1.50
lucky	247	3.38	1.46	1.59
pride	247	3.83	1.85	1.75

Table 9 shows the mean level for each emotion by reported (un)certainty. The breakdown of reported (un)certainty by risk confirms our expectations regarding uncertainty easing negative emotions relative to certainty when the risk of sanction is high and intensifying them when the risk of sanction is low. As the table illustrates, negative emotions are more intense for certain pessimists (2) than uncertain pessimists (4). They are also higher for uncertain optimists (3) than they are for certain optimists (1).

Next, we examine statistically the relationship between uncertainty and negative emotions using ordered logistic regression. The models are presented in Table 10. We present here the results for the three emotions around which the debate regarding uncertainty and

Table 9: Emotions (Mean) by Reported (Un)certainty

		certainty		uncertainty	
		low risk of sanction	high risk of sanction	low risk of sanction	high risk of sanction
	N	(1)	(2)	(3)	(4)
negative					
anger	404	2.77	4.07	3.38	3.49
anxiety	402	2.80	3.73	3.23	3.29
disgust	373	2.56	3.70	3.24	2.89
fear	403	2.54	3.72	3.05	3.63
frustration	407	2.90	4.18	3.56	3.56
powerless	411	2.89	4.02	3.32	3.62
sadness	395	2.69	3.84	3.27	3.24
positive					
happiness	388	3.18	1.94	2.16	1.97
lucky	383	2.83	1.77	2.35	2.11
pride	379	3.18	2.09	2.44	2.21

Note: For reported (un)certainty: certainty in this table is defined as "absolutely sure", "very sure", or "sure" of the probability to be detained or arrested for discussing this issue with others and uncertainty is defined as "absolutely unsure", "very unsure", "unsure", and "neither sure nor unsure" of it. For reported risk, low risk is defined as "very unlikely", "somewhat unlikely," and "neither likely nor unlikely" of being detained or arrested for discussing this issue with others, and high risk is defined as "somewhat likely" or "very likely".

self-censorship revolves – anxiety, fear, and anger. We present all other emotions for assigned and reported uncertainty in the appendix.[75] We include a control in these models for the subjects' desire to express their views since individuals should feel emotions more intensely the greater their desire to express their views.[76]

In Models 9-11, we examine the effects of assigned (un)certainty on the intensity of anxiety, fear, and anger. As is evident from these models, certainty of a low likelihood of punishment is associated with less intense negative emotions than uncertainty, while certainty of a high likelihood of punishment is associated with more intense negative emotions than uncertainty.[77] Wald tests indicate that the experimental conditions are jointly significant in all three models. The results are consistent with our expectations. If we just compare

[75]The results of these models indicate that certainty of a low risk of sanction significantly reduces other negative emotions (i.e., disgust, frustration, powerlessness, and sadness), and significantly increases positive emotions (i.e., happiness, lucky, and pride) relative to uncertainty. Certainty of a high risk of sanction has the converse effect.

[76]The desire to express one's view may also be related to uncertainty regarding the likelihood of being sanctioned for expressing one's views. Subjects may have less desire to express their views, the more certain they are that the probability of being sanctioned is high.

[77]The results are also statistically and substantively the same if we apply more conservative attention checks (See Appendix).

uncertainty to certainty (combining the two certainty measures) in these models, we do not find uncertainty to be significantly related to negative emotions in contrast to psychology-based arguments. In these models, we are unable to compare the effect of certainty to uncertainty while controlling for risk since we did not assign subjects in the uncertainty condition particular levels of risk. Uncertainty, in this case, may be associated with low, medium, or high levels of risk as a result. For this, we turn to our analysis of reported (un)certainty and risk.

Table 10: Relationship of Assigned and Reported (Un)certainty to Emotions

	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**
	anger	anxiety	fear	anger	anxiety	fear
Certainty-Low Probability	-2.01†**	-1.33†**	-2.04†**			
Sanction (Assigned)	(0.35)	(0.35)	(0.36)			
Certainty-High Probability	0.85†**	0.68†*	0.59†			
Sanction (Assigned)	(0.32)	(0.34)	(0.33)			
(Un)certainty (Reported)				-0.52†**	-0.49†**	-0.38†*
				(0.18)	(0.18)	(0.19)
Sanction Risk (Reported)				-0.20†	-0.26†	0.08†
				(0.33)	(0.32)	(0.33)
(Un)certainty (Reported)*				0.15†**	0.13†**	0.09†
Sanction Risk (Reported)				(0.06)	(0.06)	(0.06)
Desire to Say	0.25*	-0.002	0.10	0.05	-0.04	-0.05
	(0.10)	(0.10)	(0.10)	(0.08)	(0.08)	(0.08)
Observations	245	239	242	372	367	368
Log Likelihood	-323.783	-354.938	-342.766	-523.957	-558.092	-551.503
†Wald χ^2	81.23	50.33	75.52	76.18	50.31	68.79
$p \geq X^2$	0.00	0.00	0.00	0.00	0.00	0.00

$*p \leq 0.05$; $**p \leq 0.01$. †Wald Test terms. Models use ordered logistic regression.

In Models 12-14, we examine the effects of assigned (un)certainty on the intensity of anxiety, fear, and anger given the subjects' reported risk of sanction. Figure 4 illustrates the results. In these models, we interact reported (un)certainty and reported risk. The Wald Test indicates that the interaction term is significant. As expected, the models show that when the risk of sanction is low, uncertainty intensifies negative emotions, and when the risk of sanction is high, uncertainty eases negative emotions. The self-reported models also confirm that the observed relationship between uncertainty and emotions is not due to uncertainty being associated with middling expectations of being sanctioned. If we do not interact uncertainty and risk in these models, and simply examine the effect of uncertainty

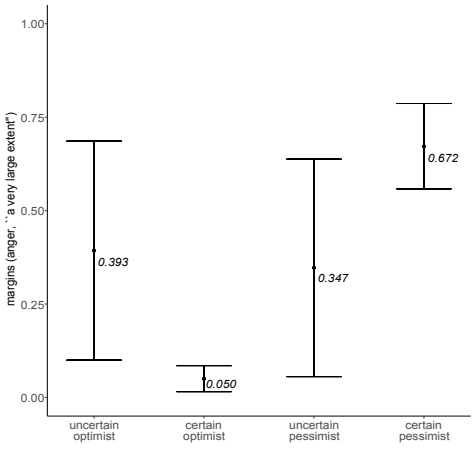
on negative emotions while controlling for risk, uncertainty is not significantly related to negative emotions, in contrast to psychology-based arguments.

We do not find any evidence to suggest that these results are driven by differences in the nature of the specific issues that the subjects thought about as part of the experiment. There are no statistically significant differences in reported uncertainty based on the severity of the expected punishment and the extent to which a subject's position on an issue was outside societal norms (See Appendix). We also do not find evidence to support psychological arguments that uncertainty intensifies affective responses by causing people to contemplate issues for longer. There were no statistically significant differences in the time taken to complete the experiment based on assigned or reported (un)certainty (See Appendix). Bar-Anan, Wilson and Gilbert (2009), who proposed this mechanism, did not find evidence that uncertainty is significantly associated with prolonged thinking or accessibility either, while Kurtz, Wilson and Gilbert (2007) found that prolonged thinking is significantly associated with certainty.

Emotions and Dissent

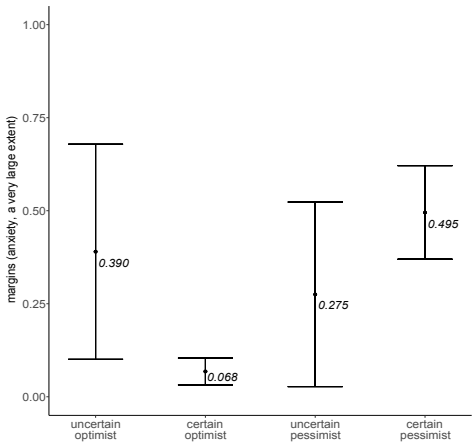
Given that uncertainty alone is not significantly associated with more intense negative emotions, as psychology-based arguments suggest, emotions are unlikely to explain why repression, according to our first experiment, increases self-censorship to a greater degree the more uncertain people are of the risk of sanction prior to repression. Emotions, though, can potentially help explain why the effect of repression is greater for uncertain optimists because emotions are more intense when people believe, but are uncertain that the risk of sanction is low, than when they are certain it is low. Therefore, we also explore the relationship between negative emotions and self-censorship statistically. Table 11 depicts these results.

Figure 4: Emotions by Reported (Un)certainty and Reported Sanction Risk



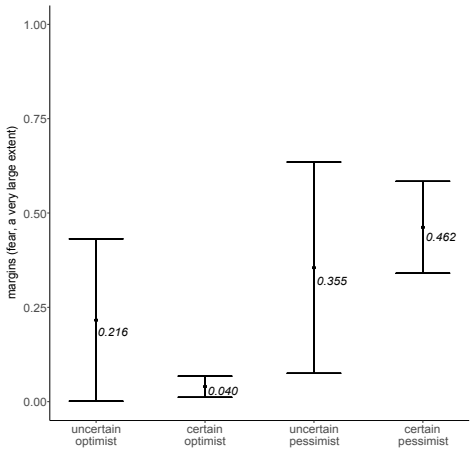
anger (Model 12)

Note: Certain and uncertain are those "absolutely sure" and "absolutely unsure" of the probability of being detained or arrested for discussing the issue with others, respectively. Optimists and pessimists are those who believed that they were "very unlikely" and "very likely" to be detained or arrested, respectively. Bars represent 95% confidence intervals.



anxiety (Model 13)

Note: Certain and uncertain are those "absolutely sure" and "absolutely unsure" of the probability of being detained or arrested for discussing the issue with others, respectively. Optimists and pessimists are those who believed that they were "very unlikely" and "very likely" to be detained or arrested, respectively. Bars represent 95% confidence intervals.



fear (Model 14)

Note: Certain and uncertain are those "absolutely sure" and "absolutely unsure" of the probability of being detained or arrested for discussing the issue with others, respectively. Optimists and pessimists are those who believed that they were "very unlikely" and "very likely" to be detained or arrested, respectively. Bars represent 95% confidence intervals.

Table 11: Relationship of Emotions to Reported Self-Censorship

	Model 15	**Model 16**	**Model 17**	**Model 18**	**Model 19**	**Model 20**
Anger	0.20**			0.11		
	(0.06)			(0.07)		
Anxiety		0.21**			0.09	
		(0.07)			(0.07)	
Fear			0.19**			0.09
			(0.07)			(0.08)
(Un)certainty (Reported)				-0.37†	-0.41†*	-0.38†
				(0.20)	(0.20)	(0.20)
Sanction Risk (Reported)				-0.62†	-0.58†	-0.60†
				(0.36)	(0.36)	(0.36)
(Un)certainty (Reported)*				0.16†**	0.17†**	0.17†**
Sanction Risk (Reported)				(0.06)	(0.06)	(0.06)
Desire to Say	-1.04**	-1.03**	-1.05**	-1.07**	-1.10**	-1.13**
	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Observations	393	388	388	368	364	364
Log Likelihood	-497.019	-493.403	-489.191	-445.931	-438.962	-433.994
†Wald χ^2				23.52	31.09	30.14
p≥X^2				0.00	0.00	0.00

∗p≤0.05; ∗∗p≤0.01. †Wald Test terms. Models use ordered logistic regression.

According to Models 15-17, greater levels of fear, anxiety, and anger are significantly associated with greater reported self-censorship.[78] These emotions have a sizeable effect on self-censorship as well. According to these models, the increase in the probability of being "very unlikely" to discuss the issue with others (i.e., high self-censorship) for those who said that they had not felt fear, anxiety, and anger "at all" and those who said that they had felt fear, anxiety, and anger to "a very large extent" was more than double for all three emotions. Given the high correlation among negative emotions, though, we cannot attribute self-censorship to a particular negative emotion. If we include all negative emotions in the same model, the results for some emotions are not significant.

The results of the models presented remain significant when we include additional controls (e.g., inclination to and importance placed on dissent, physical and financial risk-taking, income, and gender) (See Appendix).[79] However, the results for emotions are not significant if we include the subjects' expectations regarding the risk of sanction, as Models 18-20

[78]These models do not include attention checks for assigned uncertainty since we are interested in the effect of emotions on self-censorship in these models regardless of the cause of these emotions. If we restrict the sample to only subjects who passed the attention check, fear and anger remain significant at the p≤0.01 level and anxiety at the p ≤0.10 level.

[79]In separate models provided in the appendix, we also find that subjects who believed the likelihood of being detained may be higher than they had thought also had more intense negative emotions, as we expected. They were also significantly more likely to censor themselves according to some measures.

demonstrate. Thus, we cannot identify the effect of emotions apart from the subjects' expectations of the risk of sanction. The results for uncertainty in the models are consistent with our expectations. That is, when the risk of sanction is low, uncertainty is associated with more self-censorship, and when the risk of sanction is high, uncertainty is associated with less self-censorship. The measures for emotions are also insignificant if we include our measures of assigned (un)certainty and assigned risk instead of reported (un)certainty and reported risk in the models.

Fear, anxiety, and anger are also not significantly associated with observed self-censorship – unwillingness to tell us what the issue is within the context of the experiment. We believe that this is likely due to the secure and safe environment of the experiment, making subjects willing to share information that they would not otherwise be willing to share. They are significantly related to the subject's reported willingness to tell us what this issue is under less secure environments (i.e., non-anonymous and/or using mobile phones instead of lab computers). More intense emotions of fear, anxiety, and anger reduced the subjects' reported willingness to tell us what the issue was under these less secure environments. (See Appendix.) If we include controls for the risk of sanction in these models, the results for emotions remain significant in most models.

In models presented in the appendix, we looked for heterogeneous treatment and diffusion effects. According to these models, some subjects were more likely to censor themselves as a result of emotions than others. Men, specifically, were more likely to censor themselves based on emotions than women in contrast to societal expectations that women are driven more by emotions than men. Surprisingly, subjects who said that emotions tended to guide their decisions were not significantly more likely to censor themselves due to emotions than subjects who said that emotions tended to have little influence on their decisions.

There is little evidence, according to these models, that the effect of emotions carries over to other activities. In general, subjects were not significantly more likely to think that

other activities had a higher probability of being sanctioned. These activities include: calling for public demonstrations against government policies; making a complaint to a member of parliament; criticizing the government to a friend; using a VPN to access banned websites; and posting a video on TikTok. They were also not significantly more likely to think that Egyptians were less likely to engage in these other activities, or to engage in these activities themselves.

Summary of Findings

Experiment 2 suggests that negative emotions may play a role in reducing dissent and increasing self-censorship. However, they are not likely responsible for the way uncertainty magnifies the deterrent effect of self-censorship overall since uncertainty does not intensify negative emotions in general. Negative emotions are more intense, we find, for certain pessimists than uncertain pessimists, and for uncertain optimists than certain optimists, as we expected. We cannot attribute the effect of emotions on self-censorship to any particular negative emotions due to the high correlation among them. We also cannot confidently distinguish the effect of emotions from the underlying risk of sanction. Importantly, anger is similar to other negative emotions in contrast to the predominant view that anger is a motivating emotion. We do not find any evidence to support the reasons why psychologists argue that uncertainty intensifies negative emotions. We also find little evidence to suggest that the effect of emotions on self-censorship carries over to other issues.

8 Concluding Remarks

Authoritarian regimes often do not make it clear what views, attitudes, and behaviors people may express publicly without being sanctioned. This lack of clarity may stem from vague, overly broad, and contradictory laws. It may also arise from regimes enforcing the rule of law in opaque, inconsistent, and arbitrary ways, among other reasons. Understandably,

this style of rule can create significant uncertainty for people about the probability of being sanctioned for dissent. While it is impossible to know why authoritarian regimes rule in this way, our analysis helps advance our understanding of its effects.

Our findings strengthen, expand, and refine extant knowledge about how uncertainty affects decision-making and dissent in particular. Our results confirm the overall findings of this research. This research, based primarily on interviews, finds that uncertainty reduces dissent. Our results strengthen these findings by adopting a different methodological approach for understanding the effect of uncertainty on dissent. Our analysis, based on two lab-based experiments in Egypt, compares the effect of different levels of uncertainty on self-censorship by measuring quantitatively these phenomena and identifies the causal effect of uncertainty on dissent by randomizing relevant quantities of interest.

Our findings also refine this basic conclusion by helping to identify the conditions under which uncertainty is more likely to reduce dissent and for whom. Uncertainty, we find, does not have a large effect on its own. The effect depends significantly, we find, on people's expectations of the risk of sanction. The effect is greatest, we find, when people expect the risk of sanction to be low. There are many contexts in which regimes repress acts of dissent when people expect the risk of sanction to be low. This often occurs when regimes change policies unexpectedly and without notice and repress acts of dissent that they previously allowed. The example in which we began our study of the TikTok girls is a case in point. It can also occur when there are ideological differences, fissures, and competition for control among elites, among many others.

Uncertainty, we find, does not seem to cause acts of repression to have wide reverberating effects on other forms of dissent. When states repress people for a particular act of dissent, we find, that people are not less likely to dissent on other issues, unless they are very closely related to the act that was repressed. Uncertainty does affect some groups less than others. We find that people who say that they are generally outspoken are less affected by uncertainty

than those who are not. Uncertainty does not affect those ideologically aligned with regimes more than others. It also does not have a greater effect on those who have more to lose because they are wealthy or those who cannot afford to lose because they are poor; those who are risk-takers, or other demographic groups.

Our research also suggests an alternative pathway by which uncertainty affects dissent than existing research. We argue, and find results consistent with our argument, that uncertainty makes acts of repression more effective in deterring dissent by affecting how much people learn from repression about a regime's resolve to sanction dissent, and how much they change their expectations of the risk of sanction and their certainty regarding this risk as a result of it. When there is uncertainty, we find that people are likely to increase their expectations and/or certainty regarding them to a greater extent than when there is not. When there is certainty, we also find evidence that people are more likely to discount the information that repression conveys about a regime's resolve to sanction dissent when repression is inconsistent with their expectations, and that discounting is associated with less self-censorship.

Our research also refines existing arguments linking negative emotions to self-censorship. Existing emotions-based research suggests that uncertainty intensifies negative emotions, which reduce dissent and increase self-censorship. We find, in contrast, that uncertainty only intensifies negative emotions and increases self-censorship when the risk of sanction is low, and eases negative emotions and reduces self-censorship when the risk of sanction is high. We do not find evidence that uncertainty increases negative emotions by prolonging thinking, as some psychological research has hypothesized.

We likewise add to the psychological debate about which negative emotions are associated with uncertainty and which negative emotions are associated with certainty. Psychological research has reached contradictory conclusions regarding the association between uncertainty and fear, anxiety, and anger. Our experimental results indicate that uncertainty has the same

effect on fear, anxiety, and anger, and that all of these negative emotions, including anger, which is typically thought to be a mobilizing emotion, are associated with less dissent and greater self-censorship.[80] We cannot definitively distinguish the effects of these emotions from each other, or from the underlying risk of sanction, however, because they are strongly correlated with each other.

Our findings also expand extant knowledge about the conditions under which repression reduces dissent by distinguishing among authoritarian regimes according to their style of governance, and by showing how fuzzy authoritarian rule influences the effect of repression on dissent. These findings help explain several interesting aspects of repression. They help explain why repression, even within the same country, reduces dissent more for certain issues than others. They also help explain why less intense forms of repression can reduce dissent to a greater extent than more intense forms of repression. They also help explain why people respond differently to repression, even when they are equally committed to a cause and value dissent.

Allowing citizens to voice some criticism of their government is increasingly perceived as an intentional strategy of autocrats to maintain power, albeit a risky one, given the potential for dissent to spiral out of control. Our analysis indicates that, from the regimes' perspective, fostering uncertainty around forms of dissent regimes are willing to tolerate, and certainty around those they are not, is potentially an effective strategy for retaining power. In the former, uncertainty reduces dissent relative to certainty of a low probability of sanction and increases the effectiveness of repression. In the latter, certainty of a high probability of sanction reduces the effectiveness of repression relative to uncertainty, but dissent is unlikely in this case anyway, given the high probability of repression in the first place.

While we examine the effect of fuzzy authoritarian rule and the uncertainty that this style

[80]The effect of anger, we conjecture, may be context-specific, with anger potentially being more likely to increase dissent in non-authoritarian contexts.

of governance has on dissent, punitive uncertainty may arise in different contexts and may be related to other phenomena in authoritarian regimes besides dissent. In authoritarian contexts, it may be linked to regime stability and the extent to which domestic opposition mobilizes against regimes. It may also be associated with the international status of authoritarian regimes and the extent to which authoritarian regimes face criticisms of their domestic policies from democratic states. In non-authoritarian contexts, uncertainty can arise in backsliding democracies, where politicians stimulate uncertainty by behaving like autocrats, and in firms, where the criteria for employment are unclear and the reasons for dismissals are opaque. We anticipate that in these other contexts, uncertainty may have similar effects on dissent since our argument speaks to fundamental aspects of human nature.

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