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## **A “Need for Chaos” and the Sharing of Hostile Political Rumors in Advanced Democracies**

Michael Bang Petersen,<sup>1,2\*</sup> Mathias Osmundsen,<sup>1</sup> & Kevin Arceneaux<sup>3</sup>

<sup>1</sup>Department of Political Science, Aarhus University

<sup>2</sup>Aarhus Institute of Advanced Studies, Aarhus University

<sup>3</sup>Department of Political Science, Temple University

\* Corresponding author: [michael@ps.au.dk](mailto:michael@ps.au.dk)

### *Abstract*

The circulation of hostile political rumors (including but not limited to false news and conspiracy theories) has gained prominence in public debates across advanced democracies. Here, we provide the first comprehensive assessment of the psychological syndrome that elicits motivations to share hostile political rumors among citizens of democratic societies. Against the notion that sharing occurs to help one mainstream political actor in the increasingly polarized electoral competition against other mainstream actors, we demonstrate that sharing motivations are associated with ‘chaotic’ motivations to “burn down” the entire established democratic ‘cosmos’. We show that this extreme discontent is associated with motivations to share hostile political rumors, not because such rumors are viewed to be true but because they are believed to mobilize the audience against disliked elites. We introduce an individual difference measure, the “Need for Chaos”, to measure these motivations and illuminate their social causes, linked to frustrated status-seeking. Finally, we show that chaotic motivations are surprisingly widespread within advanced democracies, having some hold in up to 40 percent of the American national population.

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The rise of social media provides the public with unprecedented power to craft and share new information (i.e., news) with each other. Unfortunately, in the context of politics, this technological transformation has paved the way for intense circulation of news with two characteristics: (1) they portray political candidates or groups negatively; and (2) they have a low evidential basis (Rosenthal et al., 2012; Vosoughi et al., 2018; Howard et al., 2017). This set contains a large variety of different news types including conspiracy theories (Uscinski & Parent, 2014), fake news (Allcott & Gentzkow, 2017), discussions of political scandals (Warner et al., 2012) and negative campaigns (Gross & Johnson, 2016). While very different from journalistic and production perspectives, these different news types nonetheless share these two features from the psychological perspective of the receiver: they incite hostility towards the target, if true, but they can be difficult to verify. Accordingly, we here refer to this larger set as ‘hostile political rumors’. The circulation of hostile political rumors has been linked to large-scale political outcomes within recent years such as the 2016 US presidential election (Allcott & Gentzkow, 2017) and the Brexit referendum (Bastos & Mercea, 2017), in addition to small-scale incidents such as eruptions of protests (Tucker et al., 2017), derailing of police investigations (Starbird et al., 2014) and cyberbullying of political opponents (Munger, 2017).

The goal of the present manuscript is to identify the psychological underpinnings that motivates citizens to share hostile political rumors within advanced democracies. Recent data demonstrates that negatively-valenced false news are shared “farther, faster, deeper, and more broadly than truth” on social media platforms like Twitter, and this is especially the case for false news on politics (Vosoughi et al., 2018: 1147). Furthermore, while bots are important for the origin of false news (Shao et al., 2017), this accelerated sharing of fake news is “because humans, not robots, are more likely to spread it” (Vosoughi et al., 2018: 1150). At the same time, we know

surprisingly little about the psychology that propel citizens of advanced democracies to share hostile political rumors. Previous research primarily seeks to identify the relevance of broad psychological categories such as novelty and emotionality for viral political rumors (Vosoughi et al., 2018). In contrast, significantly more research investigates, first, exposure to online rumors about politics (e.g. Allcott & Gentskow, 2017; Barbera et al., 2015) and, second, beliefs in hostile political rumors (e.g., Berinsky, 2017; Uscniski & Parent, 2014; Miller et al., 2014; Oliver & Wood, 2014). Yet, to fully understand both these phenomena we must first understand why rumors are shared in the first place. Thus, having heard a hostile political rumor on prior occasions is a key predictor of belief; both in the context of ethnic conflicts outside of the Western world (Greenhill & Oppenheim, 2018) and in the context of belief in fake news-related stories within United States (Pennycook et al., 2018; Berinsky, 2017).

While researchers have given limited attention to sharing motivations in context of the current wave of hostile political rumors in advanced democracies, the general psychology of hostile rumors is relatively well understood within the psychological, anthropological and biological sciences (Kurzban, 2011; Trivers, 2011; Tooby & Cosmides, 2010). While multiple psychological motivations shape the spread of rumors in general (DiFonzo & Bordia, 2007), converging evidence suggest that the sharing of hostile rumors about other groups specifically relates to states of conflict between the target group and the group of the rumor sharer. Intergroup conflict is one of the most cooperative of all human activities (Laustsen & Petersen, 2015) and the relative degree of coordination is a key competitive parameter: the best coordinated group often prevails (Fessler & Holbrook, 2016). Accordingly, intergroup conflict elicits motivations for within-group cohesion and experimental studies has demonstrated how intergroup conflict increase group cooperation and efficiency (Gneezy & Fessler, 2011; Sääksvouri et al., 2011).

Rumor sharing is part of this motivational set and is a key tool for generating the needed level of joint attention in intergroup conflict (Tooby & Cosmides, 2010). By sharing a hostile rumor, sharers aim to (1) coordinate the attention and action of the audience with the goal of mobilizing against the target group and (2) signal their willingness to engage in conflict escalation (i.e., helping push the collective over the tipping point for collective action). In this perspective, the sharer is less concerned with the truth value of the rumor. Rather, the hostile rumor is akin to a rallying cry, formulated indirectly (and, therefore, protectively; see Pinker et al., 2008) by outlining the atrocities of the target group. One of the best documentations of these psychological dynamics comes from detailed case studies of the onset of violent ethnic riots such as those in Rwanda and the Balkan areas. In a massive review of the available cases, Horowitz sums up the evidence (2001: 74): "Concealed threats and outrages committed in secret figure prominently in pre-riot rumors. Rumors are (...) embedded in the riot situation, because they are satisfying and useful to rioters and their leaders. (...) Rumor is likely to prevail over accurate information. (...) Rumor prevails because it orders and organizes action-in-process."

Studies in both political science and psychology provide evidence that citizens' political identities in advanced democracies emerge from generic group psychological processes (Campbell et al., 1960; Green et al., 2004). Hence they are directly undergirded by the same psychological mechanisms that process ethnic and racial identities (Pietraszewski et al., 2015). Furthermore, the hostile political rumors that are disseminated in the context of advanced democratic politics share a remarkable similarity to rumors disseminated to mobilize against other groups in the context of, for example, ethnic riots: both emphasize the target group's (a) power, (b) low valuation of the ingroup and (c) readiness to aggress (compare Horowitz [2001] and Uscinski & Parent [2014]). If this similarity in appearance is indicative of a similarity in psychological origin, it suggests that

fake news, conspiracy theories and other modern forms of hostile political rumors are shared not because of their truth value but because the sharer perceive them as tools for facilitating mobilization against a given group. Yet, while this theoretical premise is a straight-forward application of insights on rumor-sharing across the behavioral sciences, it leaves open a key parameter for understanding the situation of advanced democracies: who are shares of hostile political rumors motivated to mobilize against?

In this manuscript, we consider two potential targets and, hence, two different types of motivations behind the sharing of political rumors. Thus, the rise of social media and the circulation of hostile political rumors has occurred in the wake of two distinct, yet interrelated large-scale socio-political developments (Turchin, 2016). First, increasing political polarization has been observed across Western democracies and, in particular, in United States. At the level of American political elites, there are deepened ideological cleavages and gridlock in Congress (Hare & Poole, 2014). This elite polarization has fueled polarization also at the public level. Both inside and outside United States there are increased hostile feelings towards people that support a different political party than oneself (Iyengar et al., 2012; Westwood et al., 2018) and researchers have noted the development of so-called negative partisanship where political identification is primarily driven by animosity towards an opposing political party (Abramowitz & Webster, 2016). Second, increased competition between elites within the political system has coincided with emerging resentment towards the established political system as such (Kitschelt, 2002; Kriesi, 2014). Across multiple advanced democracies, population polls report not just increased dissatisfaction with the workings of democracy (Doherty et al., 2015) but also the existence of a general sentiment of “losing out” in society of today (Kriesi et al., 2006). This latter sentiment has occurred together with the worsening of a number of objective indicators related to well-being

including the stagnation of real wages, increasing inequality and a rise in the number of political violent events since the 1960s (Turchin, 2016).

These two different developments points in the direction of two potential targets to mobilize against and two corresponding motivations behind a citizens' sharing of a hostile political rumor. First, sharers of hostile political rumors can be motivated by partisan motivations. That is, supporters of one established political party can be motivated to mobilize an audience against another political party in the increasingly polarized electoral competition. Second, sharers of hostile political rumors can be motivated by, what we term, 'chaotic' motivations. That is, when people share hostile political rumors they might do so with the motivation to mobilize the audience against the entire political 'cosmos', i.e., the established democratic order, rather than aiding one mainstream actor within the system against another.

Because beliefs in hostile political rumors are strongly shaped by partisanship (Allcott & Gentskow, 2017; Miller et al., 2014; Uscniski et al, 2016; Van Bavel & Pereira, 2018), many researchers have suggested that the circulation of such rumors are related to increasing political polarization and, hence, partisan motivations (Allcott & Gentskow, 2017; Spohr, 2017). Specifically, beliefs in hostile political rumors follow party cleavages such that, in the United States, supporters of the Democratic Party believe in rumors that portrays the Republican party negative and vice versa (see, e.g., Miller et al., 2016; Uscniski et al, 2016). In this perspective, the sharing of hostile rumors is part of the increased polarization of the struggle between different party groups over electoral control. Such a perspective is consistent with numerous lines of evidence. Partisans tend in general to share political information with co-partisans on social media (Barbera et al., 2015; although see Bakshy et al., 2015) and, in interpersonal discussions, partisans have been found to primarily convey information consistent with their party (Druckman et al.,

2018). Partisans also in general believe political news (i.e., not just political rumors) that are aligned with their partisanship (Leeper & Slothuus, 2014).

Yet, there are reasons that insights on the motivations behind believing in rumors does not necessarily translate into insights on the motivations behind the sharing of rumors. First, acts of believing and acts of sharing differ in their potential repercussions. To believe is a private act, while to share is a public act. Accordingly, sharing will more easily entail social repercussions, especially when the content is controversial and related to an ongoing conflict as is the case with hostile political rumors (and, hence, is often accompanied with protective measures in the form of qualifiers such as “I have heard that...”, “I don’t whether it is true but...” and “This is big, if true!”). All else equal, these considerations imply that it requires stronger motivations (i.e., stronger animosity against the target group) to share a hostile rumor than to simply believe in it. In relation to the potential role of partisanship, this raises the question of whether supporters of one mainstream political actor (a political party) reach the emotional threshold for sharing hostile rumors that targets another mainstream actor (another political party). In contrast, individuals who hold negative feelings towards all mainstream political actors – and, potentially, the entire system within which these actors are operating – should experience less brakes on escalating levels of animosity. Second, and turning to the concrete content of the current wave of hostile political rumors, most hostile political rumors are double-edged swords from a partisan perspective. While many hostile political rumors (e.g., Obama being Muslim or that the Democrats secretly operate a pedophilia ring) targets and smears a particular political party, they also contain a conspirational element that damages the entire system and, hence, all actors within it (Uscinki & Parent, 2014). More specifically, if an actor within a system can operate like the rumors prescribe, this suggests that the checks and balances of the entire system is rigged. As consequence, a partisan that shares

hostile political rumors about an opposing party is not just mobilizing the audience against the target party but also his own party, acting within the system, as well.

On this basis, we propose that the motivations that underlie the sharing of hostile political rumors within current Western societies are not exclusively partisan in nature. Instead, we view it is likely that these motivations are also ‘chaotic’ in nature. As such, we predict that the sharing of hostile political rumors reflects extreme discontent with the current structure of society and one’s place within it. Consistent with this prediction, prior studies on rumor sharing in general have found such behavior to be related to social uncertainty (DiFonzo & Bordia, 2007). Furthermore, past work on beliefs in conspiracies theories has shown that such beliefs are correlated with lack of trust (Miller et al., 2016) and beliefs in the existence of evil (Oliver & Wood, 2014). Finally, exposure to fake news has been shown to be correlated to “feelings of inefficacy, alienation and cynicism” (Balmas, 2014: 430). Yet, as we expect sharing to be undergirded by the same psychological mechanisms that underlie, for example, the onset of ethnic conflict, we suggest that these chaotic motivations go beyond traditional forms of democratic discontent such as political cynicism and populism. Instead, they are potentially more akin to precursors of the sentiments associated with radicalism; albeit not a radicalism from the outside but a radicalism emerging from the inside of advanced democratic societies themselves (see also Tucker et al., 2017). As an initial piece of evidence, Uscinki & Parent (2014: 98) show that beliefs in conspiracy theories is associated with acceptance of violence against the government.

### **Materials and Methods Overview: Tests and Samples**

Previous studies have attempted to shed light on the motivations underlying the spread of political rumors by analyzing the characteristics of viral rumors (Vosoughi et al., 2018). This is an important



first step but only provides indirect evidence of the involved psychological processes. To remedy this shortcoming, we here utilize individual-level data that directly assess people's stated motivations to share rumors. While this involves a reliance on self-reported data (and, hence, the usual caveats), this also allows us to shed the first direct light on the psychology undergirding motivations to share hostile political rumors.

We proceed with four tests. Test 1 provides an initial test of the role of chaotic motivations as explanation for motivations to share hostile political rumors and pit this role against the role of partisan motivations. Test 1 provides strong evidence against the role of partisan motivations and provides initial evidence that chaotic motives explains motivations to share hostile political rumors. To integrate this finding with existing work on the sharing of hostile rumors, Test 2 demonstrates that chaotic motivations motivate the sharing of hostile political rumors with the aim of mobilizing against the target of rumors rather than (a) for epistemic reasons or (b) to defend the target of rumors. To directly assess the role of chaotic motivations, Test 3 develops a new scale for individual differences in such motivations, the "Need for Chaos" scale, and demonstrates that this scale explains the majority of the variance in motivations to share hostile political rumors. Finally, Test 4 integrates psychological research on status-seeking motivations to identify which individuals are most likely to feel a Need for Chaos.

To test our hypotheses, we employ a cross-national research design that comprises a number of cross-sectional surveys in Denmark and the United States. The choice of these two countries provides high levels of generalizability within the universe of advanced democracies. Hence, Denmark and United States differ sharply in terms of political polarization, trust in the media and political participation rates with United States being more polarized, having lower trust in the media and having lower political engagement than Denmark (see Christiansen & Togeby,

2006). To further improve on the generalizability, we report findings from a nationally representative sample from each country (Samples 1 and 4). Furthermore, given that we utilize theories of rumor spread in ethnic conflicts, we compare our findings with findings in a sample of Non-Western immigrants (living in Denmark) and their motivations to share hostile rumors relevant to ethnic cleavages. A homology in the findings across these samples lends credence to the involvement of similar psychological mechanisms.

All together, we conducted six studies in Denmark and the United States. We summarize the samples in Table 1, and direct attention to SI Appendices A1 and A2 for sample characteristics, sampling procedures and wordings for all survey questions. Although the details varied from one sample to another, they included the same survey template. As we detail below, we asked participants in all studies to state whether they accepted a series of hostile political rumors as true, and if they would share them on social media. The actual number of hostile political rumors varied between our samples (cf. Table 1), but they always included an equal number of stories that denigrated political figures and groups associated with *both* the political left and right; and, in the Non-Western Immigrant Sample (Sample 2), figures and groups associated with ethnic Danes and non-Western immigrants. In all samples, participants were thoroughly debriefed after completion of the survey.

- Table 1 about here -

### **Test 1: Chaotic versus Partisan Motivations and the Sharing of Hostile Political Rumors**

Our initial investigation of chaotic and partisan motivations utilizes and compares a number of different measures. First, we obtain measures of whether an individual engages in politics within

or outside the established system. For maximum contrast, we compare individual differences in motivations to engage in legal political activities and motivations to engage in violent political activities and track how these relates to motivations to share hostile political rumors. A partisan motivation perspective in which rumors are spread on behalf of mainstream political actors suggests that legal activism (i.e., mainstream activism) is a better predictor than violent activism. A chaotic motivations perspective entails the opposite prediction. Second, we directly obtain measures of partisan motivations and investigate how partisan identification with the targets of hostile political rumors shape the motivation to spread these rumors.

### *Materials and Methods*

Test 1 relies on survey data from Samples 1-4 in which all necessary variables for the test are available.

*Motivations related to hostile political rumors.* To assess motivations related to hostile political rumors, we selected a series of statements that were (a) political or ideological in nature, (b) denigrated a particular group and (c) for which the evidence was non-existent or difficult to assess. Our final set of hostile rumors combined (a) statements that had been used in recent studies (e.g., Miller et al. 2016; Smallpage et al. 2017), and (b) new statements that we identified via searches in relevant Internet fora including prominent fact-checking sites (e.g., snopes.com, factcheck.org). In the Danish Sample 1, and in the U.S. Samples 3-4, we included both hostile political rumors that denigrated the political left (e.g., “Former President Obama has been creating a “shadow-government” [...] to take down President Trump”), and rumors that portrayed the political right negatively (e.g., “Republican Tax Bill Passed in December Stops Medicare from Covering Cancer Treatment”). A partisan motivation account entails that Conservatives would

endorse the former, while Liberals would more readily accept the latter. In the Danish Sample 2, which focused on the potential conflict between ethnic Danes and non-Western immigrants, we included rumors that targeted both groups (e.g., in the case of rumors targeting Danes, “Danish MPs intentionally accuse Muslim children of being radicalized, so that they can remove them from their families”; in the case of rumors targeting immigrants: “Leading Imams in Denmark encourage non-Western immigrants to commit benefit fraud”). See SI Appendix A2 for full question wordings.

For each of the rumor statements, we asked our participants if they disagreed or agreed with two statements: (1) “I think the story is true”, and (2) “I might share the story on a social media platform (e.g., Facebook, Twitter)”. The first item assesses participants’ belief in the political hostile rumor, while the second statement item assesses participants’ motivations to share the hostile political rumors. In all samples, we also included a number of hostile political rumors that do not specifically target the focal political groups. In SI Appendix C4 we present analyses for these additional rumors. As shown, the findings for these additional rumors are remarkably similar to the findings we present here and lend additional credence to the conclusions of the main text.

*Measures of violent and legal activism.* To measure different forms of activism in Samples 1-4, we relied on scales from the literature on political mobilization and radicalization that assess behavioral intentions (Moskalenko & McCauley 2009; Gøtzsche-Astrup, 2018). Specifically, we presented to our participants “a series of possible actions that you can carry out to promote your group’s political rights and interests. By “your group”, we mean the political, religious, or social group that you identify with the most.” They were then asked if they disagreed or agreed with 15 statements. We averaged their responses to five of the statements (e.g., “I would attack police or

security forces if I saw them beating members of my group.”), to construct our primary explanatory variable, the *Violent Activism Scale*, which we scaled to range from 0 to 1, where higher values express intentions to engage in violent activism ( $\alpha_{\text{Violent Activism}}\text{'s} > .83$ ;  $M_{\text{Violent, Sample I}} = .14$ ,  $SD_{\text{Violent, Sample I}} = .19$ ;  $M_{\text{Violent, Sample II}} = .24$ ,  $SD_{\text{Violent, Sample II}} = .25$ ;  $M_{\text{Violent, Sample III}} = .22$ ,  $SD_{\text{Violent, Sample III}} = .25$ ;  $M_{\text{Violent, Sample IV}} = .26$ ,  $SD_{\text{Violent, Sample IV}} = .22$ ). We also used five other statements (e.g., “I would become a member of an organization that fights for my group's political rights and interests”), to construct a *Legal Activism Scale*, coded again to range from 0 to 1, where higher values indicate stronger intentions to engage in legal activism ( $\alpha_{\text{Legal Activism}}\text{'s} > .85$ ;  $M_{\text{Legal, Sample I}} = .42$ ,  $SD_{\text{Legal, Sample I}} = .27$ ;  $M_{\text{Legal, Sample II}} = .50$ ,  $SD_{\text{Legal, Sample II}} = .27$ ;  $M_{\text{Legal, Sample III}} = .54$ ,  $SD_{\text{Legal, Sample III}} = .26$ ;  $M_{\text{Legal, Sample IV}} = .52$ ,  $SD_{\text{Legal, Sample IV}} = .26$ ). (The last five items assessed behavioral intentions to engage in illegal but non-violent activities. In the SI Appendix B1, Tables B1e-g, we provide results for this form of activism. These are consistent with the findings for violent activism but less strong.)

*Measures of Partisan Identities.* To gauge if participants’ identification with the targets of hostile political rumors influenced their responses to those same stories, we used a modified form of the *Partisan Identity Scale* from Bankert, Huddy, and Rosema (2017). This measure is well—suited as we sought to obtain identifications with numerous different groups. In the U.S. Samples 3-4, participants were asked if they disagreed or agreed with six statements, like “When I speak about [Democrats/Republicans], I usually say “we” instead of “they”, and “When people criticize [Democrats/Republicans], it feels like a personal insult”. They were asked to consider each statement in both the “Democratic” and “Republican” version, which allowed us to create both a measure of *Democratic ID intensity* and *Republican ID intensity* (on scales from 0-1,  $M_{\text{Democrat, Sample III}} = .37$ ,  $SD_{\text{Democrat, Sample III}} = .27$ ;  $M_{\text{Democrat, Sample IV}} = .41$ ,  $SD_{\text{Democrat, Sample IV}} = .27$ ;  $M_{\text{Republican, Sample III}} = .37$ ,  $SD_{\text{Republican, Sample III}} = .27$ ;  $M_{\text{Republican, Sample IV}} = .41$ ,  $SD_{\text{Republican, Sample IV}} = .27$ ).

Sample III = .29,  $SD_{\text{Republican, Sample III}} = .27$ ;  $M_{\text{Republican, Sample IV}} = .36$ ,  $SD_{\text{Republican, Sample IV}} = .26$ ). Our measures in the Danish samples were similar, except that in Sample 1 we replaced “Democrats” and “Republicans” with “Left-wingers” and “Right-wingers”, and with “Danes” and “Immigrants” in Sample 2, to construct our measures of social identities (on scales from 0-1,  $M_{\text{Left-winger, Sample I}} = .37$ ,  $SD_{\text{Left-winger, Sample I}} = .24$ ;  $M_{\text{Right-winger, Sample I}} = .34$ ,  $SD_{\text{Right-winger, Sample I}} = .24$ ;  $M_{\text{Immigrant, Sample II}} = .43$ ,  $SD_{\text{Immigrant, Sample II}} = .28$ ;  $M_{\text{Ethnic Dane, Sample II}} = .62$ ,  $SD_{\text{Ethnic Dane, Sample II}} = .21$ ). From these measures, we – for each rumor – build two measures that we include in the final analyses. First, we construct a measure of identification with the target of the rumor. Second, we construct a measure of identification with the group opposed to the target of the rumor (i.e., identification with Republicans for rumors that target the Democrats).

To make maximal use of the available data, our units of analysis are participants’ responses to a specific hostile political rumor. For example, in Sample 1, our 1,006 participants responded to six rumors, which provides us with a total of  $1,006 \times 6 = 6,036$  observations. Because each of our participants makes multiple responses, we use cluster robust standard errors with subject ID as the cluster variable to correct for within-participant autocorrelation. We always include dummy variables, one for each of the rumors, to control for any differences between them. Finally, we scale all continuous variables to range from 0 to 1, so that we can interpret the coefficients as the change in percentage points of the full scale of the dependent variable as we move from the low to the high extreme of the independent variable. Finally, to increase the likelihood that the regression estimates we present below have a causal interpretation, we control for gender, age, education and ideology in the Danish Samples 1-2; and in the U.S. Samples 3-4 we include the same set of variables, and additionally control for race.

## Results

*Is violent activism associated specifically with motivations to share hostile political rumors? Yes.*

Figure 1 presents estimated coefficients from ordinary least squares regression models where we regress participants' motivations to believe (left) and to share (right) hostile political rumors on their support for violent activism, their support for legal activism, as well as our set of covariates. (We do not present coefficients for the covariates here but see SI Appendix B1 for detailed results from all regression models.) We ran our models separately for the four samples. As predicted, violent activism strongly predicts motivations to share hostile political rumors. This is true across all our samples, in both Denmark (Sample 1), among Non-Western immigrants (Sample 2) and in the socially diverse and in representative samples from the United States (Samples 3-4):  $b_{\text{Violent Activism}}$ 's range between 0.414 -- 0.604,  $p$ 's < 0.001. In other words, motivations to share hostile political rumors increase with 40-60 percentage points of the full scale, as we move from the low to the high extreme of the violent activism scale. This constitutes a massive effect size. In contrast, the effects of legal activism are appreciably weaker, and not always statistically significant:  $b_{\text{Legal Activism}}$ 's between 0.056 - 0.106. Violent activism, rather than legal activism, also predicted motivations to believe in hostile political rumors:  $b_{\text{Violent Activism}}$ 's between 0.306 -- 0.427,  $p$ 's < 0.001. Importantly, however, a series of seemingly unrelated regressions run on the two models within each sample, revealed that the absolute size of the coefficient for violent activism was significantly larger for motivations to *share* fake news relative to motivations to *believe*.  $\chi^2$  in all samples > 106,3, all  $p$ 's < 0.001.

- Figure 1 about here -

*Are partisan motivations associated with motivations to share hostile political rumors?* No, not in any way consistent with the traditional partisan motivation account (see SI Appendix B1). First, we followed past studies and examined the associations between partisan motivations and beliefs in hostile political rumors. Consistent with prior findings, we found that people were *less* likely to believe rumors that denigrated groups they support ( $b$ 's range between -0.08 -- -0.233,  $p$ 's < 0.05), and even *more* likely to believe rumors that attributed nefarious intent to opposing groups ( $b$ 's range between 0.232 -- 0.518,  $p$ 's < 0.001). As expected, however, these patterns do not travel to motivations to share hostile political rumors. While people with extreme partisan identities were more motivated to share rumors about opposing groups ( $b$ 's range between 0.174 -- 0.438,  $p$ 's < 0.05), they were – in direct contrast to a partisan account – also more motivated to share rumors that impugned their own group, at least in the Danish Sample 1, and the U.S. Samples 3-4:  $b$ 's range between 0.064 -- 0.179,  $p$ 's < 0.05. This falsification of a simple partisan account of motivations to share hostile political rumors, is reinforced when we examine whether violent activism and political identification interacts in their associations on participants' motivation to share (see SI Appendix B1). In all our samples, we find significant or marginal significant interactions between violent activism, on the one hand, and both identification with the rumor target and with its rival, on the other hand. As identification with the target group's rival increases, violent activists become increasingly motivated to share hostile political rumors. Yet, in contrast to a simple partisan account, this is also the case for identification with the target of the rumors. Violent activists become even more motivated to share a rumor, if they identify with the target. Violent activists with extreme political identities are, in other words, motivated to share all political rumors, independently of their target. Importantly, this conclusion is reinforced by



analyses presented in the SI Appendix C4 which examines motivations to share a broader set of political rumors.

In sum, across well-powered representative and convenience samples from Denmark and the United States, we find that violent activism is associated with motivations to share hostile political rumors, irrespective of target. Furthermore, this association is specific for violent activism, which challenges the established system, rather than legal activism. In fact, violent activists constitute the core group of those motivated to share hostile political rumors. For an average participant, additional analyses show that absent violent activism (i.e., when this variable equals the minimum), the predicted motivation to share is exceptionally low (.09, .11, .11 and .27 for Samples 1-4, respectively, on 0-1 scale; for those with a maximum value of violent activism, the corresponding estimates are .63, .71, .53 and .57). This promiscuous sharing of rumors suggests that those who share rumors are motivated by chaotic motivations, targeting the established order as such rather than assisting one mainstream actor within the system against the other. This is reinforced by the fact that sharing motivations do not follow a partisan logic in any simple way. In contrast, extreme political identities fuel sharing motivations, irrespective of target. Importantly, these conclusions are unique for sharing motivations and not beliefs in hostile rumors. Consistent with past studies, beliefs in follow a partisan logic. This distinction between beliefs and sharing motivations is key. First of all, the remedy concerns about endogeneity. Given that the effects of chaotic motivations on sharing motivations exists over and beyond beliefs demonstrates that beliefs in hostile rumors in not an underlying variable that accounts for both types of motivations. Second, this is suggestive of the argument that hostile rumors are not shared for epistemic reasons. They are tools for mobilization and are shared if they are judged as conducive for this end, irrespective of beliefs.

## **Test 2: Why Chaotic Motivations Prompt Sharing of All Hostile Political Rumors**

The goal of Test 2 is to provide further evidence for these conclusions of Test 1. The account that we are promoting suggests that the promiscuous sharing from violent activists reflects chaotic motivations such that (a) sharers of hostile political rumors are motivated to mobilize against all mainstream actors and (b) perceive rumors as tools to this end. With Test 2, we seek to provide direct evidence of these assertions. First, Test 1 did not provide definitive evidence against the possibility that violent extremists are motivated by epistemic concerns. Potentially, they simply believe that hostile political rumors are true and are motivated to share this information with others. Second, there is a way in which the partisan account can potentially still be valid. Thus, perhaps extremists share hostile political rumors for defensive purposes, i.e., to point out the rhetoric that the party is facing and, hence, mobilize partisan groups against those crafting the rumor in the first place. Finally, the literature on cyberbullying as promoted the argument that “trolls just want to have fun” (Buckels et al., 2010: 97). In contrast, we argue that while sharers of hostile rumors might also be humorously motivated, their behavior is at the same time deeply instrumental: they seek to mobilize against the system.

### *Materials and Methods*

To test the expectations, we implemented two novel survey components in the U.S. Sample 5, designed to directly obtain measures of the underlying motivations for sharing hostile political rumors. In addition, we again obtained the measures of violent activism and partisan identification.

*Motivations to Share Hostile Political Rumors.* In this survey, we focused on rumors relating to the Democrats and Republicans. Like before, participants first read a list of hostile

political rumors, six that impugned Democrats (e.g., “Hillary Clinton Approved Deal to Transfer US Uranium Deposits to Russian Company for Donations to Clinton Foundation”), and six of which attacked Republicans (e.g., “Republican National Committee Paid People to Vote Illegally in US Senate Elections”). This time, however, we asked participants to choose the one rumor about Democrats, and the one about Republicans, that they were “most motivated to share”. We then obtained two sets of measures. First, we obtained measures designed to test whether violent activists share rumors for defensive purposes. Thus, for each of the two stories they selected, they were then asked if they wanted to share the story to defend or oppose “the groups or people that are negatively portrayed in the story” (1= To Oppose; 7 = To Defend). We label their responses *Defense Motivation* in the analysis and scale the variable to range from 0 to 1, where higher values indicate a motivation to defend the group ( $M = .33$ ,  $SD = .30$ ). Second, we obtained measures designed to directly contrast mobilization-related and epistemic motivations for sharing rumors. Thus, we asked if participants disagreed or agreed with four other potential motives to share the rumors: (a) they helped mobilize against disliked groups ( $M = .55$ ,  $SD = .29$ ; all motives are scaled from 0-1 with higher values indicating higher agreement), (b) they came closest to the truth ( $M = .68$ ,  $SD = .26$ ), (c) they had the largest consequences if it turned out to be true ( $M = .66$ ,  $SD = .28$ ) and (d) their friends would find them amusing ( $M = .53$ ,  $SD = .31$ ). Motive (a) corresponds to our theoretical argument, motives (b)-(c) reflects the two key potential epistemic reasons for sharing and motive (d) is included to assess whether sharers are simply looking for “fun”. We analyze these motivations separately.

*Violent Activism.* We measured and coded violent activism exactly as in the previous samples. ( $\alpha_{\text{Violent, Sample V}} = .88$ ,  $M_{\text{Violent, Sample V}} = .21$ ,  $SD_{\text{Violent, Sample V}} = .25$ ).

*Party Identification.* As we exclusively focus on US political parties in Test 2, we were able to deploy the best validated measure of US partisanship as our measure of identification with the rumor targets (Campbell et al., 1960): “Generally speaking do you think of yourself as a Democrat, a Republican, or an Independent?” Participants who answered Democrat or Republican were asked if they were a strong or not very strong Democrat/Republican and independents if they were closer to Democrats or Republicans. (For length reason, the survey did not include the identity measures used in Test 1.) From participants’ answer, we next constructed a measure termed *Identification with Target*, that tapped the strength of identification with the target of the specific rumor (i.e., scaled from “strong Democrat” to “strong Republican” when the target was Republican and reversed scaled when the target was a Democrat). The measure is also coded from 0 and 1, with higher values indicating higher identification.

## *Results*

*Do violent activists share hostile political rumors to defend the targets?* No. To examine this, we examine how the two-way interaction between violent activism and identification with the target shapes defensive motivations (see SI Appendix B2, Table B2a). Overall, we find that participants who identify with the political groups that is impugned by the rumor are more likely to share to defend them ( $b_{\text{ID with target}} = 0.137, p < .001$ ). However, this main effect is qualified by significant, negative interaction with violent activism ( $b = -0.246, p < 0.001$ ). This interaction effect is illustrated in Figure 2, Panel A. As seen, among violent activists, the effects of identification with the rumor target on motivations to defend are fully muted. For violent activists, it does not matter for their motivations whether they identify or not with the group that are represented by the targeted elites.

- Figure 2 about here -

*Why do violent activists promiscuously share hostile political rumors?* Figure 2, Panel B gives coefficients from models where we regress four different types of motivations to share hostile political rumors on violent activism (see SI Appendix B2, Table B2b). Consistent with the cyberbullying literature, we find that violent activists share hostile rumors to amuse their friends ( $b_{\text{Amuse}} = 0.164, p < 0.001$ ). As predicted, however, sharing also reflect purely instrumental motivations related to mobilization. Thus, violent activists also report to share hostile political rumors to mobilize against disliked groups, Democrats and Republicans alike ( $b_{\text{Mobilize}} = 0.119, p < 0.01$ ). As also expected, we find no evidence they share hostile rumors because they believe they are true – in fact, the coefficient is significant and negative ( $b_{\text{Truth}} = -0.115, p < 0.01$ ) – nor that they share because they believe the rumors have important consequences if they turn out to be true ( $b_{\text{Consequence}} = 0.036, p = 0.335$ ). Additional analyses (see SI Appendix B2, Table B2b) suggest that the effects of violent activism are relatively independent of whether or not participants identify with the target of the rumors.<sup>1</sup>

In sum, we find no compelling evidence that violent activists share hostile rumors to help defend elites (even if they identify with the groups these elites represent), nor because they believe the rumors are true or important. Rather, they seem motivated by opposite concerns, namely to spread information that mobilize others against politicians in general. In doing, so they

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<sup>1</sup> The effects of violent activism on motivations to share rumors because (i) they help mobilize against disliked groups and (ii) because they may be true is somewhat stronger among participants who identify with the rumor target.

expect to amuse but they are not just doing it “to have fun”. For violent activists, rumor sharing is also an instrumental act of mobilization.

### **Test 3: A “Need for Chaos” As the Underlying Psychological Trait**

Tests 1 and 2 demonstrate that there is core group of individuals across, at least, two advanced democracies that are motivated to share hostile political rumors of any form and with any mainstream target. No other group is particularly motivated to share such rumors. The identified core group are motivated by violent radicalism and share rumors partly to amuse and partly with the explicit purpose of mobilizing against groups they dislike. In contrast, they do not share rumors because they believe them to be true. For the core group, hostile political rumors are simply a tool to create havoc; something they find amusing. All in all, their motivations seem thus perfectly aligned with what we have termed chaotic motivations.

Multiple distinct literatures have circulated around the concept of chaotic motivations (using different labels) such as research on online trolling (e.g., Lopez & Hillygus, 2018), cyberbullying (e.g., Buckels et al., 2014), protest mobilization via social media (e.g., Tucker et al., 2017) and democratic dissatisfaction and populism (e.g., Kitschelt, 2002). However, comprehensive and direct empirical assessments of this motivational phenotype is, to the best of our knowledge, non-existing. In popular culture, in contrast, chaotic motivations have been featured prominently. One of the best illustrations of these motivations comes from the movie, *The Dark Knight*. In a central scene of the movie, the inner motivations of the antagonist, the Joker, are explained by Alfred, the butler of Batman: “...some men aren't looking for anything logical (...). They can't be bought, bullied, reasoned, or negotiated with. Some men just want to watch the world burn.” In Tests 1 and 2, we examined the role of chaotic motivations using the measure of

violent radicalism. In Test 3, we seek to directly assess chaotic motivations as the desire to “watch the world burn” and test how they are associated with motivations to share hostile political rumors. To this end, we outline and report a novel individual difference measure, the “Need for Chaos” scale.<sup>2</sup> In addition, we take numerous steps to ensure that the associations of this measure are not confounded by related individual difference measures or by methodological artefacts.

### *Materials and Methods*

In Test 3, we rely on Samples 3-6. Hence, we are only able to assess Need for Chaos in American samples. To assess the role of Need for Chaos in the sharing of hostile rumors, we need our measure of rumor sharing as well as a measure of Need for Chaos. In addition, in Samples 5 and 6, we assess a range of instruments designed to gauge the robustness of the any associations of Need for Chaos. We will describe the operationalization of these additional instruments as they are utilized.

*Motivations to Share Hostile Political Rumors.* Motivations to share hostile political rumors were coded exactly as before in Samples 3-5. As with the other samples, participants in Sample 6 were asked if they would share six political rumors, 3 targeting Democrats, and three targeting Republicans.

*Need for Chaos.* We developed a novel scale to measure Need for Chaos. Initially, in Sample 3, we fielded a pool of 11 items, which in various ways tapped a desire to “watch the

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<sup>2</sup> We use the term “need” in the same way as it is used in multiple measures of powerful psychological individual differences (such as the need for cognition or need for cognitive closure) in the sense of something that “directs behavior towards a goal and cause tension when this goal is not attained” (cited in Cacioppo & Petty, 1982: 117). Hence, it is not a biological need in the sense of thirst or hunger. Nor does the “need for chaos” constitute a fundamental need in the sense of Kenrick et al. (2010). As we will detail in Test 4, the underlying evolutionary problem that the desire for chaos expresses is related to status-acquisition.

world burn”. From this pool, we used Principal Components Analysis to identify the items that formed a unidimensional scale (see SI Appendix C2). In the end, we ended up with 8 statements to tap the latent trait of Need for Chaos. This 8-item scale was subsequently implemented in Samples 4-6. The final items were as follows: “I get a kick when natural disasters strike in foreign countries”, “I fantasize about a natural disaster wiping out most of humanity such that a small group of people can start all over”, “I think society should be burned to the ground”, “When I think about our political and social institutions, I cannot help thinking “just let them all burn””, “We cannot fix the problems in our social institutions, we need to tear them down and start over”, “I need chaos around me - it is too boring if nothing is going on”, “Sometimes I just feel like destroying beautiful things”, and “There is no right and wrong in the world”. The statements were presented in random order and participants were asked if they disagreed or agreed with each of them. We then averaged responses to the statements to create our *Need for Chaos* scale, which we denote  $NFC_{Chaos}$  (we use the subscript to distinguish the abbreviation of the scale from existing abbreviations such as NFC for Need for Cognition). The scale was highly reliable in all samples ( $\alpha$ 's > .90). In the analyses, we scaled  $NFC_{Chaos}$  to range from 0 to 1, where higher values indicate a greater  $NFC_{Chaos}$ . Consistent with the distributions of other malevolent traits in non-clinical samples (e.g., Levenson et al., 1995), we find that distributions on the  $NFC_{Chaos}$ -scale are strongly right-skewed ( $M_{Sample\ III} = .17$ ,  $SD_{Sample\ III} = .21$ ;  $M_{Sample\ IV} = .19$ ,  $SD_{Sample\ IV} = .21$ ;  $M_{Sample\ V} = .16$ ,  $SD_{Sample\ V} = .22$ ;  $M_{Sample\ VI} = .22$ ,  $SD_{Sample\ VI} = .25$ ). As an initial validation that the  $NFC_{Chaos}$ -scale captures real-world behavior, we included an incentivized behavioral economic game in Sample 6. Following Laustsen & Petersen (2017), we used the hawk-dove game, a well-established game to elicit behavioral conflict-orientations. Testifying to the content validity of the scale, we find that



higher values on  $NFC_{Chaos}$  significantly predicts the choice of the conflict-oriented “hawkish” strategy (see SI Appendix C2).

## *Results*

*Does  $NFC_{Chaos}$  predict motivations to share hostile political rumors?* Yes. In Samples 3-6,  $NFC_{Chaos}$  strongly predicted motivations to share hostile political rumors, controlling for gender, age, educational level, and ideology (for Samples 3-6, respectively,  $b_{Need\ for\ Chaos}=.54, .55, .40$  and  $.74, p's < 0.001$ ; the lower effect size in Sample 5 is most likely due to a slightly different operationalization of sharing motivations, see SI Appendix B3). This suggest that even minor increases in  $NFC_{Chaos}$  will spark motivations to share hostile political rumors. This interpretation is corroborated by additional analyses that plot the lowess curves the association across samples (see SI Appendix C1). Furthermore, as in Test 1, we compared the associations of motivations to share hostile rumors with the associations of believing in hostile rumors (see SI Appendix B3). Across all samples,  $NFC_{Chaos}$  is a significantly stronger predictor of sharing motivations ( $\chi^2=58.39, 104.66$  and  $100.56$ , respectively, for Samples 3-5;  $p's < .001$ ).

*Does  $NFC_{Chaos}$  underlie the association between violent activism and motivations to share hostile political rumors?* Yes. To assess whether  $NFC_{Chaos}$  lies at the heart of the associations observed in Test 1 and Test 2 between violent activism and sharing motivations, we utilize the decomposition method developed by Karlson & Holm (2011). Specifically, we test the how much of the association between violent activism and sharing motivations are attributable to variance in  $NFC_{Chaos}$ . We are able to do this for Samples 3-5 whereas violent activism was not assessed in Sample 6. As detailed in SI Appendix B3,  $NFC_{Chaos}$  accounts for 52%, 44% and 65% of the originally identified association between violent activism and sharing motivations in Samples 3-

5, respectively ( $b$ 's = .21, .22 and .29,  $p$ 's < .001). Thus, to a large extent, a Need for Chaos simultaneously gives rise to a violent activist mindset and a motivation to share hostile political rumors.

*Is the association of  $NFC_{Chaos}$  and motivations to share hostile political rumors robust to methodological artefacts?* Yes. Following recommendations from followed Lopez & Hillygus (2018), we relied on additional measures from Sample 5 to examine if the effects remained when we removed (i) “survey trolling”<sup>3</sup> and (ii) response set bias<sup>4</sup>. Furthermore, to guard against outliers, we also (iii) excluded the 10% of participants with the highest score on our  $NFC_{Chaos}$  scale.<sup>5</sup> The results were only marginally affected by these checks and the coefficient estimates changed only slightly when we moved from model (i) to (iii) ( $b$ 's = 0.381, .367, .349, respectively;  $p$ 's < 0.001). This suggests that our results were not simply due to methodological artefacts, survey trolling, or extreme responses (see SI Appendix B3, Figure B3a).

*Is the association of  $NFC_{Chaos}$  and motivations to share hostile political rumors robust to control for potential confounds?* Yes. To this end, we relied on additional measures from

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<sup>3</sup> Following the recommendations by Lopez & Hillygus (2018), we only retain participants ( $n=944$ ) that responded “never” to the question: “We sometimes find people don’t always take surveys seriously, instead providing humorous, or insincere responses to questions. How often do you do this?” We excluded all others, i.e., those responding “rarely” ( $n = 71$ ), “some of the time” ( $n=63$ ), “most of the time” ( $n=17$ ), “always” ( $n=10$ ).

<sup>4</sup> Following the recommendations by Lopez & Hillygus (2018), we excluded participants ( $n=39$ ) who gave *the exact same* favorability rating on a five-point scale to Bernie Sanders, Ted Cruz, Hilary Clinton, and Donald Trump, i.e., those who “straight-lined”.

<sup>5</sup> In SI Appendix B3, Figure B3a (and associated text) we also test for acquiescence bias by taking advantage of a question wording manipulation in which half of the participants followed our usual procedure and were asked after reading our political rumors if they agreed or disagreed with the statement “I might share the story on a social media platform, while the other half followed a novel format where we asked if they agreed with the statement “I would never share the story on a social media platform”. The effects of Need for Chaos on motivations to share hostile political rumors were statistically indistinguishable across the two conditions, suggesting that the effects were not due to participants always choosing to “agree” with our survey statements.

Sample 6 to test if we could explain away the effects of Need for Chaos by including a series of potentially confounding variables: (i) Measures of populism (Spruyt et al., 2016) and political cynicism (Sweetser & Kaid, 2008), (ii) existing measures of alternative psychological needs (specifically, Need for Cognition [Bizer et al., 2000], Need to Evaluate [Bizer et al., 2000], Need for Affect [Appel et al., 2012], and Need for Closure [Federico et al., 2007]), (iii) Dark Triad personality scales (i.e., Machiavellianism, Narcissism, and Psychopathy [Jones & Paulhus, 2014]), and (iv) motivations to share sensationalist but positive rumors.<sup>6</sup> Unsurprisingly, the association weakened as we progressively added more (and highly intercorrelated) predispositions to the model. Nevertheless,  $NFC_{Chaos}$  remained a positive and significant predictor of motivations to share hostile political rumors ( $b$ 's = .738, .733, 0.704, .528 and .294 for models with sociodemographic controls and further control for measures (i), (ii), (iii) and (iv), respectively;  $p$ 's < 0.001). Hence, a need for chaos is specifically associated with motivations to share hostile political rumors over other kinds of rumors and this association exists over and beyond a very large range of predispositions including traditional measures of democratic dissatisfaction and malevolent psychological traits. In sum, motivations to share hostile political rumors in advanced democracies are be directly and uniquely tied to a need for chaos.

#### **Test 4: Who Needs Chaos? Examining the Predictors of “Need for Chaos”**

Who are the individuals that have a taste for chaos? Our choice of the term “chaos” to denote this set of motivations reflects its original usage in Greek mythology. Here, “chaos” refers to the

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<sup>6</sup> In Sample 6, we asked participants if they were willing to share on social media three positive rumors: “The World Health Organization Unveils Cure to End Cholera, one of Humanity’s Greatest-Ever Killers”, “Global Poverty Rate is Now at Lowest Level since the End of the Financial Crisis”, and “Major Diseases, from Colon Cancer to Heart Disease, are now Starting to Wane in Western Countries”. In model (iv), we control for their responses to these stories.

original state of things from which order (“cosmos”) is produced. A need for chaos is thus conceptualized as a longing for a clean slate or a new beginning. In identifying the predictors of Need for Chaos, we thus need to consider who stands to gain from defending the status quo and who stands to gain from completely wiping out the existing social structures. From this perspective, those who stand to gain from chaos are clearly those without stakes in the present status hierarchy: those who seek but lack status. We therefore predict that chaos-incitement is a strategy of last resort by marginalized status-seekers. This prediction is consistent with converging evidence from a range of literatures. For example, status-seeking motivations are key predictors of interpersonal violence (Wilson & Daly, 1985); uncertainty about the standing of the self predicts identification with radicalized groups (Hogg et al., 2010); and desires for recognition is a cross-cultural predictor of “running amok” (Hempel et al., 2000).<sup>7</sup>

### *Materials and Methods*

To examine Need for Chaos as a status-seeking strategy of last resort, we rely on data from Sample 6. In addition to Need for Chaos (coded exactly as in Test 3), we included measures to assess status-seeking motivations as well as indicators of present status and actual social success. As Test 4 does not include analyses of hostile political rumors, our unit of analysis is participants and, hence, we utilize OLS regressions without cluster robust standard errors.

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<sup>7</sup> Our main focus in Test 4 is to test the extent to which Need for Chaos reflects a strategy of last resort among frustrated status-seekers. In addition, however, we want to raise the possibility that chaos is a particular attractive strategy for those with abilities optimized for navigating in extremely conflictual situations, e.g., those who are mischievous (Hogan & Hogan, 2001) or are physically formidable (Sell et al., 2009). Thus, inciting “chaos” can be a way of getting a competitive advantage against less conflict-oriented individuals in the fight for status; basically, a niche construction process whereby the environment is molded to fit one’s skill set. Test 4 also provide initial tests of this auxiliary prediction.

*Measures of status-seeking motivations.* To gauge participants' status-seeking motivations, we relied on three self-report scales (scaled to range 0 to 1). These scales were well-established self-report measures: *Social Dominance Orientation* (Ho et al., 2015) ( $\alpha = .90$ ,  $M = .29$ ,  $SD = .23$ ), *Status-Driven Risk-Taking* (Ashton et al., 2010) ( $\alpha = .91$ ,  $M = .30$ ,  $SD = .21$ ), and the *Competitive Jungle Worldview* (Duckitt, 2001) ( $\alpha = .86$ ,  $M = .34$ ,  $SD = .18$ ). Each of these measures gauge motivations to be superior and acquire status for the self (particular, Status-Driven Risk-Taking) and one's group (in particular, Social Dominance Orientation). In addition, the Competitive Jungle Worldview measures a recognition that it is necessary to be ruthless in acquiring such status.

*Measures of present social status.* To gauge the realized social status of our participants, we again relied on three established measures: The *Loneliness* scale (Hays & DiMatteo, 1987) ( $\alpha = .90$ ,  $M = .34$ ,  $SD = .26$ ), self-reported placement on a societal ladder (Adler et al, 2000) (0 = "Bottom of Ladder", 1 = "Top of ladder",  $M = .54$ ,  $SD = .21$ ), and Self-Perceived Mating Success (Landolt et al., 1995) ( $\alpha = .88$ ,  $M = .53$ ,  $SD = .20$ ).

## *Results*

*Do status-seeking motivations predict NFC<sub>Chaos</sub>?* Yes. Preliminary tests showed that  $NFC_{Chaos}$  was associated with being a young, less educated and male (SI Appendix B4, Table B4a). To test the explicit role of status-seeking motivations over and beyond these sociodemographic predictors, we regressed  $NFC_{Chaos}$  on our three measures of status-seeking, entered in separate models to avoid problems of collinearity. All measures of status-seeking motivations positively, significantly and strongly predicted  $NFC_{Chaos}$  ( $b_{Social\ Dominance\ Orientation} = 0.413$ ,  $p < 0.001$ ,  $b_{Status-Driven\ Risk-Taking} = 0.616$ ,  $p < 0.001$ ,  $b_{Competitive\ Jungle\ Worldview} = 0.641$ ,  $p < 0.001$ ) (SI Appendix B4, Table B4a).

*Does lack of actual social status predict NFC<sub>Chaos</sub>?* Yes. We regressed on NFC<sub>Chaos</sub> on our measures of realized social success in three separate models (SI Appendix B4, Table B4a) and found that loneliness and placement on a social ladder predicted NFC<sub>Chaos</sub> as predicted. Thus, NFC<sub>Chaos</sub> was associated with higher levels of loneliness ( $b = .452, p < 0.001$ ), and lower perceived placement on the social ladder ( $b = -.365, p < 0.001$ ). Interestingly, we found that higher levels of self-perceived mating success were positively associated with NFC<sub>Chaos</sub> ( $b = .131, p < 0.001$ ). Thus, while people who seek chaos are in general socially marginalized, they are not entirely unsuccessful in the specific social domain of mating. Most likely, this reflects the association between malevolent, exploitive traits and short-term mating success (Jonason et al., 2009).<sup>8</sup>

## **Discussion and Conclusion**

In this manuscript, we have provided the first in-depth psychological assessment of motivations to share hostile political rumors. Against previous suggestions (Allcott & Gentskow, 2017; Spohr, 2017), we do not find that motivations to share hostile political rumors operate by a partisan logic such that supporters of one established party seek to aid their party against their established opponents. That is, the sharing of hostile political rumors is not motivated by a desire to aid actors

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<sup>8</sup> We also explored whether a Need for Chaos is more likely to be experienced by those who are cognitively and physically prepared for conflict situations. Initial evidence from this comes from the high association between NFC<sub>Chaos</sub> and Competitive Jungle Views. Furthermore, additional analyses reveals that loneliness and social ladder placement interacts strongly with the Dark Triad trait, Psychopathy, in predicting NFC<sub>Chaos</sub> (SI Appendix B4, Table B4c, Model 1). Thus, loneliness and a lower social placement only promotes a Need for Chaos for those with the cognitive skill set for navigating anti-social situations (specifically, lack of empathy). Conversely, this suggests that malevolent psychological traits such as Psychopathy are not enough to generate a Need for Chaos: Social marginalization is a key condition. Finally, analyses also reveal that physical preparedness for conflict is associated with NFC<sub>Chaos</sub>. Thus, following Sell et al. (2009), we obtained a self-reported physical strength. This measure predicted NFC<sub>Chaos</sub> among males but not females (SI Appendix B4, Table B4c, Model 2).

within the system. Instead, it is motivated by a desire to tear down the system as such. In Test 1, we found that those who are motivated to share hostile political rumors are political activists that operate outside of the democratic system (i.e. violent activists) and not within it (i.e., legal activists). Furthermore, we found that these political activists are promiscuous sharers and are motivated to share rumors that target any elite actors, independently of this actor's political identity. In Test 2, we found that those who are motivated to share a hostile political rumor do so with the aim of mobilizing the audience against a disliked group and, to fulfill this aim, are perfectly willing to disregard the truth. In Test 3, we identified the core of the psychological syndrome that motivates the sharing of hostile rumors as a "Need for Chaos", which involves the explicit desire to "burn society to the ground". Finally, in Test 4, we identified the fuel of the need for chaos: thwarted desires for high status. Those high in Need for Chaos are status-obsessed, yet socially marginalized. In the course of these four tests, we provided evidence from samples of both Americans, Danes and non-Western immigrants. Independently of the specific population, similar patterns emerged, suggesting the involvement of deep-seated psychological mechanisms, which have been activated in both polarized and less polarized democracies.

In establishing the psychological reality of chaotic motivations and their key role in the sharing of hostile political rumors, our main focus was to challenge the assumption that the sharing of hostile political rumors reflects motivations to aid one mainstream actor in the polarized competitions against other mainstream actors. The present evidence, however, also casts doubt on two other widely held assumptions of the sharing of hostile political rumors. First, against the assumptions underlying fact-checking as a solution to the sharing of fake news (see Lazer et al., 2018), our findings suggest that sharing does not occur because people are unsure of what is true and what is false. Instead, sharers are so discontent that they do not care about truth and simply

utilize any hostile piece of information. Second, against the assumption that hostile online behavior simply reflects motivations to “have fun” (e.g., Buckels et al., 2014), we demonstrated that sharing of hostile rumor is (also) an explicitly instrumental act: the goal is to mobilize the audience in pursuit of chaos.

- Figure 3 about here -

Every society has contained discontent radicals. In the age of social media, however, these radicalized individuals can more easily find like-minded others and can more easily share their views. Furthermore, societies of today are facing specific sociopolitical developments that might spur a desire for chaos to a greater extent than in several decades (Turchin, 2016). Thus, rising inequality and rising dissatisfaction with democracy and quality of life taps into the exact processes that Test 4 identified has the key catalysts for a Need for Chaos, simultaneously activating and frustrating status-striving. In Figure 3, we display the American national distribution of the three  $NFC_{Chaos}$  indicators that are most political in nature. The statements are strong, expressing a support for social and political institutions to “burn”, “be burned to the ground” and “tear[ed] down”. The displayed distributions are negative cumulative distributions, i.e., how much of the distribution is more or equally in agreement with the statement than the given response. This type of distribution allows us to quickly determine how large a percentage of the American public does not reject (i.e., disagree or disagree strongly) the three statements. The percentages are staggering: 24 %, 40 % and 40 %, respectively. The extreme discontent expressed in the “Need for Chaos” scale is a minority view but it is a minority view with incredible amounts of support. Thus, if we want to know why hostile political rumors has gained prominence in public debate, the answer lies



in Figure 3: A substantial minority of individuals are so discontent that they are willing to mobilize against the current political order to see if what emerges from the resulting chaos has something better in stock for them.

Two caveats are due. First, the present study is observational. While the ethics of inducing either chaotic motivations or motivations to share hostile political rumors are questionable, this does imply that firm conclusions about the direction of causality cannot be established. At the same time, numerous steps have been taken to increase the internal validity of the presented conclusions including but not limited to controlling for multiple potential confounds related to both political dispositions, psychological needs and malevolent personality traits as well as removing survey trolls, response set and extreme responses. In addition, we have found that the associations of chaotic motivations are specific for sharing rather than believing and, hence, beliefs in hostile rumors cannot completely confound the association between chaotic motivations and sharing motivations.

Second, the present study is a study on self-reported psychological motivations. This is methodologically and substantially important. It is methodologically important because it implies that we do not know whether the motivations and intentions we have observed translate into actual behavior. This is a limitation of the study. For example, on the basis of these surveys, we cannot – and we do not – claim that substantial numbers of Danish or American citizens are ready to go into actual fights with the police or commit other forms of political violence. But what is a methodological limitation might be seen as a substantive strength. Hence, this study provides insights into the kinds of thoughts and behaviors that people are motivated to entertain when they sit alone (and lonely) in front of the computer, answering surveys or surfing social media platforms. In an age of fake news and hostile political rumors, system-defeating behavior does not

take much more than that. A few chaotic thoughts that leads to a few clicks to retweet or share is enough. When the echoes of similar processes across multiple individuals reinforce each other, it can add up to cascades of hostile political rumors. With the present manuscript, we have provided the first individual-level evidence for the psychological motivations that initiate these cascades.

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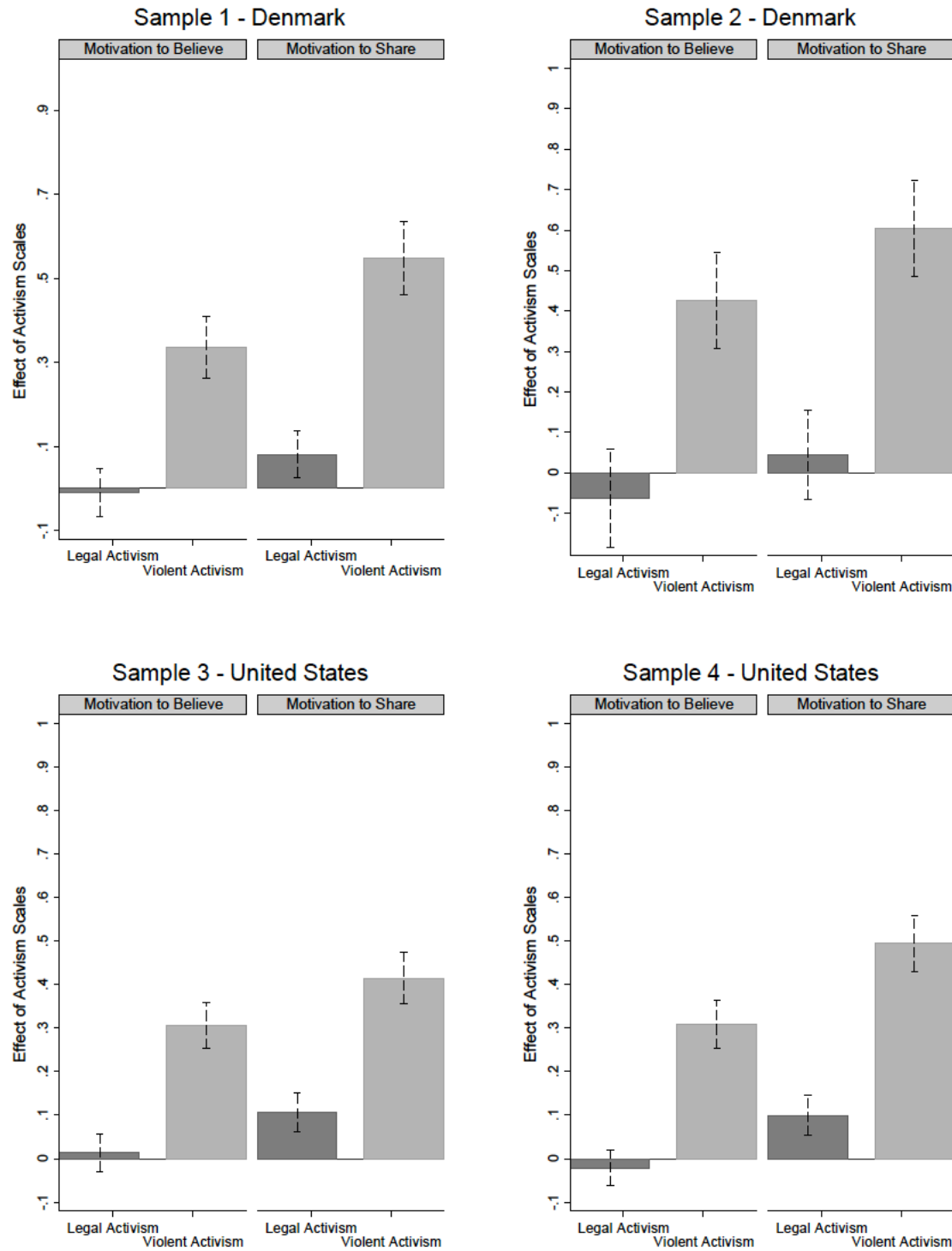
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**Table 1. Overview of Samples.**

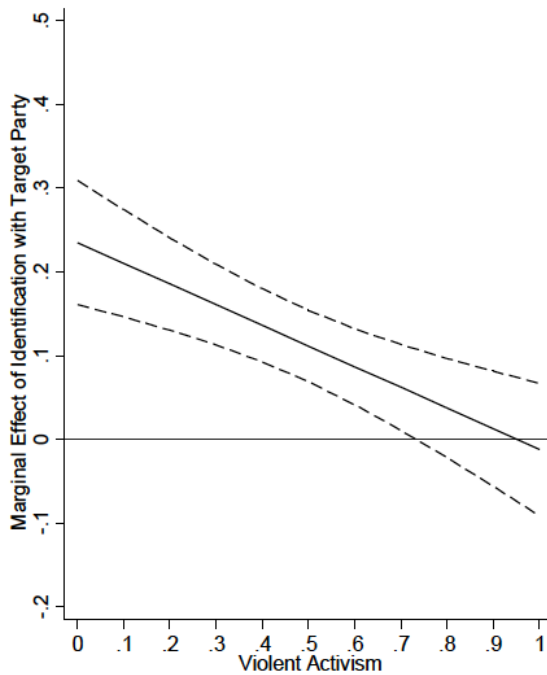
<b>No.</b>	<b>Country</b>	<b>Sampling Protocol</b>	<b>Sample size</b>	<b>Political Rumors</b>
1	Denmark	Nationally representative sample (approx.): Quota-sampled by YouGov to match population on gender, age, education, and region	1,006	3 rumors that target Liberals; 3 rumors that target Conservatives
2	Denmark	Socially diverse non-representative sample of non-Western immigrants recruited by YouGov	330	3 rumors that target ethnic Danes; 3 rumors that target non-Western immigrants
3	United States	Socially diverse non-representative sample of Americans recruited through Amazon's Mechanical Turk (MTurk)	1,004	6 rumors that target Liberals; 6 rumors that target Conservatives
4	United States	Nationally representative sample (approx.): Quota-sampled by YouGov to match population on gender, age, education, and region	1,529	3 rumors that target Liberals; 3 rumors that target Conservatives
5	United States	Socially diverse non-representative sample of Americans recruited through Amazon's Mechanical Turk (MTurk)	1,105	5 rumors that target Liberals; 5 rumors that target Conservatives
6	United States	Socially diverse non-representative sample of Americans recruited through Amazon's Mechanical Turk (MTurk)	1,519	3 rumors that target Liberals; 3 rumors that target Conservatives



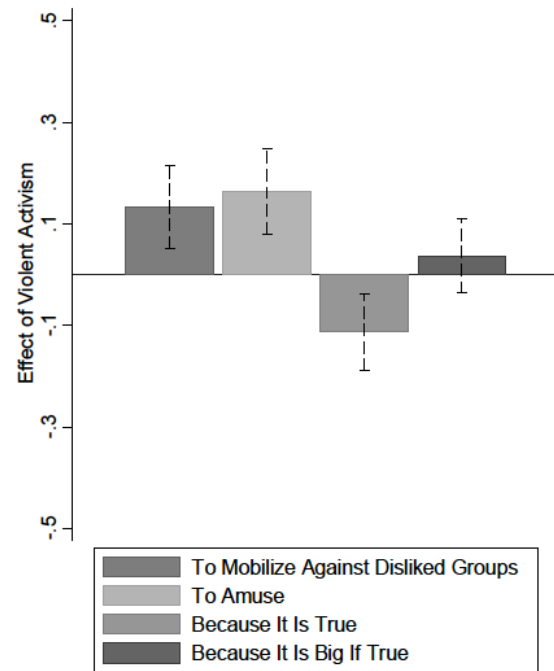
**Figure 1. Effects of Legal and Violent Activism on Motivations to Believe and Share Hostile Political Rumors.** Entries are unstandardized OLS regressions coefficients with 95% confidence intervals. All variables range 0-1. Effects are controlled for gender, age, education, political ideology, and race (only in Samples 3-4).



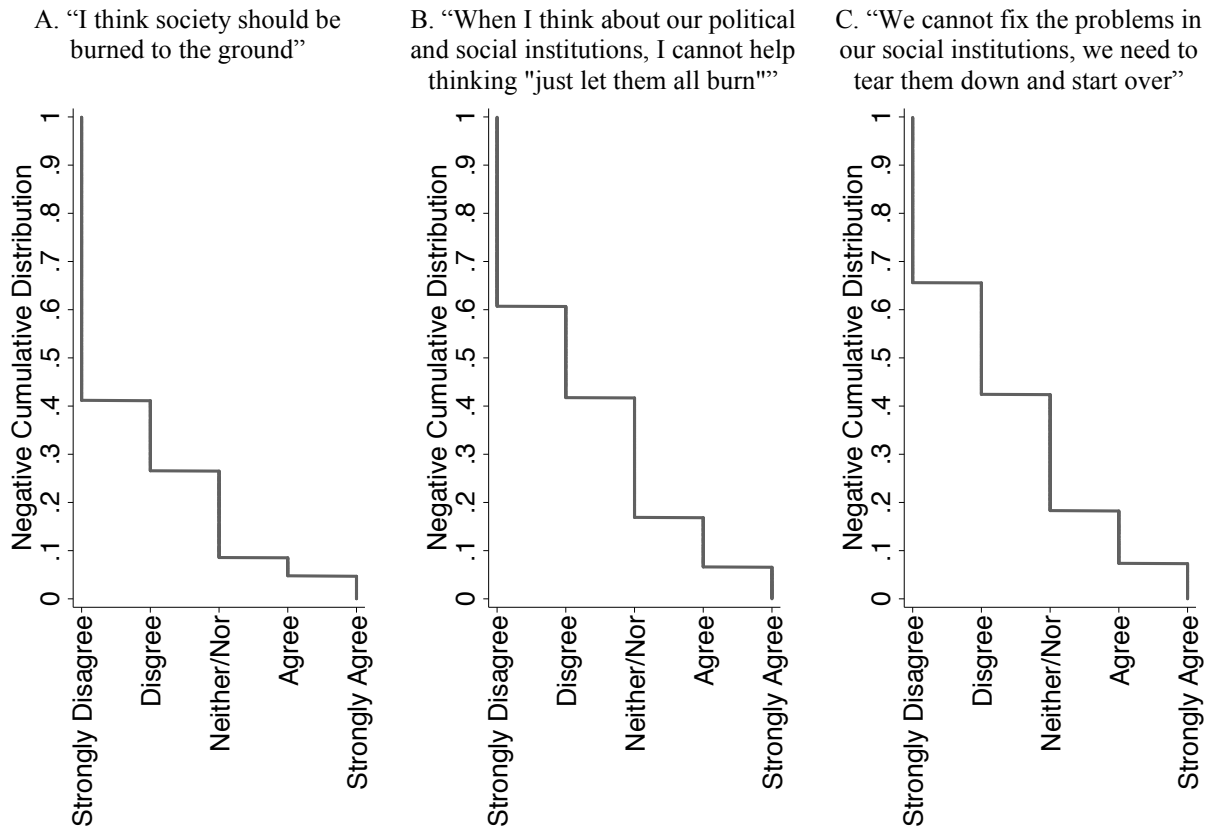
A.



B.



**Figure 2. Panel A Shows Marginal Effect of Identification with Target of Hostile Rumor on Defense Motivations, Conditional on Violent Activism. Panel B Shows Effect of Violent Activism on Different Types of Motivations to Share Hostile Political Rumors.** Entries in Panel B are unstandardized OLS regressions coefficients with 95% confidence intervals. All variables range 0-1. Effects are controlled for legal activism, identification with target of rumor, gender, age, education, political ideology, and race.



**Figure 3. National American Distributions on Three Indicators of "Need For Chaos".** Distributions negative cumulative distributions from Sample 4, an approximately nationally representative survey of Americans, fielded by YouGov. Data are weighted to achieve national representativeness on gender, age, education and geography.