Exposure to Violent Extremist Material Online

Cyber-Routines, Political Attitudes, and Exposure to Violence-Advocating Online Extremism

James Hawdon, Virginia Tech University
Colin Bernatzky, University of California
Matthew Costello, Clemson University

The Internet’s relatively unfettered transmission of information risks exposing individuals to extremist content. Using online survey data (N = 768) of American youth and young adults, we examine factors that bring individuals into contact with online material advocating violence. Combining aspects of social structure-social learning theory with insights from routine activity theory, we find that exposure to violence-advocating materials is positively correlated with online behaviors, including the use of social media platforms and the virtual spaces individuals frequent. Target antagonism is also correlated with exposure to violence-advocating materials, but guardianship and online and offline associations are not. Finally, feelings of dissatisfaction with major social institutions and economic disengagement are associated with exposure to violent materials online.

Introduction

While the Internet facilitates the open transmission of ideas, this unfiltered exchange can expose individuals to extremist content. Since virtual extremism has been recognized as a national security threat (Hussain and Saltman 2014; The White House 2015), scholars have focused on developing strategic interventions to counter it (Helmus, York, and Chalk 2013; Neumann 2013). Less attention has been devoted to studying who is exposed to online extremism (but see Costello et al. 2016; Hawdon, Oksanen, and Räsänen 2017; Keipi et al., 2017), but it is crucial to understand not only the “supply side” of extremist content (e.g., its creation and dissemination) but also the “demand side” (e.g., the potential audience) to effectively mitigate its influence. Furthermore, since youth are particularly susceptible to extremism (Assimakopoulos, Baider, and Millar...
To that end, we utilize a sample of youth and young adults to examine how various behavioral and attitudinal factors influence exposure. We focus on hate material that explicitly advocates violence against a group. We use insights from Cohen and Felson’s (1979) routine activity theory (RAT) to explain how online behaviors can place one in virtual spaces that increase exposure, and we extend this perspective with insights from Akers’ (2009) social structure-social learning (SSSL) theory to demonstrate how frustration with political or economic structures can lead individuals to engage with online networks that accelerate social learning processes that can expose them to violence-advocating materials. With this in mind, we consider the following research questions:

Research Question #1: Do particular online behaviors increase the likelihood of exposure to online hate material that advocates violence?
Research Question #2: Do various online or offline associations increase the likelihood of exposure to online hate material that advocates violence?
Research Question #3: Do attitudes of political, social, or economic discontent increase the likelihood of exposure to online hate material that advocates violence?

We first discuss the contours and consequences of online extremism. Next, we examine how exposure to virtual hate might be explained through RAT in conjunction with SSSL. We then draw on these frameworks to illuminate our findings. Finally, we conclude with a discussion of the limitations and implications of our work.

**Literature Review**

**Recognizing Online Extremism and its Effects**

Online extremism—also known as virtual extremism, online hate or cyberhate—is a form of cyberviolence characterized by the use of digital platforms to express hatred towards a collective on the basis of race, ethnicity, gender, gender identity, sexual orientation, national origin, religion, or some other group characteristic (Blazak 2009; Hawdon, Oksanen, and Räsänen 2017). This collective focus distinguishes cyberhate from individualized forms of cyberviolence, such as cyberbullying (Costello et al. 2016). Broadly understood, online hate can take many forms, such as stereotyping, attributing personal or societal problems to a group, advocating discrimination against a group, or advocating violence toward a group. We focus on the most extreme form of online hate that explicitly advocates violence.

Online hate is disseminated through a variety of mediums, including websites, blogs, social media, chatrooms, listservs, and other Internet communities (Franklin 2010; Hussain and Saltman 2014). The rise of social networking platforms such as Facebook and Twitter facilitate the transmission of extremist...
materials, and as the use of these and similar platforms grew, so did the spread of online extremism from both organized groups and individuals (Potok 2015). Additionally, while online hate materials were previously found on static webpages, digital spaces have evolved into more interactive forums wherein views are actively contested and reshaped through communal debate (Snow, Tan, and Owens 2013).

The effects of exposure to online extremism remain a subject of ongoing investigation (Keipi et al. 2017), but these effects are likely moderated in part by factors such as whether the exposure is deliberate and the extent to which the exposed individual holds views consistent with the materials in question. Thus, exposure to such materials is not necessarily victimizing; indeed, some actively seek these materials, and many who view them do not experience negative consequences (Gerstenfeld Grant, and Chiang 2003; Keipi et al. 2017). Nevertheless, exposure to hate materials correlates with a range of negative behavioral and attitudinal outcomes, such as decreased social trust (Näsi et al. 2015), intergenerational transmission of extremist ideology (Tynes 2006), reinforced discrimination against targeted groups (Cowan and Mettrick 2002; Foxman and Wolf 2013), and fear and anger among members of targeted groups (Tynes 2006; Tynes, Reynolds, and Greenfield 2004). Exposure to extremist materials has also been linked to acts of violence (Federal Bureau of Investigation 2011; Freilich, Belli, and Chermak 2011; The New America Foundation International Security Program 2015). With recent spikes in hate crimes in the United States and Europe (Gündüz 2010; Southern Poverty Law Center 2017a), understanding who is exposed to extremist materials is of paramount importance.

**Correlates of Exposure to Online Extremism**

Extant literature (e.g., Costello et al. 2016) on exposure to online materials primarily draws on Cohen and Felson’s (1979) RAT, which contends that the likelihood of crime increases when a motivated offender, suitable target, and lack of capable guardians converge in space and time. With refined theoretical approaches that recognize the asynchronous nature of offender-victim convergence in online spaces (Choi and Lee 2017; Reyns, Henson, and Fisher 2016), RAT has been adapted to account for myriad types of cybervictimization, including identity theft, harassment, fraud, and the targeting of hate (e.g., Bossler and Holt 2009; Hawdon, Oksanen, and Räätänen 2015; Pratt, Holtfreter, and Reisig 2010; Reyns 2013; Reyns and Henson 2015; Reyns, Henson, and Fisher 2011).

RAT has also been successfully used to explain exposure to online hate material (e.g., Costello et al. 2016). For example, being virtually proximate to cyberplaces where extremist content is prevalent increases the likelihood of exposure, and certain online behaviors elevate an individual’s chance of entering those “dangerous” virtual spaces. For example, the more time online, the greater the odds of encountering hate materials, ceteris paribus (e.g., Costello et al. 2016; Keipi et al. 2017).
Relatedly, higher usage of social networking sites (SNS) and other Internet services increase the probability of encountering online extremism. For example, Hawdon, Oksanen, and Räsänen (2014) find that, compared to passive users, active users (who use six or more services) are almost twice as likely to encounter extremist content. In addition to the number of services used, individuals with larger social networks (i.e., more Facebook friends) are more likely to be exposed to online hate materials, as a greater network size increases the odds of someone in that network expressing extremist views (Hawdon, Oksanen, and Räsänen 2014). It is important to recognize that some materials (such as YouTube clips) may not be hateful in-and-of themselves, but have features that can expose individuals to extremist attitudes such as comment sections with minimal censorship.

A second component of RAT, target suitability, can also increase one’s chances of being exposed to hate materials. For example, individuals who are more inclined to share their views or engage in behaviors that raise their online visibility will likely have a greater chance of being a target of hate. Target antagonism, or victim characteristics or behaviors that generate feelings of hatred or jealousy (Finkelhor and Asdigian 1996), can also increase exposure. For instance, engaging in sexting increases the likelihood of cybervictimization (Reyns et al. 2013), as does producing online hate material (Hawdon et al. 2014). These findings highlight the established relationship between victimizing and being victimized (Holt and Bossler 2013; Marcum et al. 2014; Reyns, Henson, and Fisher 2011). Additional behaviors that can antagonize others online include joining others in online deviance (Costello et al. 2016), expressing opinions on sensitive or controversial topics, or partaking in high-risk activities online. In addition to target antagonism, target visibility and accessibility increase the likelihood of victimization (Cohen and Felson 1979). Behaviors such as adding strangers to one’s social media networks or confiding in others anonymously online have been linked to cybervictimization (Costello et al. 2016; Reyns, Henson, and Fisher 2016).

The third aspect of RAT focuses on guardianship, or the “presence of a human element which acts—whether intentionally or not—to deter the wouldbe offender from committing a crime against an available target” (Hollis, Felson, and Welsh 2013, 76). Broad support for the ability of guardianship to reduce victimization in the offline world has been found (see Pratt and Cullen 2005), but the findings regarding guardianship in the online sphere are less robust (e.g., Bossler and Holt 2009; Leukfeldt and Yar 2016; Reyns 2015). The inconsistent findings are partly a function of the difficulty of conceptualizing and operationalizing online guardianship. For example, some researchers define guardianship as embeddedness in a social network (Reyns, Henson, and Fisher 2016), while others focus on offline guardianship, such as living arrangements (Räsänen et al. 2016; Reyns, Henson, and Fisher 2016).

Guardianship may also fail to inhibit online hate because the oft-anonymous and ever-growing virtual environment is difficult to police. The state is limited in the extent of control it can exert over online behaviors, especially in the U.S. where primacy is afforded to the First Amendment (see Hawdon, Oksanen, and
Räsänen 2017). Self-monitoring of sites by general guardians also proves difficult. While SNS have latitude in deciding whether and how to address hate material on their sites (Citron and Norton 2011), they must decide what constitutes hate and how to effectively monitor and remove it if found. Informal social control, such as expressing disapproval of those being hateful, can also be exerted to limit online hate material (Costello, Hawdon, and Cross 2017; Felson and Boba 2010). Yet, this behavior might produce the opposite of the desired effect by raising one’s visibility and target antagonism (Costello et al. 2016). Informal social control can also take the form of collective efficacy, whereby others intervene for the greater good. But, though collective efficacy has been shown to reduce crime in the offline world (Sampson, Raudenbush, and Earls 1997), the lack of trust online and anonymity of the Internet may render collective efficacy less effective online.

In sum, RAT purports that the risk of online exposure to extremism is heightened by increasing virtual proximity to dangerous spaces, antagonizing perpetrators, and lacking capable guardianship. While there is a growing body of evidence supporting this perspective, it is important to also consider other factors such as one’s attitudes, worldviews, and social location that likely render individuals more or less inclined to search for information expressing extremist viewpoints. Having used RAT as a launching point, we now consider this broader social context.

Integrating Routine Activity Theory with Social Learning Processes

While RAT is well equipped to explain patterns of victimization by accounting for the environmental context in which crime occurs, its usefulness in capturing the dynamics of virtual extremism is limited. First, as discussed above, RAT makes no distinction between wanted and unwanted contact with hateful materials. Second, while the original theory considered how one’s structural location and social trends patterned victimization, current applications largely ignore broader cultural conditions or events that can shape exposure. Yet, we know such factors influence victimization. For example, the likelihood of encountering online hate increased following the November 2015 terrorist attacks in Paris (Kaakinen, Oksanen, and Räsänen 2018).

To account for such considerations, we extend RAT to incorporate insights from Akers’ (2009) (SSSL) theory. SSSL builds on Akers’ well-known Social Learning Theory (for a meta-analysis of SLT, see Pratt, Holtfreter, and Reisig 2010). SLT argues that law-violating behavior is the product of differential association (i.e., associating with others who commit criminal behavior), definitions favorable to violating the law, differential reinforcement (i.e., past or anticipated future rewards for violated the law), and imitation (Akers 2009, 50). Just as RAT recognizes that one’s position in the social structure shapes their routines and therefore the probability they will be victimized, SSSL extends Aker’s original theory by arguing that “variations in the social structure, culture, and locations of individuals and groups in the social system” (Akers 2009, xxviii) influence the social learning processes that lead to criminal behavior. We
combine this theory with RAT by arguing that these structural factors, as well as social learning processes, influence victimization by shaping one’s proximity to offenders, target suitability, and guardianship.

First, *differential social organization* focuses on the structural correlates of crime in the broader society (Akers 2009). For example, population density or other community characteristics can make some communities more likely to have higher crime rates by shaping the likelihood of associating with deviant peers and adopting definitions favorable to criminal behavior. These structural characteristics that facilitate the social learning processes that lead to criminal behavior would also place others in the community at greater risk of victimization by bringing them into closer proximity to motivated offenders and reducing the likely presence of capable guardians. Next, Akers (2009) also theorizes the influence of *differential location in the social structure*, which recognizes how the stratification of individuals within communities shape social learning processes. That is, sociodemographic characteristics such as class, gender, marital status, race, and ethnicity locate people in different structural locations, and the location one occupies within the social structure shapes social learning processes. Similarly, *differential social location*, which refers to one’s membership in social groups such as gangs or other peer groups, also influence social learning processes. Both one’s location in the social structure and their membership in groups would influence criminal behavior by determining the opportunity to interact with others, adopt definitions, and be rewarded for various behaviors (Akers 2009). These factors also pattern one’s exposure to motivated offenders, their visibility as a target, and the likelihood of being under capable guardianship. Thus, the structural conditions identified by Akers (2009) would have both a direct effect on routine activities as outlined by Cohen and Felson (1979), but would also indirectly influence routine activities by shaping the social learning processes described in SSSL.

While we consider these insights important, we are most interested in detailing how an example of Akers’ (2009) *theoretically defined variables* influence exposure to violence-advocating materials. Akers acknowledges that other variables, such as anomie or patriarchy, may be important forces that indirectly affect crime by influencing social learning processes. This aspect of SSSL is purposefully broad because Akers (2009) argued that other previously unspecified social structural factors can be theoretically relevant, and these factors may be important for the future development of social learning theory.

Considering this component of SSSL in the context of extremism, we identify a specific worldview that will likely relate to exposure. We maintain that a relative prevalence of extremist worldviews can influence learning processes and make extremist beliefs appear legitimate and worth holding. In the current online world, those espousing right-wing extremism are the most active producers of online hate materials (Potok 2015; Southern Poverty Law Center 2017b), and the growing presence of this ideology (Beirich and Buchanan 2018) significantly increases the likelihood of being exposed to it, all else being equal.

However, as explained by SSSL, all else is not equal. Instead, one’s likelihood of being exposed to such deviant-promoting definitions espoused by this
worldview is determined by one’s differential location in the social structure. As known from social psychology, people who perceive a threat to their group often embrace a worldview that preserves their sense of self-worth, often by attributing blame for their circumstances to others (Bettencourt et al. 2001; Huddy 2003). Hence, individuals who occupy economically marginalized positions are more likely to encounter extremist messaging because they may seek answers to explain their circumstances, and extremist ideas are pervasive amongst others facing similar circumstances. Similarly, since extremist ideology often reflects a negative orientation towards government or society in general (Costello et al. 2016), being socially located in groups that harbor negative feelings towards the government or other social institutions is also likely to increase exposure to online hate (Baysinger 2006).

In addition, the interrelated concepts of flocking and feathering can explain the social learning process by which extremist attitudes are introduced and potentially reified. “Flocking” refers to the increased ties between those who share similar worldviews and experiences. For example, people who feel alienated are likely to “flock” together. It is in this group context of differential association that “feathering” takes place, wherein individuals learn and adopt the attitudes of others within their group through positive reinforcement and imitation (Akers 2009). Thus, when the expression of political dissatisfaction is collectively approved and reinforced, such attitudes are more likely to be expressed and become deeply entrenched among group members (see Hawdon 2012).

These dual mechanisms of flocking and feathering are especially pertinent to virtual spaces, where sites use information about users to tailor the online experience to reflect the users’ interests. This process creates a “filter bubble” (Pariser 2011) whereby users’ preferences and attitudes are mirrored back to them, a phenomenon that received considerable attention in the wake of SNS circulating “fake news” during the 2016 U.S. presidential election. As individuals encounter online content that aligns with their feelings of political and economic marginalization, SNS algorithms record these sentiments and increase the likelihood of seeing additional content expressing similar attitudes. This process narrows and polarizes the observed messages, which increases the risk of exposure to extremist ideologies (Hawdon 2012; also see Keipi et al. 2017).

Of course, the consequences of flocking, feathering, and filtering are probabilistic, not inevitable. Not everyone who experiences dissatisfaction will be exposed to extremism, nor will extremist frames resonate among all exposed individuals. Our argument is that individuals with particular characteristics (e.g., economic marginalization and institutional mistrust) are more likely to be filter-towards virtual spaces where extremism is prevalent. Once there, the social learning processes can occur and potentially be amplified by the existence of online filter bubbles.

Flocking and feathering not only increase the likelihood that some exposed individuals will engage in deviant activities (i.e., adopt extremist beliefs and become radicalized), they also increase the likelihood that exposed individuals will be further “victimized” by being exposed to additional hate materials in the future. First, by flocking to those who hold a worldview consistent with
extremist beliefs, the individual becomes more proximate to offenders who post extremist materials. Next, as feathering occurs, one is likely encouraged to express their agreement with the worldview publicly. As they do, they are likely to experience positive reinforcement as the group’s members applaud their promotion of the group’s ideology. While this will probably endear the individual to the extremist group, it also increases the individual’s target suitability by making them more visible and accessible to motivated offenders. Finally, by becoming engaged in a group that defines the extremist ideology as “normal” or admirable, the likelihood of others who would disapprove of these materials and intervene to dispute them would likely decrease. That is, those who flock to extremist groups are likely to experience less guardianship and therefore more likely to experience future “victimization.”

As explained above, exposure that occurs in this manner may not be “victimizing” in the traditional sense. Indeed, it is unlikely that those involved would define themselves as victims because they agree with the ideology and sought membership in the group that espouses it. Nevertheless, the processes would increase the likelihood they would be exposed to such materials in the future. In addition, similar processes can increase exposure to those who disagree with the ideology and who would likely define exposure to violence-advocating materials as a victimizing experience. Those whose differential locations in the social structure, cultural beliefs, and differential social locations lead to their involvement in groups that vehemently oppose right-wing extremism would also undergo flocking and feathering in their own filter bubble. They too would be differentially rewarded for espousing their anti-right-wing ideology, and when they do, they would increase their target suitability by antagonizing the offenders. While the worldviews being expressed are diametrically opposed, the result would be the same. The difference is one is a willing “victim” and the other is a more traditional “victim.”

Combining SSSL with RAT allows us to propose the theoretic model presented in figure 1. In the model, one’s differential location in the social structure (e.g., white, less educated, economically marginalized, males) and their differential social location (e.g., member of politically conservative group) influence the individual’s worldview (e.g., a negative orientation towards government consistent with the right-wing extremism that currently dominates the Internet). This worldview, we argue, is an example of what Akers (2009) meant by a theoretically defined variable. This worldview would then influence their online routines as they flock to those with similar orientations and interact with them to construct and reaffirm their shared worldview (i.e., feather). The individuals’ structural locations and cultural worldview would result in differentially associating with those who adopt the deviant attitudes of extremism, and they would likely be encouraged to express these values publicly and rewarded for doing so. These actions, in turn, would increase the individual’s proximity to motivated offenders and target suitability while simultaneously reducing guardianship. Such an individual would be at an elevated risk for exposure. Thus, exposure is a direct function of online routines that influence the person’s proximity to dangerous people or places, target suitability, and guardianship. Yet, it is also a function of
adopter a worldview that leads to social learning processes that also influence proximity, target suitability, and guardianship.

We now turn to a test of our basic argument. While we cannot directly measure the processes of flocking, feathering, and filtering, we include variables measuring the worldview that would be positively related to exposure if these processes were indeed occurring.

**Data and Methods**

**Sample**

We examine 768 Internet users drawn from a larger sample of 900 Internet users. Two of our measures—closeness to friends and family and closeness to an online community—had forty-seven and seventy missing cases, respectively, reducing our sample size. Other variables had much smaller incidences of missing data. Analyses not including these two measures did not differ substantively from those including them. As such, the missing cases do not influence the analysis, but we present the model that includes these variables due to their theoretical importance.

Participants are between the ages of 15 and 36. These ages were selected because these data are from a study designed in part to match comparative samples from earlier research conducted in several nations (e.g., Keipi et al. 2017).
The data were collected during the week of November 21, 2016 from demographically balanced panels of people who agreed to participate in research surveys. Survey Sample International (SSI) recruits potential participants through permission-based techniques such as random digit dialing and banner ads, and they provide incentives for participating in studies. The sample is stratified to reflect the U.S. population on geographic region. Demographically balanced panels protect against bias in online surveys because screening can eliminate respondents who have previously participated and increase the validity of responses (Evans and Mathur 2005; Wansink 2001).

**Measures: Dependent Variable**

Our dependent variable asks respondents to recall the most recent time they saw or heard online materials that expressed negative views about a group. While a variety of negative views were expressed toward a group, we analyze the 30.3 percent of our sample who noted that the most recent hate they witnessed online advocated violence. Racial or ethnic groups were attacked most frequently (76.2 percent), but groups were also targeted based on their sexual orientation (59.3 percent), nationality (56.4 percent), and political views (53.5 percent).

**Measures: Independent Variables**

From SSSL, we include measures that tap differential location in the social structure, differential social location, and the theoretically defined variable worldviews. As described in the literature and commonly assumed in popular discussions, those most attracted to the current brand of right-wing hate would most likely be white, relatively uneducated males who are economically marginalized (see Baysinger 2006; Berlet and Lyons 2018; Global Post 2015). To tap these locations in the social structure, we include indicators measuring minority status (white/non-white), education, gender (male/female), and age. To tap economic discontent, we categorize individuals who are in school or working full-time as economically engaged and those who are unemployed or working only part-time as not economically engaged. Most of our sample (75.2 percent) is economically engaged by this definition.

To assess our respondents’ differential social location, which refers to one’s membership to social groups, we use measures of closeness to various groups. We ask respondents how close they feel to an online community to which they belong and to their family and friends. Responses range from 1, “not at all close,” to 5, “very close.” Nearly 20 percent of respondents said they were very close to an online community. We average the scores concerning closeness to family and closeness to friends.

Additionally, we measure what we consider to be a relevant theoretical variable: an anti-government/anti-establishment worldview. We anticipate that a worldview including these orientations will be positively related to exposure. The first measure, trust of politicians, asks respondents to rate their trust in politicians on a 10-point scale ranging from 1, “you can’t be too careful,” to 10,
“can be fully trusted.” Respondents do not trust politicians much, with a mean score of 3.04. Second, we include a three-item index of overall satisfaction. Satisfaction with religious institutions and political parties were measured on a ten-point scale with higher scores indicating elevated levels of satisfaction. Satisfaction with the way things are going in the U.S. right now was measured on a seven-point scale ranging from 1, “completely dissatisfied” to 7, “completely satisfied.” Respondents expressed moderate levels of satisfaction on all three variables (mean satisfaction levels being 5.40 for religious satisfaction, 5.42 for political party satisfaction, and 3.88 for satisfaction with direction of the United States). We anticipate mistrust of politicians and dissatisfaction to be positively related to exposure as those with these attitudes are more likely to hold a worldview that aligns with the most common form of online hate currently on the web.

We argue that these factors will influence the social learning processes of feathering and flocking and, in turn, pattern the RAT variables of proximity to offenders, target suitability, and guardianship. We include several measures that can tap proximity to offenders. First, we expect avid Internet users to be exposed to more online hate. We measure SNS usage by asking respondents to indicate if they used a series of twenty-two SNS platforms. On average, people reported using 7.6 such sites. We also asked respondents how many hours per day they spend online. The variable’s responses range from 1, “less than one hour per day,” to 6, “ten or more hours per day.” The most common response (31.9 percent) was that individuals spend between three and five hours per day online.

In addition, the more hate messages one sees, the more likely he or she is frequenting virtual spaces populated by motivated offenders. Thus, the more hate messages one sees, the greater the likelihood he or she will also see materials that advocate violence. We therefore include a measure that asks respondents how frequently they see hate material online. The four-point scale ranges from 1 (never) to 4 (frequently). Most respondents reported seeing hate occasionally (38.6 percent) or infrequently (29.7 percent).

We also argued above that engaging in certain activities would influence victimization by increasing their target suitability. Thus, we include two measures that approximate target visibility. The first measure asks respondents if they ever join in when they see someone else being hateful online, as doing so would likely make them more visible to those who espouse hate. This is assessed using a four-point scale ranging from 1 (never) to 4 (frequently). A majority of respondents (58.7 percent) reported that they never engage in such behavior, while 18.1 percent said that they do so once in a while. A similar share (17.4 percent) said they do so sometimes, while 5.8 percent said that they do so frequently. The second measure concerns the expression of political views online. People who vocalize their opinions online, particularly as they pertain to controversial topics, would be more visible and might antagonize those with differing points of view. We asked individuals if they express their political opinions online, and a majority (57.7 percent) said they have. We expect individuals who more readily express their views online will be at an increased chance of seeing material that advocates violence.
An additional measure of target suitability asks respondents if they have ever been the target of online hate. A sizable literature links victimization to being victimized, both online and offline (see Jennings, Piquero, and Reingle 2012), and we expect individuals who have been targeted by hate to be at a heightened risk of seeing violence-advocating hate materials. Under a third (30.61 percent) responded that they have been personally targeted.

Our final measure of target suitability approximates self-control. A lack of self-control has been linked to online victimization (e.g., Holtfreter, Reisig, and Pratt 2008; van Wilsem 2013). We expect individuals with less self-control to be more likely to engage in risky behaviors online, including visiting spaces where extremist views are prevalent. Conversely, low risk-takers would likely try to navigate away from such virtual spaces. We use a three-indicator composite measure of self-control because the indicators are highly correlated and the index explains 66.8 percent of the total variance in the three items. The first measure asked respondents to assess on a 1-to-10 scale how true the statement “I enjoy taking risks” was for them. Higher scores indicate a higher proclivity for risk-taking. The second measure asked respondents to use the same scale to rate the accuracy of the statement “I often do things that feel good in the moment, but I regret later on.” Respondents again used the same ten-point scale to rate the statement “sometimes I can’t stop myself from doing things my friends are doing, even if I know it is wrong.”

Finally, we include a proxy measure of offline guardianship. Following others (e.g., Räsänen et al. 2016; Reynolds, Henson, and Fisher 2016), we also include a measure of whether respondents live alone. Fewer than 10 percent of our respondents (9.6 percent) said they did. People who live alone most likely have lower levels of guardianship (Reyns, Henson, and Fisher 2016); thus, we expect them to be more likely to be exposed to online materials advocating violence.

Analytic Strategy

We use a logistic regression to examine our dichotomous measure of exposure to online hate material that advocates violence. The effect of independent variables is reported as odds ratios. The model includes the seventeen predictors described above. While this is a large number of predictors, with 230 individuals being exposed to violence-advocating materials in our sample, the analysis is well within the general “ten outcome events per variable” (EPV) rule, especially given the need to control for potential confounding variables (see Harrell 2015; Vittinghoff and McCulloch 2007). In addition, we ran a model containing only significant predictors and it produced nearly identical results. Given the need to control for potential confounding factors, we present the full model.

Findings

Table 1 reports descriptive statistics for all variables in the analysis. A correlation matrix, presented in the appendix, is used to assess possible sources of multicollinearity. We find two possible cases: trust in politicians is highly correlated
with the satisfaction index (0.66), and education and age are also highly correlated (0.69). However, we entered each variable into the model separately and did not encounter problems or unstable results. Additionally, a VIF test confirms the lack of multicollinearity, producing a mean VIF score of 1.48.

Table 2 shows the results of regressing exposure to online hate materials advocating violence on the independent variables. Using more SNS increased the likelihood or exposure slightly (OR = 1.05, p < 0.05). This finding is in line with our expectation that increased Internet usage would be positively correlated with exposure to hate materials advocating violence. Hours per day online, however, is non-significant. Our results show robust support for the positive association between target suitability and exposure to violence-advocating materials. Individuals who have been the target of hate are 2.44 times as likely to be exposed to violent materials (OR = 2.40, p < 0.001). Moreover, people who openly express their political views online are significantly more likely to be exposed to violence-advocating materials (OR = 1.48, p < 0.05), as are people who join in online hate when they see it (OR = 1.27, p < 0.05). Finally, those who lack self-control are 1.33 times more likely to see hate material, relative to those who score lower on our scale (OR = 1.33, p < 0.01). We do not find support for our expectation concerning guardianship and exposure to online hate, however. While the effects are in the anticipated direction, none of the
guardianship variables are significant predictors of exposure. Thus, with respect to our first research question, we find that online behaviors increase the likelihood of exposure to hate-advocating materials; however, with respect to our second research question, our findings indicate that the online and offline associations we consider do not influence the chance of being exposed.

Our remaining variables attempt to answer our third research question by capturing the effect of an anti-government/anti-establishment worldview and the filter bubble. We find partial support for our expectation concerning feelings of discontent. As predicted, individuals who are satisfied with major institutions are less likely to be exposed to violence-advocating hate (OR = 0.68, p < 0.001), as are individuals who are more economically engaged (OR = 0.64, p < 0.05). However, contrary to expectations, trust in politicians is not significantly related to exposure. Despite this latter finding, it appears that greater satisfaction with major institutions and involvement in the dominant economic system can serve

<table>
<thead>
<tr>
<th>Table 2. Logistic Regression Analysis of Exposure to Online Hate Material Advocating Violence (Odds Ratios and Standard Errors)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
</tr>
<tr>
<td>Saw online hate advocating violence</td>
</tr>
<tr>
<td>Social network usage</td>
</tr>
<tr>
<td>Hours/day online</td>
</tr>
<tr>
<td>Frequency see hate online</td>
</tr>
<tr>
<td>Trust politicians</td>
</tr>
<tr>
<td>Satisfaction index</td>
</tr>
<tr>
<td>Economic viability</td>
</tr>
<tr>
<td>Been target of online hate</td>
</tr>
<tr>
<td>Express political views online</td>
</tr>
<tr>
<td>See hate and join in</td>
</tr>
<tr>
<td>Self-control index</td>
</tr>
<tr>
<td>Close to online community</td>
</tr>
<tr>
<td>Close to family and friends</td>
</tr>
<tr>
<td>Live alone = 1</td>
</tr>
<tr>
<td>White = 1</td>
</tr>
<tr>
<td>Male = 1</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>LR $X^2$</td>
</tr>
<tr>
<td>Log pseudolikelihood</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>

*p < 0.05; **p < 0.01; ***p < 0.001 (two-tailed tests).
as protective factors against violence-advocating online materials. Conversely, sharing a worldview critical of the dominant system increases the likelihood of being exposed.

Finally, none of the demographic characteristics for which we control influence the likelihood of exposure. Specifically, minority status, gender, age, and education are not significantly related to exposure. These findings mirror prior research concerning the relationship between demographic characteristics and exposure to hate material.

**Discussion**

Online extremism is a growing concern, especially extremism that directly advocates violence. This type of hate is particularly dangerous because it carries the potential to radicalize, or move one from rhetoric to action (Borum 2011; Hawdon 2012). A logical precursor to adopting extremist views is being exposed to it. Thus, while there is no single pathway to radicalization (Laqueur 2003), and the adoption of extremist views rarely manifests in violence, frequent exposure to violent extremism likely plays a role in the radicalization process. Yet, despite these concerns, we still know little about the processes that bring individuals into contact with online hate material advocating violence.

We modify RAT by incorporating insights from SSSL theory to consider how structural and social learning processes interact to produce variation in exposure, which is a form of victimization. We note how one’s location in the social structure can affect exposure to hate materials by considering the processes of flocking and feathering. We find that individuals expressing a high degree of dissatisfaction with major social institutions and those with limited economic prospects are exposed to online extremism more often than those holding opposing attitudes. We argue that this is due to these people converging, or flocking, in virtual spaces where violence-advocating hate resides. Feathering, or the process whereby individuals learn and adopt the attitudes of those around them, follows flocking. We argue that those who become exposed to this material and sympathize with it collectively define, learn, and refine their positions through interactions. We find evidence that is consistent with this feathering process in that those who join in attacks on others are more likely to be exposed to violence-advocating messages, as are those who express their opinions online. While these variables do not directly tap the process of feathering, these results are consistent with this process.

Thus, we demonstrate how a well-known theory of criminal behavior (SSSL) can specify the leading theory of victimization (RAT). Specifically, we theoretically link how factors that are known to lead to criminal behavior influence the proximate causes of victimization. As such, we elaborate the mechanisms involved in victimization by specifying the relationship between distal and proximate factors related to victimization. This contribution is theoretically significant because it creates theoretical space for the inclusion of culturally relevant factors—in this case an anti-government/anti-establishment worldview—into a routine activity perspective. Moreover, we identify a set of variables that
comprise this worldview, and we argue this adds specificity to Akers’ (2009) theoretically defined variables that can potentially contribute to the future development of social learning theory.

We also contribute to the theoretical development of SSSL by theorizing how the processes of flocking and feathering can be amplified by filtering, as the personalization of the Internet causes individuals to more regularly come into contact with material aligning with their views. We believe that the surfeit of right-wing extremist material online that often focuses on dissatisfaction with the government, or dismay over social or cultural shifts in society, lead many dissatisfied individuals to be exposed to violence-advocating material. Over time, they may become ensnared in hate-fueled filter bubbles, which amplify the social learning processes of differential association and differential reinforcement.

The personalization of the Internet has led to mounting concerns about online filter bubbles. As Pariser (2011) describes it, the Internet increasingly acts as a one-way mirror, reflecting back at us what we want to see, while shielding us from disagreeable content. This personalization process is partially facilitated through conscious, self-selected decisions, such as choosing to interact with like-minded people and ideas online. Personalization occurs unconsciously as well, as pre-selected decisions are made for Internet users by websites, advertisers, and other virtual actors (Ricci, Rokach, and Shapira 2011) based on the users’ past behaviors and social network ties (Keipi et al. 2017; Nikolov et al. 2015).

A personalized Internet is unquestionably efficacious, as it shrinks a nearly infinite online realm, offering Internet users a more pleasing and efficient online experience. Personalization also carries risks, of course. Namely, the combination of selective information exposure and social network participation means that online users are increasingly cloistered in homogeneous echo chambers, exposed to fewer new people and ideas. This homophily can facilitate confirmation bias (Baron 2000), polarization, misinformation, and cognitive bias (Keipi et al. 2017; Stanovich, West, and Toplak 2013), and perhaps even radicalization (Hawdon 2012) and the formation of hate communities (Keipi et al. 2017).

While the association between seeing extremism online and adopting extremist ideologies is still debated (McCants 2011; Rieger, Frischlich, and Bente 2013), and some researchers are skeptical of the Internet’s influence on radicalization (Benson 2014), many scholars and policymakers take the online threat of extremism seriously (Edwards and Gribbon 2013). The fear is that the growing ubiquity of the Internet, coupled with the expanding presence of online hate that advocates violence, can potentially lead to increased radicalization and violence.

Finally, hate-advocating extremism can be focused on anything or anyone; however, in today’s virtual world, much of this hate expresses right-wing views. As such, we expected those who are dissatisfied with major institution, hold anti-governmental views, and are economically disenfranchised would be more likely to flock to pages that express these types of opinions. While we find general support for this argument, we should note that this finding is context-specific. As social movement scholarship argues, various diagnostic and prognostic frames become popular at different times, largely in response to changes in macro-conditions such as widespread economic disruptions. In the United States of the
early twenty-first century, the disappearance of relatively high paying manufacturing jobs helped popularize diagnostic and prognostic frames that blame the current system and the welfare state for the changes that adversely affected the social location of the mostly white working class. This is why right-wing extremism dominates the virtual world of Americans. If—or when—macro-conditions change that give rise to different frames, the form and content of extremism is likely to change to reflect those frames. If this occurs, we would have to re-frame our model to reflect the worldview that best aligns with the extremism de jour. In other words, right-wing extremists do not hold an invariant monopoly on online hate; they just dominate the web now.

**Study Limitations**

Our study has limitations that require mention. First, our sample is limited to individuals between the ages of 15 and 36, thereby limiting the generalizability of our results. Even so, this sample selection was strategic, as younger adults spend more time online and are explicitly targeted by hate groups. Thus, they are more likely to encounter hate material online.

Second, we used demographically balanced panel data. It is possible that panel participants may have characteristics that differentiate them from individuals who chose not to participate. While this limitation applies to all survey-based research and we believe that our sample is representative of theoretically important groups, we cannot determine if other biases related to this sampling procedure are present. However, we are confident that our results are important, and given the frequent use of panel data for studies such as ours, we are confident that our findings are valid.

Third, several of our measures are based on the subjective interpretation of our respondents. Namely, our dependent variable asked individuals if they have been exposed to hate material online, and hate material can be perceived differently. However, because we focus on hate material that specifically advocates violence, we feel confident in the ability of our respondents to correctly identify such material.

Finally, using cross-sectional data hampers our ability to make causal statements. Longitudinal data would permit us to examine the effect of major social, political, or economic shifts on levels of exposure to online hate. We encourage future researchers to examine if structural changes, such as shifts in poverty rates or political party control, alter the likelihood of various groups being exposed to online hate materials.

**Conclusion**

We found general support for supplementing RAT with insights from SSSL. Not only do online behaviors correlate with exposure to hate-advocating violence, so does location in the social structure and the adoption of worldview consistent with extremism. All these factors influence exposure by patterning one’s proximity to motivated offenders and target suitability. Most importantly, our results
highlight how extremism appeals to the disaffected. In particular, online hate, especially right-wing hate, often frames its discourse in a manner that allows disenfranchised individuals to maintain a feeling of self-wroth, as the blame for their hardships is effectively displaced.

A better understanding of filter bubbles is imperative as concern grows over the possibility they stunt public discourse and potentially threaten democracy (Pariser 2011). Yet the online balkanization of ideas is not inevitable. Although extricating oneself from a bubble can lead to “overcorrection” that risks entering the diametrically opposed filter bubble, it is possible to become comfortable with moderate views by venturing further away from one’s current comfort zone (Pariser 2011). Indeed, platforms are beginning to facilitate viewpoint diversity. Weekly newsletters, for instance, are marketed to people who traditionally hold opinions counter to those being advertised, and apps such as “Read Across the Aisle” encourage idea exploration. Similarly, new online Internet extensions are evolving that allow opposing viewpoints to appear in one’s social media feeds. Perhaps the most difficult hurdle is getting people to be open to considering new ideas. Once this is accomplished, however, people are generally open to hearing opposing views (MIT Technology Review 2013). Thus, there are glimmers of hope that individuals mired in online filter bubbles can broaden their horizons. Of course, individuals have to choose to explore ideas and online spaces that challenge their worldview, and doing so is not easy. People are motivated, at least in part, to seek those with similar views to avoid the cognitive dissidence associated with challenging their beliefs (Liao and Fu 2013). Hate material is appealing to some precisely because it shifts blame from the individual to some other group. Exploring other points of view is not as simple as executing a few clicks; rather, it requires rethinking what we know about the world and our place in it.
## Appendix

### Appendix 1. Correlation Matrix of All Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saw online hate advocating violence (1)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social network usage (2)</td>
<td>0.11</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours/day online (3)</td>
<td>0.06</td>
<td>0.24</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency see hate online (4)</td>
<td>0.14</td>
<td>0.24</td>
<td>0.13</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust politicians (5)</td>
<td>0.01</td>
<td>0.07</td>
<td>−0.06</td>
<td>−0.30</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction index (6)</td>
<td>−0.08</td>
<td>0.04</td>
<td>−0.08</td>
<td>−0.31</td>
<td>0.66</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic viability (7)</td>
<td>−0.10</td>
<td>0.12</td>
<td>−0.01</td>
<td>0.00</td>
<td>0.09</td>
<td>0.07</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Been target of online hate (8)</td>
<td>0.26</td>
<td>0.05</td>
<td>−0.09</td>
<td>0.04</td>
<td>0.25</td>
<td>0.15</td>
<td>−0.05</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Express political views online (9)</td>
<td>0.16</td>
<td>0.15</td>
<td>0.01</td>
<td>0.05</td>
<td>0.21</td>
<td>0.18</td>
<td>−0.04</td>
<td>0.35</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>See hate and join in (10)</td>
<td>0.12</td>
<td>0.05</td>
<td>−0.04</td>
<td>−0.13</td>
<td>0.48</td>
<td>0.44</td>
<td>0.06</td>
<td>0.33</td>
<td>0.18</td>
<td>1.00</td>
</tr>
<tr>
<td>Self-control index (11)</td>
<td>0.12</td>
<td>0.06</td>
<td>−0.04</td>
<td>−0.20</td>
<td>0.57</td>
<td>0.43</td>
<td>0.08</td>
<td>0.34</td>
<td>0.24</td>
<td>0.47</td>
</tr>
<tr>
<td>Close to online community (12)</td>
<td>0.01</td>
<td>0.14</td>
<td>0.01</td>
<td>−0.16</td>
<td>0.54</td>
<td>0.40</td>
<td>0.12</td>
<td>0.24</td>
<td>0.26</td>
<td>0.39</td>
</tr>
<tr>
<td>Close to family and friends (13)</td>
<td>−0.09</td>
<td>0.16</td>
<td>−0.08</td>
<td>−0.04</td>
<td>0.22</td>
<td>0.28</td>
<td>0.20</td>
<td>−0.03</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td>Live alone = 1 (14)</td>
<td>0.02</td>
<td>−0.05</td>
<td>0.03</td>
<td>−0.07</td>
<td>−0.06</td>
<td>−0.02</td>
<td>0.04</td>
<td>0.04</td>
<td>−0.05</td>
<td>−0.05</td>
</tr>
<tr>
<td>White = 1 (15)</td>
<td>0.00</td>
<td>0.13</td>
<td>−0.09</td>
<td>0.04</td>
<td>0.09</td>
<td>0.11</td>
<td>0.02</td>
<td>0.05</td>
<td>0.11</td>
<td>0.03</td>
</tr>
<tr>
<td>Male = 1 (16)</td>
<td>0.02</td>
<td>0.07</td>
<td>−0.07</td>
<td>−0.15</td>
<td>0.29</td>
<td>0.24</td>
<td>0.11</td>
<td>0.09</td>
<td>0.01</td>
<td>0.21</td>
</tr>
<tr>
<td>Age (17)</td>
<td>0.04</td>
<td>0.05</td>
<td>0.07</td>
<td>−0.12</td>
<td>0.18</td>
<td>0.18</td>
<td>−0.12</td>
<td>0.04</td>
<td>0.13</td>
<td>0.11</td>
</tr>
<tr>
<td>Education (18)</td>
<td>0.04</td>
<td>0.13</td>
<td>0.08</td>
<td>−0.05</td>
<td>0.23</td>
<td>0.22</td>
<td>−0.08</td>
<td>0.06</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-control index (11)</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close to online community (12)</td>
<td>0.46</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close to family and friends (13)</td>
<td>0.13</td>
<td>0.28</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live alone = 1 (14)</td>
<td>-0.01</td>
<td>-0.04</td>
<td>-0.09</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White = 1 (15)</td>
<td>0.03</td>
<td>0.09</td>
<td>0.06</td>
<td>-0.21</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 1 (16)</td>
<td>0.22</td>
<td>0.27</td>
<td>0.10</td>
<td>0.05</td>
<td>0.09</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (17)</td>
<td>0.11</td>
<td>0.11</td>
<td>-0.04</td>
<td>-0.01</td>
<td>0.09</td>
<td>0.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (18)</td>
<td>0.15</td>
<td>0.11</td>
<td>0.00</td>
<td>0.05</td>
<td>0.07</td>
<td>0.05</td>
<td>0.69</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
About the Authors

James Hawdon is a professor of sociology and Director of the Center for Peace Studies and Violence Prevention at Virginia Tech. His research focuses on how community relations influence rates of violence, how communities respond to violent incidents, and how virtual communities influence their members and those who interact with the community. He has published papers on myriad aspects of online extremism. His current National Science Foundation project investigates the temporal-spatial flow of polarizing information.

Colin Bernatzky is a doctoral student in sociology at the University of California, Irvine and Fellow at the Jack W. Peltason Center for the Study of Democracy. His research interests include social movements, culture and cognition. He has published work on online extremism, right-wing populism, and the costs of homelessness. His current project examines the relationship between science and vaccine skepticism as part of UCI’s Provost Initiative on Understanding and Engaging with Extremism.

Matthew Costello is an assistant professor of sociology and criminal justice at Clemson University. His research interests include online extremism and political violence. He has published papers on the causes and consequences of exposure to online hate, correlates of being targeted by online hate, as well as factors associated with the production of online hate material. Additionally, he has published work on the political and economic causes of domestic and transnational terrorism.

References


Rieger, Diana, Frischlich Lena, and Bente Gary. 2013. Propaganda 2.0: Psychological Effects of Right-Wing and Islamic Extremist Internet Videos. Luchterhand.


