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'Don't talk to me': effects of ideologically homogeneous online groups and politically dissimilar offline ties on extremism

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Abstract
This study analyzes cross-sectional data obtained from respondents in neo-Nazi online discussion forums and textual data from postings to these forums. It assesses the impact of participation in radical and homogeneous online groups on opinion extremism and probes whether this impact depends on political dissimilarity of strong and weak offline ties. Specifically, does dissimilarity attenuate (as deliberative theorists hope) or rather exacerbate (as research on biased processing predicts) extreme opinions? As expected, extremism increases with increased online participation, likely due to the informational and normative influences operating within online groups. Supporting the deliberative and biased processing models, both like-minded and dissimilar social ties offline exacerbate extremism. Consistent with the biased processing model, dissimilar offline ties exacerbate the effects of online groups. The theoretical and practical implications are discussed.

Key words
cross-cutting exposure, extremism, heterogeneity, internet, online groups, polarization, social networks

Introduction

Many scholars have hoped that the internet will reinvigorate the public sphere by diversifying the marketplace of ideas and providing an improved forum for political deliberation (see Papacharissi, 2002). Conversely, others have argued that the internet might

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terminate vibrant discussion across opinions because it facilitates participation in like-minded online groups that provide a self-selected refuge for political extremists (Sunstein, 2001). Interacting in such online groups would polarize participants' predilections toward yet more extreme positions, ultimately mobilizing participants' to engage in socially detrimental actions.

These bleak scenarios are incomplete, inasmuch as little evidence exists to support them and they do not account for the offline environment. That is, although some scholars describe the online public sphere as a hornet's nest for extremists who are becoming yet more extreme, no studies have assessed whether existing online spaces indeed polarize members' opinions. Also, although researchers recognize the connection between online and offline activities, not many analyses have addressed the interplay between both milieus with regard to their joint impact on political attitudes (e.g. Hardy and Scheufele, 2005; Shah et al., 2001).

Drawing on unique survey data obtained from participants in neo-Nazi online forums and textual data from postings contributed to the forums, this study addresses these gaps. It assesses the links between participation in radical and ideologically homogeneous online groups and opinion extremism. This study goes a step further and examines whether politically dissimilar strong and weak social ties *offline* impact extremism and whether they moderate the influence exerted by online communities. Are neo-Nazis embedded in dissimilar social milieus more or less affected by online groups? First, this article presents the mechanisms through which radical and homogeneous online groups are expected to polarize views. Second, it shows why politically dissimilar social ties should impact individual opinions and moderate the influence exerted by online groups. Finally, it outlines two contradictory predictions as to the role played by political dissimilarity.

Computer-Mediated Dangers

Scholars who focus on the perils presented by the internet emphasize people's tendency to expose themselves to consonant opinions (Sunstein, 2001). It is widely known that people select discussion partners based on political or ideological similarities (Mutz, 2006). It is also a platitude to say that the internet facilitates contact with groups that transcend geographical confines (Van Alstyne and Brynjolfsson, 1997). Together, individual inclinations and the potential offered by the internet lead to the emergence of politically homogeneous online communities. Indeed, political chatrooms and message boards expose visitors to consonant perspectives to a greater extent than other types of online groups in which sociopolitical topics come up (Wojcieszak and Mutz, 2009) and some online communities attract radical ideologues (Southern Poverty Law Center, 1999). In fact, the number of hate groups in the USA has grown by 54 percent since 2000 (Southern Poverty Law Center, 2009) and the number of online hate sites increased by more than 60 percent in 1999 alone (Southern Poverty Law Center, 1999). Might interaction in such online groups exacerbate members' extremism? The answer to this crucial, but to date empirically unaddressed question, seems to be affirmative.

Interpersonal discussion may amplify the strength with which majority opinion is held and consequently groups tend to polarize toward more extreme positions in the

direction to which members were originally inclined (Moscovici and Zavalloni, 1969; Myers, 1975; Turner, 1991). This tendency is attributed to two forms of social influence, normative and informational (Deutsch and Gerard, 1955), both of which might be intensified within radical and ideologically homogeneous online groups.

First, affinity among members in like-minded groups might increase their susceptibility to normative influence and encourage them to adjust opinions to others' expectations and to the views prevalent within a group. Relative anonymity and reduced social cues during online interactions may further increase this susceptibility, as those features minimize the perceived differences among individuals and foster identification with a group, ultimately inciting polarization toward more extreme positions (Lee, 2006; Postmes et al., 1998; Spears et al., 1990). Second, online spaces might exert informational influence, whereby members accept others' arguments as valid evidence about reality. Because participants in ideologically homogeneous online groups share similar perspectives, challenging views are not expressed and the available arguments are one-sided (Hill and Hughes, 1997). Anonymity, affinity, in-group identification and seeing others as similar, in turn, lead respondents to accept others' opinions readily. Moreover, depersonalization during online interactions enhances argument recall and results in more positive argument evaluation (Lee, 2006). Ultimately, the opinion climate within online groups may influence respondents' own expressions and affect respondents' post-discussion views (Price et al., 2006). This research leads to the following hypothesis:

> Participation in radical and ideologically homogeneous online groups will increase opinion extremism among the respondents.

Filling the Voids: Offline Strong and Weak Social Ties

Online and offline environments do not function in isolation and respondents in online groups also belong to social networks offline (e.g. Boase et al., 2006). Those networks encompass strong ties, with whom people have frequent, intimate and mutually supportive interactions, as well as weak ties, such as neighbors or work colleagues (Granovetter, 1973). Those ties exert direct influence on individual opinions: that is, political attitudes are formed primarily within strongly tied groups (Berelson et al., 1954; Liebes and Ribak, 1992) and are influenced by weakly tied networks that link distinct people and disseminate novel ideas (Granovetter, 1973; Huckfeldt and Sprague, 1995). Social ties also moderate the influences exerted by the media or (in this particular case) by online groups, in that the extent to which the media will affect an individual depends on interpersonal political talk (Eveland and Scheufele, 2000; Hardy and Scheufele, 2005; Scheufele, 2002).

It follows that it is crucial to account for offline networks when analyzing the effects of interactions in online groups. When analyzing the effects on political attitudes, it is especially important to focus on the opinions – like-minded or dissimilar with respect to an individual – held by offline social ties (Berelson et al., 1954; Feldman and Price, 2008). After all, whether or not friends, family and acquaintances share a person's political views is likely to influence the person's opinion extremism. However, the exact nature of this influence is less clear, with at least two predictions emerging from the literature.

Deliberative model

Deliberative theory suggests that politically dissimilar social ties should decrease extremism and attenuate the influence exerted by radical and ideologically homogeneous online groups. This is because encountering dissimilar opinions would encourage people to take others' views into account in reconsidering their predilections, foster understanding (Arendt, 1968) and result in '[s]ound political judgment' (Page, 1996: 2). Indeed, talking politics with family, friends or co-workers who hold oppositional views (Mutz, 2002a; Mutz and Mondak, 2006) and political disagreement with respondents in structured and moderated online groups (Price et al., 2002) increase tolerance and familiarity with dissimilar perspectives. These gains could be expected to attenuate strong predilections. In a similar vein, exposure to oppositional views held by friends, family and acquaintances could make people aware that multiple perspectives exist and create ambivalence. This, in turn, could increase people's uncertainty about their position and lead them to hold more moderate opinions and balanced judgements (Lavine, 2001; Mutz, 2002b; Sniderman, 1981).

Why would a person whose social ties are politically dissimilar be less influenced by radical and ideologically homogeneous online groups? Friends, family and acquaintances with oppositional views may make a given issue ambiguous or problematic, as the mediated information 'is overwhelmed by new, contradictory or biased information gleaned during interpersonal discussions about politics' (Feldman and Price, 2008: 67). This may lead to 'communication confusion' (Lenart, 1994), which may result in weakly held opinions. Also, because interpersonal ties serve to validate one's opinions (Finifter, 1974), a person might devalue or re-evaluate a news story or internet posting that is inconsonant with views held by friends, family or acquaintances (Steiner, 1966). Ultimately, dissimilar social ties should attenuate the extremism that results from interactions with like-minded radicals in online communities.

Biased processing model

Conversely, the research on biased processing suggests that encountering dissimilar opinions might exacerbate strong predilections further. This would occur because personal commitment biases information perception, interpretation and evaluation, in that people who are committed to their position tend to rationalize the opinions already formed by readily accepting consonant information and producing reasons that buttress their prior views (Kunda, 1990; Petty and Cacioppo, 1990). Concurrently, strongly opinionated people subject dissonant information to critical scrutiny, discredit it or fail to consider its relevance (see Nickerson, 1998). These processes may result in attitude polarization on issues ranging from presidential candidates to homosexuality or the death penalty (Lord et al., 1979; Meffert et al., 2006; Munro and Ditto, 1997). It follows that respondents in radical and ideologically homogeneous online groups could become yet more extreme following offline interactions with dissimilar friends, family and acquaintances.

In addition, politically dissimilar social ties may strengthen the association between online participation and opinion extremism. This is because people might scrutinize more closely and process more carefully information from the media or online groups, so that they can defend their views during interpersonal disagreements (Eveland, 2004). Also, when individual media choices or online activities are criticized by others, people

may defend themselves and further reinforce prior views in the process. Moreover, people with dissimilar social ties could turn to attitude-consistent media and seek out like-minded discussants online in order to clarify doubts or explain away challenging opinions. Ultimately, dissimilar offline ties could exacerbate the impact that radical and ideologically homogenous online groups have on extremism.

To sum up, although politically dissimilar friends, family and acquaintances offline should impact opinion extremism directly and influence the association between participation in online groups and extremism, it is unclear what this impact will be. Because the research on deliberation and biased processing are both applicable to the issue at hand, it is sensible to pose the following research question:

> What role do politically dissimilar offline strong and weak ties play in opinion extremism and in moderating the influence exerted by radical and ideologically homogeneous online groups?

Method

Data collection

The data for this study come from participants in neo-Nazi online discussion forums. This study benefited from triangulating methods, relying on cross-sectional data and contextualizing them with forum postings. The forums were identified by online search and subsequent web-graph analysis using the Issue Crawler Software. Web-graph analysis yielded central forums, pointed to others that were not found in the basic search, and assured that 10 major online forums were identified.

Postings were selected from every second thread on the issue-oriented sections of the forums. Thus posts to sections such as 'Ideology', 'Philosophy' or 'White Nationalism Education' were analyzed, and those from 'Suggestions', 'Announcements' or 'Guidelines for Posting' were omitted because they do not pertain to sociopolitical issues. Because such publicly accessible online forums allow for unobtrusive techniques and offer unprecedented insight into the discursive processes occurring within, studying them is a 'new and potentially quite powerful mode of scientific observation' that 'offers a more refined understanding of popular thought than might be gained from structured surveys' (Price et al., 2006: 48). Thus, the textual data complement the cross-sectional data and offer the context necessary to understand the processes underlying the analyzed relationships.

Sample

The cross-sectional data, in turn, come from an online survey conducted in summer 2005. The respondents' email addresses and private messages were compiled by selecting every second thread dating back to 1 June 2004, then selecting every second topic given a random start. Every second email address or private message was collected to create a list of active respondents, from which duplicate emails or private messages were removed. When member directories were available, the respondents' nationality was checked to exclude non-North Americans, to whom some questions would not be relevant.[1]

A link to the online survey was sent to 300 sampled email addresses and private messages and a week later follow-up emails and private messages were re-sent. Of these, 114

resulted in completed interviews included in this analysis. An additional 68 resulted in partial completes. The response rate was 38 percent, using the American Association for Public Opinion Research Response Rate 1. The sample was younger ($M = 33$, $SD = 13$) and more racially homogeneous (98% white) than the general population. Also, the respondents were better educated ($M = 16$ years), mostly male (86%) and with a median income between \$30,000 and \$50,000.

Measures

Opinion extremism The respondents indicated on a seven-point scale (ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'), their agreement with 10 ideology-specific statements. Examples include: 'Violence against non-white people is a natural ritual passage into true manhood', 'All non-white people who are now in the US should be deported and not allowed back into the country', and 'I would mind if a close relative or family member wanted to marry a non-white person'. The final measure averaged the responses (one factor, $\alpha = .76$, $M = 5.16$, $SD = 1.1$, range 1–7, with 7 being the most extreme).

Level of participation in online groups Using participation in online groups as the main predictor requires addressing such issues as the frequency and amount of time spent online. These were assessed by two questions: 'During the past week, how many times did you enter this forum and other forums that address political issues from a similar point of view?' and 'During the past week, how much time did you spend participating in this forum and in other forums that discuss political issues from a similar point of view?' To create a complete measure, an additional question asked: 'When did you first start participating in this forum and in other forums that discuss political issues from a similar point of view?' The final measure averaged the responses (one factor, $\alpha = .76$, $M = 3.55$, $SD = 1.30$; range 1.00–5.33; greater values indicate greater participation).

Perceived political dissimilarity of offline ties Political dissimilarity was assessed separately for strong and weak offline ties (see Boase et al., 2006). The respondents were asked to 'think about those people you feel very close to, such as your family and close friends' and questions probed into perceptual dissimilarity ('How many of them do you think generally have opinions on political issues that are different from yours?'), exposure to dissimilar opinions ('How often do they express views on political issues that are different from yours?'), and political disagreement ('How often do you disagree with them when you talk about politics?'). The final perceived dissimilarity of offline strong ties measure averaged these items (one factor, $\alpha = .74$, $M = 2.86$, $SD = .97$, range 1–5). Later, the respondents were primed to 'think about the people you feel somewhat close to. 'They're more than just casual acquaintances, but they're not as close as the friends and relatives you already identified above', and parallel questions probed into perceptual dissimilarity, exposure to dissimilar opinions and political disagreement. The final perceived political dissimilarity of weak ties measure was created by averaging these items (one factor, $\alpha = .75$, $M = 2.92$, $SD = .97$, range 1–5, greater values indicate greater dissimilarity).

News media exposure Because exposure to news media may influence political opinions, all multivariate models controlled for this factor. The respondents were asked to indicate the number of days in the past week that they watched national network news, cable news, local TV news (10 stations and programs were listed), read a daily newspaper (six titles listed) and listened to national public radio or to political talk radio (seven

shows listed). In addition, they were asked to select which news or current events maga-
zines they read (six listed and an open-ended 'other'). The final measure summed the
answers ($M = 13$, $SD = 14$, range 1–54).

Results

This study examined the relationship between participation in radical and ideologically
homogeneous online groups and opinion extremism as contingent on political dissimilar-
ity of offline social ties. Do online interactions predict extremism? To test the hypothesis,
a regression model was constructed which included the controls of age, gender, educa-
tion, income, news media exposure and online participation. Participation in online
groups indeed strongly predicted favorable feelings toward Hitler and support for racial
violence ($b = .32$, $p < .000$), also controlling for sociodemographic characteristics and
news media exposure, which did not exert significant effects ($R^2 = 16\%$). Although this
finding supports the hypothesis, problems arise with regard to causality; after all, extrem-
ism is a prerequisite to being involved in neo-Nazi forums. Although causality cannot be
determined with these data, there are two ways to bolster the claim that taking part in
radical and ideologically homogeneous online groups polarizes opinions.

First, a Two Stage Least Squares (2SLS) regression was used to estimate the strength
of the causal relationship. The data contained variables that predicted online participa-
tion but *not* extremism, and which were used as instrumental variables in a 2SLS analy-
sis. Specifically, gender and exposure to dissimilar news media (a measure not reported
here) were correlated only with online participation and not with extremism ($r = .29$,
$p < .000$, $r = -.26$, $p < .000$) and predicted online participation ($b = .76$, $p < .05$, $b = -.05$,
$p < .05$; first-stage $R^2 = .26$). The variables produced by the first-stage estimations were
included in a 2SLS model, in which gender and exposure to dissimilar news media were
endogenous. The model found that the coefficient for online participation was marginally
significant when accounting for reciprocal causation ($b = .39$, $p < .10$). This lends some
support to the hypothesis, suggesting that although it is extreme people who turn to radical
groups, participation therein might further exacerbate their views.

Additional support for the hypothesized directionality comes from textual analysis. The
postings suggest that there are members who were not favorable toward neo-Nazism until
they encountered online forums. To refer to those individuals, terms such as 'awakening'
and 'realization' are used. One poster writes, 'As many of us awaken gradually, I'd be inter-
ested in how many of us WN's [White Nationalists] were once antis', and another argues:

> There are a number of whites who start out as antis or fence sitters, [but once] they realize that
> they've been fed pseudointellectual propaganda by the mass media and educational system,
> then they'll (hopefully) become WNs. (StormFront; http://www.stormfront.org/forum/)

Postings also suggest that lurkers, i.e. people who read without posting, might become
active participants because 'they may instinctively know that what they feel inside about
other races is right but have been taught to believe that WN is evil hatred'. Meeting like-
minded extremists online might activate their prejudices.

Postings also explicate the mechanisms that may exacerbate extremism. The first
appears to be informational influence that operates through argumentation. The forums

contain threads, such as 'Frequently Asked Questions and Answers' or 'Learn More about White Nationalism', where members outline arguments and refer to books, articles or historical documents to buttress their views. Those participants who emphasize the role that the forums have played in them becoming 'racially conscious' attribute this to the information offered in the forums. Members mention reading 'the intelligently expressed posts' and refer to them as educational ('Thanks for the education ... I am proud to be associated with such astute White Nationalists', StormFront). This process is well illustrated by this excerpt:

> When I first saw this site I figured it was just a bunch of wack-o white supremacists crying 'white power' and all the other nonsense that I had been conditioned by the media to reject and recoil away from in horror. But I started reading anyway. (All you Anti's, take note.) I started at around ten pm and finally turned off my computer around noon time the next day ... Everything [the members] write here makes sense, everything they write is backed up with facts ... I thank the members here for their hard work and dedication in researching the facts they present and for opening my eyes to the real world ... I am now a White supremist and damned proud of it. (StormFront; www.stormfront.org/forum/)

Increases in opinion extremism are sometimes noticeable within longer threads. Then, participants are exposed to others' views, engage with those views by responding and might polarize their position. Such polarization is illustrated by comments under an 'opinion poll' on 'Your Racial Attitude'. The 'poll' provided three response options: pro-extermination (27%), pro-separation/segregation (65%) and pro-slavery (9%) (WhitePower Forum; www.whitepowerforum.com). The extreme members commented: 'I voted for extermination. Solves the problem completely'; 'There's only one solution to end a virus and that's killing it!! We must purify our world and get rid of the cancer of our society!' Other members were susceptible to these comments, admitting:

> [T]he more I think about this, the more I agree. Separation would have a temporary effect … With extermination, it would eliminate the opportunity for non whites to ever gain access to our People. (WhitePower Forum; www.whitepowerforum.com)

Another poster, who first opted for sterilization of people of color and was informed of its high costs, replied: 'Just kill them all then.' These examples demonstrate that opinions might become more extreme following relatively short exchanges.

Online groups may increase extremism by exerting normative pressures. There exist numerous sub-threads where participants ask others for personal or professional advice, voluntarily exposing themselves to influence. Also, advanced members often reply to postings by novices, comment on their views, assign verbal awards or reprimands and may polarize their positions. This is illustrated by the following examples. A new member asks, in a thread notably titled 'Are liberals really that bad?, if so, plz don't flame me too badly', whether it is possible to be a 'proud Aryan and a liberal'. After a short exchange, in which a senior member attacks him: 'You're a jew pretending to be an "Astounding Aryan"', the initiator concludes that his Aryan identity is more salient (WhitePower Forum; www.whitepowerforum.com). Reprimands are also offered to an adolescent, who asks whether he should date a girl who socializes with Mexicans. An

experienced member replies: 'I wouldn't waste my time on her .... She's no good for you' and another adds: 'she's not going to stop seeing Mexicans. Why keep bothering with her?' (StormFront; www.stormfront.org/forum).

In a similar vein, some members admit that their social circle encompasses people of color. These 'confessions' are followed by criticism. Posters present ultimatums ('having a "real" friend that is nonwhite is distinctly contradictory to White Nationalism' or 'it is complete hypocrisy to a white nationalist view of segregation and separation') and deride such contacts ('I find it amazing that a person who is a WN would have a non-white friend' or 'I simply cannot fathom having a friend that is Black or Hispanic. Both cultures are inherently repugnant'). Such threads are often concluded by a well-respected member. For example, it was a member with more than 21,000 posts who summed up one discussion, saying: 'WN = **White Nation**alism. Your non-White friends would not be welcome in a White nation' (StormFront; www.stormfront.org/forum/). Such a normative pressure may influence participants and polarize their views toward more extreme positions.

Political dissimilarity of offline social ties

Thus far, the results suggest that participation in radical and ideologically homogeneous online groups increase members' extremism. Do politically dissimilar offline ties decrease extremism and attenuate the influence exerted by online communities? Or, rather, do dissimilar friends, family and acquaintances polarize strong views and further exacerbate the association between online participation and extremism? In other words, is the deliberative or biased processing model more applicable to the issue at hand? To test these direct and interactive effects, two hierarchical regression models were constructed, one for strong and one for weak offline ties.[2] Both models included sociodemographics, news media exposure, participation in online groups and two categorical measures representing high and low perceived dissimilarity of offline ties (with the medium being a reference category).[3] These were followed by two interaction terms in each model (online participation × low dissimilarity and online participation × high dissimilarity) formed from centered variables in order to avoid multico-linearity (Aiken and West, 1991).

Table 1 details the estimates for both models. Further supporting the first hypothesis, both models found that extremism is primarily predicted by participation in online groups. The marginally significant coefficients for income and news media exposure suggest that those neo-Nazis who are economically well-off and those who often turn to news media are slightly less extreme than their counterparts with lower income and a limited news media diet.

Do politically dissimilar strong ties decrease extremism and interact with online participation? As seen in the first column, the positive coefficients for the categorical measures representing low and high dissimilarity indicate that those neo-Nazis whose friends and family hold oppositional views, and those whose family and friends are like-minded, are on average more extreme than neo-Nazis embedded in moderately dissimilar groups. However, both interaction coefficients are negative and the one for low dissimilarity is significant. This suggests that the relationship between online participation and extremism is weaker for those respondents whose friends and family are like-minded. This pattern is illustrated in Figure 1, which plots the predicted means based on all the variables in the model. What role do dissimilar weak ties play? The second column in Table 1

Table 1. Predicting opinion extremism

	Model 1 b (se)	Model 2 b (se)
Constant	4.54***	4.19***
	(0.61)	(0.60)
Gender	−0.37	−0.17
	(0.29)	(0.29)
Age	−0.00	−0.00
	(0.01)	(0.01)
Education	0.01	0.02
	(0.04)	(0.04)
Income	−0.01[†]	−0.00
	(0.00)	(0.00)
News media exposure	0.01	0.01[†]
	(0.01)	(0.01)
Online participation	0.21**	0.23**
	(0.08)	(0.08)
Strong ties – low dissimilarity	0.51*	–
	(0.23)	
Strong ties – high dissimilarity	0.41[†]	–
	(0.22)	
Weak ties – low dissimilarity	–	0.43*
		(0.22)
Weak ties – high dissimilarity	–	0.66**
		(0.23)
First block R^2 (%)	14%	20%
Strong ties low dissimilarity × online participation	−0.40*	–
	(0.20)	
Strong ties high dissimilarity × online participation	−0.13	–
	(0.19)	
Weak ties low dissimilarity × online participation	–	−0.14
		(0.17)
Weak ties high dissimilarity × online participation	–	−0.19
		(0.23)
Incremental R^2 (%)	4	1
R^2 (%)	18%	21%

***$p \leq 0.001$, **$p \leq .01$, *$p \leq .05$, [†]$p \leq .10$; Entries are final unstandardized OLS regression coefficients with standard errors in parentheses; Total R^2s are percentages; Incremental R^2 illustrate the changes after entering the interaction terms.

shows that like-minded as well as oppositional weak ties also increase extremism. Nonetheless, the interaction terms are insignificant.

Analysis of the postings complements the above results, suggesting that the offline environment indeed directly impacts opinion extremism and that it interacts with participation in neo-Nazi online forums.
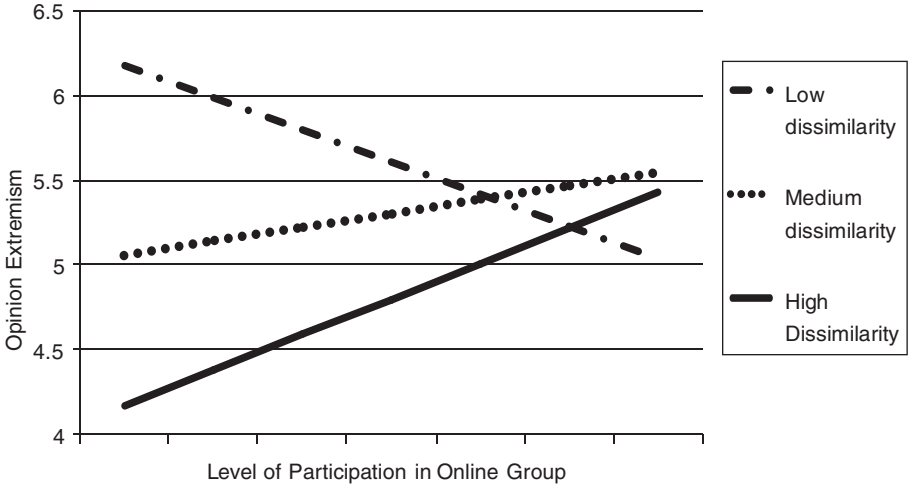
Figure 1. Predicted opinion extremism by level of dissimilarity of strong ties

First, consistent with the multivariate models, politically similar and dissimilar offline environments appear to increase extremism. The participants note that their views are due to like-minded strong ties. One member writes that he was raised 'racially aware' and that his father warned him that he 'would disown me if I ever married non-White' (StormFront; www.stormfront.org/forum). Similarly, others state: 'My parents and grandparents constantly threw around racist terms directed at blacks and mexicans' (WhiteRevolution Forum; www.whiterevolution.com/forum14), or 'My parents didn't like blacks and told me the pure and simple truth about them' (StormFront; www.stormfront.org/forum).

Dissimilar offline ties also seem to exacerbate strong views. Some members state that it was precisely the surrounding diversity that led them to seek the authority found in white nationalism. One member writes: 'I grew up very "integrated," which is to say indoctrinated with ideals of equality' (Vanguard News Network Forum; www.vnnforum.com) and another admits that having a Jewish stepfather made him realize 'how alien the Jews were from the rest of the world' (StormFront; www.stormfront.org/forum). Moreover, political disagreement increases extremism. Neo-Nazis report emerging from contentious discussions believing that there are no rationales for opposing positions. Members say that dissonant views 'strengthen our WN beliefs because they allow us to expose the antis' nonsensical arguments for the garbage that they are' (WhiteRevolution Forum: www.whiterevolution.com/forum14), or complain that

> people who ... disagree with my political views usually don't know what they're talking about. When I ask them to give a reason for what they think, they have none. (Vanguard News Network Forum; www.vnnforum.com)

Political disagreement hones members' debating skills and encourages them to search for more arguments. Posters state: 'I wish people would criticize me on a daily basis

because it only serves to motivate me' (StormFront; www.stormfront.org/forum), and admit that debates 'are only good for the sake of finding faults with your beliefs', so that the faults can be later addressed (email).

Second, postings support the biased processing model and suggest that politically oppositional offline contacts exacerbate the influence exerted by online groups. This is because members encourage each other to reject dissenting views encountered during daily interactions. Members do it through rhetorical means that discredit challenging perspectives, referring to the opposition as 'brain-washed multicults' (StormFront; www. stormfront.org/forum) or 'sheep-like humanoids' (Vanguard News Network Forum; www.vnnforum.com). Also, forums teach debating skills, inform how to use these skills during offline interactions, outline oppositional views and provide arguments to rebut those views. Members recognize that such threads are useful: 'I learned a lot and really liked the ending part of defense things to say', and 'I will print this out and pass it out to a few people'. Some intend to apply the information:

> This gives us more ways to explain to the brain-washed white people we come into contact with, the truth about the 'Holohoax'.

> [T]his will give me good ammunition to have some good debates with my instructor and Jewish brainwashed classmates.

> Next time a mud questions me about all races being equal I'm going to show him those stats. (WhiteRevolution Forum; www.whiterevolution.com/forum14)

Overall, the postings suggest an intricate relationship between online groups, offline environment and opinion extremism. Like-minded friends and family first form the views of the analyzed neo-Nazis and later reinforce those views. However, it is dissimilar ties – strong and weak alike – that appear to exacerbate strong opinions and intensify the impact exerted by participation in radical and ideologically homogeneous online groups.

Discussion

> Is the White man's friend ... The World Wide Web ... that makes it possible for me in Louisiana to talk to you in California through a server administered in Florida in order to get Mr Duke's works to you and share this experience with our kinsmen all over the world. (StormFront; www.stormfront.org/forum)

Scholars have noted that radical and ideologically homogeneous online communities have proliferated and have warned that participation in such communities increases extremism. However, no studies have empirically assessed this impact. Researchers have addressed the interconnection between online and offline activities, but – with some exceptions – these two spheres have been analyzed separately. This study has addressed both issues. The hypothesis predicted that opinion extremism increases with increased involvement in radical and ideologically homogeneous online groups. Further, the research question asked about the role that offline social environment plays in the

process. Whereas deliberative scholarship has suggested that politically dissimilar ties should decrease extremism and attenuate the effects produced by online participation, research on biased processing has predicted that dissimilar friends, family and acquaintances should increase extremism and exacerbate the influence exerted by online groups.

The cross-sectional and textual data support the hypothesis. The respondents' extremism increases with participation in neo-Nazi online discussion forums, also controlling for age, gender, socioeconomic status and news media exposure. Forum postings suggest that members polarize because they are susceptible to informational and normative influence: that is, online forums offer arguments that rationalize and reinforce members' perspectives. Members also receive rewarding or punitive replies to their posts and, through normative pressures, might adjust their views to the norm prevalent within the group.

What is the role played by politically dissimilar social contacts offline? The main effects coefficients in the regression analyses support both the deliberative and biased processing models. Being embedded in a like-minded social network is positively associated with extremism. This suggests that, consonant with the deliberative model, people who lack exposure to oppositional views may be unable to form balanced or open-minded views. At the same time, dissimilar family, friends and acquaintances increase extremism. Perhaps, as the biased processing model suggests, strongly opinioned people actively defend their views when those views are challenged. In other words, exposure to both like-minded and oppositional perspectives is associated with the respondents' acceptance for racial violence and questioning the Holocaust.

In addition to the deliberative and biased processing models, there are other explanations for these findings. The fact that like-minded friends and family increase extremism is attributable to their central role in political socialization, during which opinions are formed in the first place (e.g. Liebes and Ribak, 1992). Like-minded weak ties, in turn, could create an impression that many people in the broader surroundings support individual perspectives, and therefore that those perspectives are valid (e.g. Noelle-Neumann, 1993), an impression that could reinforce strong views. The finding that dissimilar offline ties increase extremism, in turn, is consonant with research on resistance to persuasion, according to which non-ambivalent individuals in heterogeneous networks become more committed to their views (McGuire, 1964).

The interaction results are consistent with the biased processing model in that like-minded strong ties attenuate the association between online participation and extremism. On the one hand, despite increased online engagement, extremism is lower among those neo-Nazis whose friends and family hold similar views. On the other hand, contacts with weak ties do not have a moderating effect. This differential role played by strong and weak ties might be explained by research on social influence and reference groups, according to which norms conveyed through friends and family may shape individual reaction to online groups more successfully than the information conveyed through more distant associates (see Hyman and Singer, 1968).

Qualitative analyses complement these results and support the biased processing model. They indicate that politically dissimilar social ties offline further strengthen the influence exerted by neo-Nazi forums. Paradoxically, the postings suggest that it might be advisory not to engage in contentious discussions with radical ideologues, as they appear to ignore dissenting opinions, use the information from online groups to rebut

counter-arguments and generate rationales that strengthen their predilections. Also, threads that delineate opposing views, provide rebuttals and offer tips on how to debate might inoculate participants against dissimilar perspectives. As one member put it: 'we are existing in a world filled with influence, but are mostly immune to it because we have educated ourselves' (Vanguard News Network Forum; www.vnnforum.com).

Conclusion

Limitations of the study

As with any study, this comes with several limitations. First, the cross-sectional design limits the ability to make a strong inference about causal direction. Even though there is an association between participation in online groups and opinion extremism, this association does not provide evidence for causality. This concern was partly addressed by applying a 2SLS regression and complementing the quantitative findings with textual analysis. Given the issue's importance, experimental research should disentangle the causal direction and explicate the exact processes through which radical and ideologically homogeneous online groups influence participants' opinions.

Also, this study cannot determine whether the detected relationships hold primarily for radical and unanimous online groups, or whether they also emerge in comparable offline contexts. On the one hand, depersonalization or online anonymity could strengthen normative and informational influence and incite extremism to a greater degree than offline interactions. On the other hand, physical presence and visual cues in face-to-face settings might influence individual views more effectively. Longitudinal studies that analyze like-minded interactions among online and face-to-face groups are needed to assess whether these two contexts differently exacerbate strong opinions.

Because perceived political dissimilarity may not indicate factual differences reliably, conclusions regarding the role played by friends, family and more distant social ties need to be interpreted cautiously. At the same time, in order for dissimilarity to have any effect, it has to be noticed by a person; and even when a political contention is objectively assessed as such, it will not produce any effects unless those engaged in it are aware that dissimilar perspectives are expressed. Also, evidence from social network self-reports with follow-up confirmations by discussion partners shows that such reports tend to be accurate (see Mutz, 2002b). Further, the findings from respondents' self-reports were complemented by qualitative analyses. Nevertheless, it would be ideal to validate those self-reports with follow-up data on the views held by offline ties.

Finally, the findings on participants in discussion forums might not apply to people who utilize chat rooms or other forms of computer mediated communication. In order to account for potential differences, attempts were made to recruit visitors to neo-Nazi Yahoo! and Internet Relay Chat chats. Because those online spaces are less populated, the number of respondents was insufficient to conduct analyses. Future studies that differentiate between various channels should assess whether individual views are differently influenced by synchronous versus asynchronous communication and/or by interactions in densely populated versus sparsely attended online spaces.

Final remarks

Despite these limitations, this study offers findings with both theoretical and practical implications. It shows that focusing solely on online activities when analyzing the effects produced by computer-mediated communication may yield incomplete results, and that it is essential to concurrently analyze influences that offline environments have on individual political attitudes and behaviors. Although studies that focus on either online or offline communication provide detailed insight into the contributions made by those milieus separately, it is the scholarship that integrates those milieus which might provide the most comprehensive analytical framework and which stands to reveal more accurately the various influences on individual opinions and actions.

Setting the unconventional sample aside, this study also suggests that the linkages between exposure to dissimilar views and political attitudes are complex and not always beneficial. Because some people may use oppositional information to strengthen their predilections further, promoting exposure to dissimilar views perhaps should be contingent on individual opinion strength. Applied specifically to the issue at hand, the presented findings caution against such undertakings as hacking the Ku Klux Klan website and redirecting its traffic to anti-racist websites (see Chadwick, 2006). Although the goal was to encourage neo-Nazi sympathizers to reconsider their predilections, this study suggests that such and similar actions may backfire.

Most prominently, the results show that online groups may have emerged as an additional factor that influences political opinions. If those groups favor racial violence and social disruptions, indeed their individual and societal impact may be disconcerting. Ideologically homogeneous online communities influence political participation (Wojcieszak, in press), self-expression (McKenna and Bargh, 1998) and public opinion perception (Wojcieszak, 2008) and exacerbate extremism. Online groups, 'ranging from Anarchists, Hippies and Vegetarians to Skinheads, Survivalists and Aryans' (Norris, 2001: 186), attract numerous respondents, create loyalties and reach out to new constituencies (see Garrett, 2006). Although such online communities will not turn most internet users into radical ideologues, nevertheless, moving some users toward yet more extreme positions may have consequences that reach beyond cyberspace.

Acknowledgement

Notes

1   This study did not pose any threats to respondents' privacy and/or confidentiality. First, the questionnaire was placed on an online server which does not allow researchers to determine from which forum or respondent a given response came. Also, the questionnaire was anonymous and the responses were analyzed collectively. With regard to the qualitative analyses, because the cited quotes are not

accompanied by screen names, it is unfeasible to locate an individual in a venue in which they interacted. Ethical considerations notwithstanding, it needs to be remembered that people who interact in public, archived forums are aware that their online discourse can be widely accessed (see Paccagnella, 1997).

2 The research question was addressed separately for strong and weak ties because these two social formations are qualitatively different (Granovetter, 1973) and might differentially affect opinion extremism.

3 The offline dissimilarity measures were trichotomized for methodological and theoretical reasons. First, the relationship between offline dissimilarity and opinion extremism was cubic and including linear, squared and cubic main effects variables as well as three interaction terms would pose interpretative challenges and over-control for online participation. Second, research has found that what may matter to political behaviors is whether an individual is in the majority or minority (Huckfeldt and Sprague, 1988; Nir, 2005; Wojcieszak, in press). Categorizing the measures allowed an assessment of whether this is also the case with regard to opinion extremism, in that whether an oppositional network (high dissimilarity) has different effects than a like-minded network (low dissimilarity), and than a network in which some ties are similar and others are dissimilar (medium dissimilarity).

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