Cultural Difference, Social Values, or Political Systems? Predicting Willingness to Engage in Online Political Discussion in 75 Societies

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The oft-quoted John Dewey line "[d]emocracy begins in conversation" (Lamont, 1959, p. 58) highlights the political implication of free and vibrant discussions in modern societies. Political discussion and conversation could enhance public opinion, which in turn influences political actors and their policies (Stromer-Galley & Wichowski, 2010). The advent and the spread of the Internet have affected various aspects of politics, including the way people exchange views and opinions with others. Many believe that the Internet could help the underprivileged to get their voice heard in cyberspace (Howard & Hussain, 2011;,Schneider, 1996), and the interactive capability of the Internet is expected to promote democratic political communication (Howard & Jones, 2003;,Slater, 2007;,Stromer-Galley, 2003). However, ambiguity remains regarding the extent to which new communication technologies could amplify citizens' enthusiasm toward opinion expression.

Contrary to the notion that the Internet could bring empowerment to the public by offering a virtual community for active expression, communication, and interaction, most users do not participate very much. Instead, "lurkers"—people who consume information online but rarely or never contribute—are the majority

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in most online communities (Jones & Rafaeli, 1999; Nonnecke & Preece, 2000; Nonnecke, Preece, & Andrews, 2004). More than a decade ago, researchers found a high level of inequality in participation among users of online discussion forum (Schneider, 1996), yet, sadly, the situation remains largely the same in recent years (Himelboim, 2008). The 1% rule, a term coined by McConnell and Huba (2006), describes the phenomenon that people who create content online constitute ~1% of the people who use the Internet. Taking into consideration the fact that not all people are connected to the Internet, the scenario of participation could be gloomier.

The fact that a small percentage of people participate in online political conversation does not prevent researchers from exploring the democratizing impact of discussion communities on politics. Much research has been conducted on online discussion communities worldwide: in the United States (Davis, 2005; Freelon, 2010; Papacharissi, 2004; Rheingold, 1993; Schwartz, 1995), in Europe (Jouet, Vedel, & Comby, 2011; Wodak & Wright, 2006), in the Arab world (Nashmi, Cleary, Molleda, & McAdams, 2010), in the Greater China area (Fung, 2002; Zhou, Chan, & Peng, 2008), and elsewhere in Asia (Thammo, 2009). Most of these studies take a qualitative approach and rely on case studies to examine how people do with discussion forums, how the technology empowers them, and the meanings and implications of their use of the technology. Most of these inquiries stay away from the question "what drives participation." However, for those studies focusing on participation and taking a quantitative approach (Jones & Rafaeli, 1999; Nonnecke & Preece, 2000; Nonnecke et al., 2004), sensitivity to cultural, social, and political differences is lacking. To fill in this lacuna, the primary question we ask in the current study is: In addition to micro-psychological determinants, do macro-societal variables influence people's willingness to engage in online political discussion?

Predicting Conversation: Motivation, Information Consumption, and Context

Previous research has identified a host of factors that lead to silence or engagement in online communities. First, computer skills (Preece, Nonnecke, & Andrews, 2004) and motivations to learn about politics (Stromer-Galley, 2003) matter. Second, a minimum level of trust is needed for forum users to contribute content (Ridings,

Gefen & Arinze, 2006). Third, political communication researchers revealed a number of information consumption variables that are highly related to online political discussion: traditional news media exposure (Shah, Cho, Eveland, & Kwak, 2005), Internet news exposure (Nah, Veenstra, & Shah, 2006), and use of blogs (De Zuniga, Puig-I-Abril, & Rojas, 2009). Fourth, context also plays a role in predicting participation, including community size, forum traffic level (Nonnecke & Preece, 2000), and opinion climate (Price, Nir, & Cappella, 2006; Yun & Park, 2011).

Despite the diversity of the predictors that have been explored so far, the findings are somewhat limited in scope and predominantly micro-individualistic. The unit of analysis was exclusively individuals, with a few exceptions that examine the role of community features (Nonnecke & Preece, 2000). The frameworks invoked are largely social, psychological, and behavioral. Part of the overly focus on psychological attributes that contribute to online discussion stems from an underlying idealized assumption that human behavior in cyberspace defies regularities governed by social structural factors. It is true that the Internet may reduce or even overcome the temporal and geographic constraints and provides discussion spaces based on identical technologies for users across the globe; nevertheless, seeing the ways people behave in virtual communities as insulated from their cultural, social, and political configurations is untenable. Dahlgren (2005) considers that the impacts of the Internet on society depend on variations in democratic systems and cultures around the world and a simple and definitive conclusion will not suffice. Following this line of reasoning, we argue that citizens' involvement in political discussion in forums is not only a function of individual psychological factors but determined by macro-societal factors as well.

Beyond Individualistic Predictors: Culture, Value, and Political System

No direct empirical evidence has been documented as to how cultural, social, and political factors influence online discussion; however, a few previous studies hint at the role of contextual factors in determining cyber behavior and the consequence of Internet use. Analyzing data from 28 Asian and African countries, Nisbet and colleagues (2012) found that higher democracy rating amplifies the relationship between individual Internet use and citizen demand for democracy. Specific to studies of online political discussion, Robinson (2005) looked across multiple

countries and found that online message boards hosted on prominent newspapers in the United States, Brazil, and France exhibited significant cultural variation in terms of how users expressed themselves. Concerning political factors, studies conducted in countries where heavy and widespread Internet censorship is in place, for instance mainland China, revealed that online forum posting behavior was predicted by Internet use frequency, size of online friend network, and one's belief that the Internet could empower them politically (Shen, Wang, Guo, & Guo, 2009). Overall, it seems at least three sources of influence are at work: (a) cultural traditions that permeate people's everyday life, (b) the way people think and the values they cherish, and (c) the type of political institution that characterizes a given society.

National Culture

People from some cultures are more expressive than others. The argument that culture shapes individual behavior is not new. For instance, Weber (1958) sees economic behavior as a function of religious culture. One of the most comprehensive projects on cultural difference comes from Hofstede's research on dimensions of national culture (Hofstede, 2001; Hofstede, Hofstede, & Minkov, 2010). Among Hofstede's six cultural indicators, two stand out to be potentially impactful on expressive behaviors: Individualism and masculinity. First, people from individualistic cultures will be more likely to express their viewpoints than those from collectivistic cultures where expression is usually tampered by concerns such as seniority, face-saving, and cohesion of social groups. Second, masculinity, traits ascribed to males such as assertiveness and heroism, seems to be positively associated with opinion expression. Males are more interested in politics and more likely to participate in politics-related activities than females in general—as is demonstrated by many empirical studies (Verba, Burns, & Schlozman, 1997). Therefore, we propose:

> *H1a*: Discussion forums from societies high on individualism scale would be more willing to speak out (i.e., having a lower lurking percentage) than those of societies low on individualism scale (*The cultural difference hypothesis*).

> *H1b*: Discussion forums from societies high on masculinity scale would be more willing to speak out (i.e., having a lower lurking percentage) than those of

societies low on masculinity scale (*The cultural difference hypothesis*).

Value Orientation

Almond and Verba (1963) argued that a democracy requires a vibrant participating culture that goes with it. They found a stronger presence of participatory attitudes in Britain and the United States than in Germany, Italy, and Mexico. A dynamic civic culture has to be anchored in the values held by people. If a society values expression high, more active participation could be expected regardless of the forms and contexts of participation (i.e., offline and online). One dimension of post-materialist values is self-expression versus survival value orientation (Inglehart, 1997). Self-expression value orientation emphasizes freedom of speech, trusting, and more say in government, whereas survival value orientation concerns economic growth and maintaining social stability and order. Nations high on self-expression value scales include most English-speaking countries (e.g., the United States, Canada, Australia, and Britain) and Protestant European states (e.g., Denmark, Switzerland, and Sweden); in contrast, Confucius, Orthodox, and Islamic states are most low on self-expression scale (Inglehart & Welzel, 2010). In the case of people from societies where more emphasis is placed on expression, less lurking will be observed in political discussion forums. Thus, we propose:

> *H2*: Discussion forums from societies with high self-expression value would be more willing to speak out than those of societies with low self-expression value (*The value orientation hypothesis*).

Political System

In addition to culture and value orientations, political institutions might also play a role in determining the way Internet users behave. The main mechanism lies in the measures of Internet control that each country takes. Internet censorship is widely practiced for religious, political, and other concerns across the world. In general, democracies are far less likely to censor media, including the Internet, for political purposes (Whitten-Woodring, 2009). Censorship, implementation of real-name registration, and violation of users' rights create a chilling effect on the public, deterring people from actively participating in political discussions online. For

example, in China, prominent political bloggers could face imprisonment and house arrest, and a comment made on online forum could lead to a sentence. In extreme cases, the government would shut down the whole country's access to the Internet, as the Egypt government did in January 2011. Facing a hostile Internet environment, lurkers play a much lower stakes game than those who actively speak out in forums. When a hostile opinion climate emerges, adopting a simple loafing strategy is usually the case (Yun & Park, 2011). Given the aforementioned rationale, we propose:

> *H3*: Discussion forums from societies high on democratic index would be more willing to speak out than those of societies low on democratic index (*The political institution hypothesis*).

Methods

Data

The data for this study contain two parts: Political discussion forum data and country-level predictor data. The discussion forum data were collected in three steps. First, a list of countries with Internet access was obtained from a worldwide Internet statistics organization.[1] Second, a series of Google search was conducted through using a consistent Boolean search term "forums/bulletin boards" and "country name" in both English and languages used in those countries. A total of 75 countries or territories and their corresponding 103 forums were identified[2] (see Supplementary Appendix 1 for details). Among them, 47 countries have one forum and 28 countries have two forums. It is not our intention to claim we obtained an exhaustive list of all the popular forums, but data based on these forums give us enough variance to test our hypotheses. The list covers a diverse range of countries speaking 24 languages from Asia (27), America (11), Europe (23), Africa (11), and Oceania (3). The list contains 35 of the top 40 largest economies in the world. The list also has small economies such as Kyrgyzstan, Zimbabwe, Mali, and Trinidad and Tobago. Third, all threads in the "politics" sections[3] of the selected forums were downloaded for analysis. The crawling process spanned from 2012 to 2013. We used Easy Web Extract (http://webextract.net/), a Web scraping software for the crawling task. Most discussion forums use commonly available database

management systems (e.g., Dizcuz!, vBulletin, etc.), which are highly similar in terms of their structures. Each section of a forum contains a table that tabulates all posted threads. Each thread will be given a unique URL address. For each thread, the following information was retained: URL of the thread, title of the thread, time and dates of the thread, content of the thread, number of views (i.e., the number of users who clicked on the thread), number of replies the thread received (i.e., the number of users who leave comments), and authors' screen names. A total of 1,699,784 threads were captured.

Measure

Reply/view ratio

Not all online discussion receives the same amount of replies (Himelboim, Gleave, & Smith, 2009). Reply/view ratio for a thread is the key endogenous variable in the current study. We took the ratio of the number of views and the number of replies a thread received to quantify the percentage of Internet surfers who expressed their views after reading a thread. Conceptually, it speaks to the level of willingness to engage in political conversation and dialogue, or, reversely, the amount of lurking behavior in a forum. The possible range of reply/view ratio is from 0 to 1. If a thread receives no replies, the reply/view ratio for the thread will be 0 regardless of how many people read the thread. If every click onto a thread results in a new comment, the reply/view ratio of the thread will be 1. The purpose of using a ratio measure here is to control for topic popularity. The grand mean for this variable is 0.021 (SD = 0.042). On average, 2% of the clicks on a thread will result in a reply. The lowest country–level mean is 0.003 (Namibia) and the highest is 0.108 (Spain). Because a substantial amount of threads received no replies, the original distribution of reply/view ratio scale was highly skewed toward the 0 end (M = 0.02, SD = 0.04, skewness = 13.24, kurtosis = 255.44). Thus, we log–transformed this variable to ensure a normal distribution (M = –4.53, SD = 1.18, skewness = –0.25, kurtosis = 0.61).

National culture dimension

We included four Hofstede's cultural dimensions into our study: Power distance (PDI), individualism versus collectivism (IDV), masculinity versus femininity (MAS), and uncertainty avoidance (UAI). Data on these four dimensions were

harvested from Hofstede's official Web site (http://geert-hofstede.com/index.php). All measures are on a 1–120 scale. Society with a high PDI score tends to accept a hierarchical order and no justification is needed for such inequality; society with a high IDV score prefers the notion that individuals are responsible for themselves in a loosely knit social framework; society with a high MAS score emphasizes achievement and assertiveness more than cooperation and modesty; and society with a high UAI score exhibits low levels of tolerance toward future uncertainty and ambiguity. In our sample, the average scores for PDI, IDV, MAS, and UAI were 62.288 (SD = 22.471), 41.458 (SD = 23.588), 50.797 (SD = 15.416), and 66.271 (SD = 21.368), respectively.

Value orientation

In addition to national culture dimensions, two important value orientation indicators were included in the study: traditional/secular−rational values and survival/self-expression values (Inglehart & Welzel, 2005). Unlike Hofstede's cultural indicators, the two value orientation indicators help distinguish traditional societies from modernized secular societies. The data for the two value orientation dimensions were obtained from the World Value Survey Web site (http://www.worldvaluessurvey.org). We used summary statistics from the most recent wave of the survey fielded in 2006. Higher traditional/secular−rational value score means more secular−rational value orientation, whereas higher survival/self-expression value score means emphasis of self-expression and quality of life. In our sample, the average scores for the two indicators were −0.324 (SD = 0.934) and 0.056 (SD = 1.096), respectively.

Effective democracy

There are quite a few publicly available scoring systems aiming to characterize the levels of democracy across the globe (e.g., Freedom House's Freedom in the World index, the Democracy Index compiled by the Economist Intelligence Unit, the Polity IV scheme, etc.). However, formal democracy and effective democracy are different (Rose, 2009). Formal rights become effective only when they are protected by the rule of law. Inglehart and Welzel (2003) operationalized effective democracy as the interaction between formal democracy score and rule of law (effective democracy = formal democracy × rule of law) by using Freedom House's Freedom in the World index and World Bank's Rule of Law Index. Knutsen (2010) recently argued that

Freedom House's measure is not a pure measure of formally guaranteed rights and hence a better choice would be the Polity IV scheme, which measures democracy based on the formal system. Therefore, we operationalized effective democracy as the Polity IV score weighted by the Rule of Law Index (http://info.worldbank.org/governance/wgi/mc_countries.asp).The Polity IV Score uses a 21-point scale ranging from –10 (hereditary monarchy) to +10 (consolidated democracy). The mean of Polity IV score of our sample was 3.213 (SD = 4.175). Countries in our sample contain consolidated democracy such as Germany, incoherent authority regimes such as Singapore, and autocracies such as Saudi Arabia. This score was then weighted by the Rule of Law Index following Alexander and Welzel's formula (2011).[4]

Control variables

Three control variables were included: Gross domestic product per capita, Internet penetration, and the total number of threads from the selected forums. Data on gross domestic product per capita were obtained from the World Bank (M = 15,681 USD, SD = 16,268). Internet penetration data in 2012 were collected from Internet World Stats (M = 48.23, SD = 25.25). The country with the highest penetration rate in our study was Norway (95%), but there are other relatively less developed countries, for instance, Côte d'Ivoire (2.4%) and Guinea (1.5%). Total number of threads of the selected forums (M = 22,721, SD = 37,526) varies from 1,298 (Mali) to 270,574 (China). These three variables were controlled in our analysis because of their potential direct or indirect impacts on people's willingness to participate in online political discussions.

We used both ordinary least squares (OLS) regression and multilevel regression to test the hypotheses. The dependent variable for OLS regression analysis was the mean of all threads' reply/view ratios within a country's selected forum; the dependent variable for multilevel regression analysis was the reply/view ratio of a particular thread. The strength of MLM lies in its capability of taking into account internal homogeneity within groups. In our study, each thread nested under the same forum (i.e., country) could be influenced by the unique characteristics of a particular country. Hence, pooling all of threads together without discrimination will violate the assumption of independence for linear regression (Bliese & Hanges, 2004). A total of 1,699,784 threads were nested under 75 countries. Reply/view ratio is a Level-1 variable. All country-level predictors are Level-2 variables.

Results

Before testing the three hypotheses, we first estimated a null model to calculate intraclass correlation. A null model in multilevel analysis is similar to one-way analysis of variance, and intraclass correlation indicates the proportion of variance attributable to between-group differences. Result of estimating a null model showed that there was a statistically significant between-country variance in reply/view ratio. The intraclass correlation was .421. That is to say, ~42.1% of the variance in threads' reply/view ratios could be attributed to the country-level differences.

H1 and *H2* postulated that cultural differences such as individualism and masculinity, and the self-expression value orientation, would have an impact on people's willingness to engage in political discussions. Model 1 included both cultural and modernity indicators (Table 1). The result showed that none of the cultural indicators were significant predictors of reply/view ratio. Nevertheless, the self-expression value turned out to be a significant predictor. For societies that emphasize self-expression, threads in their discussion forums had a higher reply/view ratio (Figure 1).

Figure 1
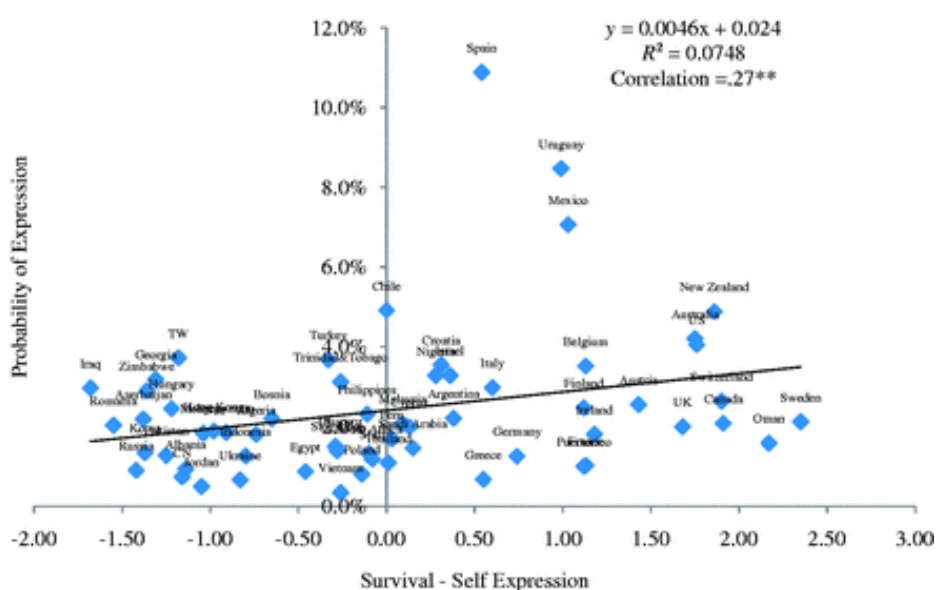
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Value orientation and online political discussion

Table 1

Multilevel Regression and Robust OLS Regression Predicting Online Political Discussion

	Null model	Model 1	Model 2	OLS Model 3
Intercept	−4.35** (.09)	−6.38** (1.33)	−7.14** (1.35)	−6.88** (1.32)
Control variables				$\Delta R^2 = 1.8\%$; $N = 75$
GDP per capita		.14 (.17)	.15 (.17)	.19 (.15)
Internet penetration		.11 (.90)	−.07 (.88)	−.27 (1.01)
No. of threads		.00 (.09)	.03 (.09)	0.02 (.08)
National cultural dimension				$\Delta R^2 = 8.0\%$; $N = 59$
PDI		.00 (.01)	.01 (.01)	.01 (.01)
IDV		−.00 (.01)	−.01 (.01)	−.01 (.01)
MAS		−.00 (.01)	.00 (.01)	−.00 (.00)
UAI		.01 (.00)	.01 (.01)	.01 (.00)
Value orientation				$\Delta R^2 = 17.6\%$; $N = 50$
Traditional-rational		−.33 (.13)	−.33 (.13)	−.31 (.16)
Survival-self expression		.28* (.14)	.27* (.13)	.34** (.12)
Political institution				$\Delta R^2 = 10.9\%$; $N = 47$
Effective democracy		− (−)	.08* (.04)	.08* (.03)
				Total $R^2 = 38.1\%$; $N = 48$

Random effect				

	Null model	Model 1	Model 2	OLS Model 3
Residual	.84** (.00)	.84** (.00)	.84** (.00)	
Intercept [Subject = Country*Forum]	.61** (.10)	.53** (.10)	.50** (.09)	
−2LL	3,346,543	3,346,569	3,346,570	

Note. **p < .01, *p < .05

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Model 2 included the political institution variable—democracy—into the equation. Interestingly, when democracy indicator was entered, democracy was found to be a significant predictor of reply/view ratio. For countries with higher democracy score, threads from their discussion forums tend to have higher reply/view ratios (Figure 2). Robust OLS regression produced similar results (Table 1, column 4). Control variables' roles were negligible and they explained <1.8% of the variance in reply/view ratio. The four cultural indicators explained ~8% of the variance. However, the two value orientation indicators combined explained ~17.6% and a single democracy score explained >10% of the variance. In sum, *H1* was not supported and *H2* and *H3* were well supported by our data.

Figure 2
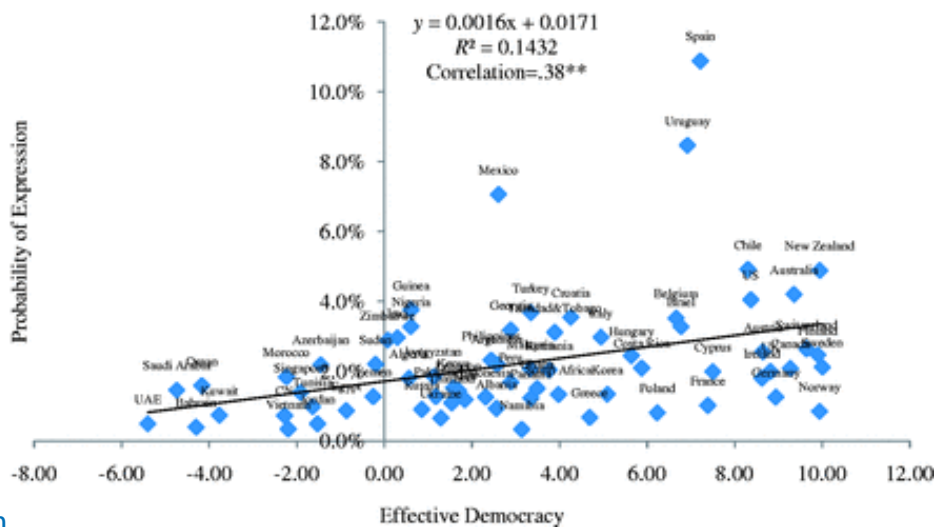
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Conclusions and Discussion

The unique contribution of this study lies in its attention to the macro-societal variables' influence on people's willingness to engage in online political discussion. Despite lurking in online communities being a global phenomenon, the degree to which lurking happens is not constant. We found a significant variation in levels of enthusiasm toward opinion expression online across the world. Forums with high reply/view ratios are those from countries such as Spain, Chile, Australia, and the United States, whereas Bahrain, Vietnam, Jordan, and China are examples of countries with low reply/view ratios—lots of people read posts but, proportionally, few of them express their own views.

Our findings suggest that willingness to engage in political conversation in online forums is not only influenced by micro-individualistic factors as was suggested by previous literature, but also determined by macro-societal variables. First, value orientation matters. Self-expression value orientation, a measure Inglehart (1997) used to characterize the level of modernity of a society, is positively related to active participation in discussion forums. Countries high on this scale are all English-speaking countries: New Zealand, Australia, the United States, Canada, and Britain. The mechanism of the link is relatively unambiguous: People who hold a set of attitudes that emphasize expression and civic rights over economic stability and social order are more willing to offer their viewpoints when exposed to a piece of political information or comment (attitude–behavior link). Beyond values, political institution also plays a prominent role. We find that democracy is a robust predictor of willingness to express one's ideas online—it explains >10% of the variance in our model. If we roughly categorize countries into democracies and non-democracies, 100 views result in 2.5 pieces of replies in democratic countries, but the same amount of views only result in one piece of reply in authoritative states.

Why are civic culture and political institution more important than national culture in predicting online expression? Democracy guarantees political rights, civic freedom, and a free press. These are the underpinning pillars that encourage and support citizens' self-expression values, which in turn could be translated into online action. Political structure could directly impact on people's online discussion

through curbing freedom of expression. For the countries with low reply/view ratios in our sample, many implement substantial to pervasive censorship of the Internet (e.g., Vietnam, China, Egypt before the Jasmine Revolution, etc.).

Our findings point to one crucial argument, that is, the impact of the Internet is contingent on political context. The liberalization and empowerment brought by the Internet that idealists foresee are not universal. Although new communication technologies allow easier access to information and provide better platforms for conversation, a vibrant civic culture and a supporting political institution are needed for catalyzing the influence of the Internet. Our finding echoes Groshek's (2009) and others' (Kalathil & Boas, 2003) view that the relationship between Internet adoption and democracy is most robust among countries that are already democratic, albeit overall, Internet penetration rate correlates with levels of democracy (Best & Wade, 2009).

Finally, caution must be applied regarding the limitations of our study. Like all other studies, our data contain noises of different sources. First, one to two forums might not be fully representative of all forums from a single country. Second, forums using a particular language could attract users from neighboring countries, thus muddling our data. Third, it is possible that a discussion thread might contain multiple replies from a single user and therefore the reply/view ratio could be inflated. Despite these limitations, our study documented the influence of macro-societal variables on Internet forum users' willingness to engage in political discussion. We only examined the situation of online bulletin boards. With the continued growth of social media use for political discussion and collective action, future studies could focus on individual behaviors on social media platforms such as Facebook and Twitter.

[1]   Internet World Stats, http://www.internetworldstats.com/list2.htm

[2]   For each country, we aimed to find two forums. Of 75 countries, 28 countries have two forums. For others, due to lack of relevant forums or technical reasons, only one forum was included.

[3]   If no "politics" sections were found (e.g., China), news or current affairs sections were used instead.

[4]   Alexander and Welzel (2011) transformed the World Bank's Rule of Law Index into a weighting factor ranging from 0 to 1 by using the following formula: rule of law weighting =

(COS-LOS)/(HOS-LOS), where COS is the observed score for a country; LOS and HOS indicate the lowest and highest observed scores for all countries.

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