

Does Cyber-Proximity Matter? Online Network Exposure and Cross-National Protest Diffusion: An Evidence from Facebook International Friendship Network and Arab Spring

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A majority of protest diffusion studies has been conducted within a single system, with few examining diffusion process in a cross-national context. Especially, along with the rise of online social network as well as abundant discussions about its role in mobilization on global scale, it is a timely call to quantitatively examine whether an exposure to other countries’ protests via online social networks increases the likelihood for a country to experience a protest event.

This position paper presents my on-going project on the effect of cyber-proximity on cross-system diffusion of collective actions. “System” refers to a collective unit of society or community. There has been social movement literature that looks at physical proximity effect on inter-city spillover of protests. This project is in line with these previous studies, yet by focusing on cyber-proximity (instead of physical proximity) and cross-national spillover (instead of inter-city spillover). The unit of analysis in system-level analysis is not a personal actor but a collective unit. In this study, it is each country.

In particular, this position paper responds to the workshop’s agenda by (1) exemplifying a way in which aggregated social media data may be used to predict an occurrence of collective phenomena and (2) proposing a systematic way to address cyber-proximity effect on diffusion of social phenomenon.

Project Description:

Social movement and protest scholarship have evolved by centering on four aspects of collective action processes. (1) Resource mobilization: how activists and organizations mobilize resources, accumulate them, and distribute them; (2) message framing – how collective action is framed, and who frame it; (3) a macro-assessment of social, political, cultural, and economic context in which protests occur.; (4) understanding temporal development of protest.

Protest diffusion studies and modeling fall in to the last category. To begin with, diffusion is generally defined as the spread of a practice from a source to an adopter. In collective action context, two notable diffusion models have been proposed –Threshold models and Event history diffusion models. Threshold models mainly aim to understand the internal growth pattern from a macro perspective, while Event history models aim to develop regression analysis by looking at various covariates effects on the likelihood of event outbreak.

Previous quantitative social movement scholarship has used both threshold and event history modeling. A majority of the relevant studies, however, are based on a single country context. Meanwhile, spatial protest diffusion across national boundaries has been mostly addressed from qualitative lens, partly due to difficulty in data collection. Subsequently, quantitative diffusion modeling has seldom employed to cross-national protest contexts. With the rise of data journalism projects and available social media data, it seems that researchers have greater opportunities to expand diffusion modeling on a cross-system scope.

In this study, I investigated cyber-proximity effect on cross-national protest diffusion. To do so, I borrowed “Personal Network Exposure” concept from one of the well-established, Valente’s (1995) network threshold model in diffusion literature, and developed a cyber-proximity-based exposure rate variable. This exposure variable is put into the event history modeling.

To empirically address a cyber-proximity effect on protest diffusion, I used Arab Spring data. Arab Spring has already become an “old” story, but it is a landmark democratic movement in the Middle Eastern and Northern African region during 2010-2011. Unfortunately, Arab Spring has not been very successfully translated into a smooth pathway to democracy. Nonetheless, it was noteworthy regarding the scale of mobilization, and cross-national spill over in the region. Moreover, the role of online networks has been extensively discussed from the lens of political opportunity, resource mobilization, and collective-action framing theories. Interestingly, there has not been a diffusion modeling study on Arab Spring. I collected the data from data journalism project from Guardians and Al-Jazeera for 16 countries during 55 weeks, and each country’s economic and political indicators from publicly available databanks. To measure cyber-proximity, the international friendship shares on Facebook, represented in an aggregated ranking form, was used. I used the Binary Time-Series-Cross-Section Analysis (BTSCS). It’s a special case of event history techniques ideally designed for international relational data with small sample of observed units with a large number of time points (Beck, Katz, & Tucker, 1998)

The results suggested the effect of cross-national exposures on a focal country’s protest event. The exposure effect seems more salient when modeled by using cyber-proximity rather than the entire geographic regional exposure. However, the cyber-proximity based exposure effect lasted only for a short period time –within the same weekly window –and thus better interpreted as a contemporaneous process. Based on the findings, I invite researchers to consider creative ways of using online aggregate data to represent cyber-proximity, and examine its effect –as a form of communication infrastructure –on diffusion of collective practice (of which “meme” could be one of the kinds).

Beck, N., Katz, J. N., & Tucker, R. (1998). Taking time seriously: Time-series-cross-section analysis with a binary dependent variable. *American Journal of Political Science*, 42(4)1260-1288.

Valente, T. W. (1995). *Network models of the diffusion of innovations* (Vol. 2, No. 2). Cresskill, NJ: Hampton Press.