

Political Protest Contagion Across Countries: Understanding the Effect of Geography, Language and the Media

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Abstract

Despite the overwhelming qualitative evidence indicating that large-scale protest movements often transcend national borders, there has been little empirical work offering a quantitative analysis of this phenomenon. Using a linear probability model of protest data from 27 European countries for a period of 15 years, this paper aims to shed some light on the mechanisms governing protest contagion. The statistical results suggest that a protest contagion effect exists between countries sharing a common border, but that large-scale protest are less likely to occur in a country if one is taking place in a country with which it shares a common language. Furthermore, this paper finds that the media exacerbates the effect of near-by countries' protests on any given country's probability of protest incidence. This paper provides a framework for the future empirical investigation of cross-border protest movements.

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Introduction

The events of recent decades, and more significantly events in the past three years, strongly suggest the existence of a contagion effect that causes protest movement to transcend national borders. Large-scale protest movements such as the Arab Spring, Anti-Austerity protests and the Colour Revolutions have each spanned many countries within a geographical area, sharing common cultural traits. Even though protests are generally directed at each respective nation's government, the movements share a set of common grievances and demands.

Despite the overwhelming qualitative evidence suggesting that a country is more likely to experience large-scale protests if these are occurring in 'near-by'¹ countries, there are no existing quantitative analyses of this particular phenomenon. The conditions under which

¹ The vague term 'near-by' is purposefully used, as it can refer to geographical or cultural proximity.

this contagion effect takes hold remain highly uncertain. Large-scale political protests can have profound economic, social and political consequences, and thus a deeper understanding of the mechanisms affecting their proliferation would be useful to policy makers and academics alike.

This paper aims to use empirical methods to determine the characteristics that significantly influence which countries are most likely to take part in a protest wave and to quantify the magnitude of this contagion effect. My investigation of the cross-border spread of political protests will proceed in four sections. The first section will provide a general theoretical overview of protest contagion mechanisms. In the second section, I will outline the model used to test the existence and size of the contagion of political protests. The third section describes the data, its limitations, and the methods I have employed to mitigate the effects of said limitations. The final section will present the results of this statistical analysis and their implications for the study of the spread of political protests.

I. Large-scale Political Protest Movements and their Proliferation

Countries within large geographical blocks often share many political and socio-economic characteristics. This may be due in part to the shared regional history, population flows facilitated by geographical proximity, and the ever-increasing interconnectedness of countries through trade and information flows. These features give rise to two main explanations for the observation of large-scale protests in different countries within a very short timespan.

The first is what I will call the organized contagion hypothesis, which stipulates that one country's protest movement is, in part, causally responsible for protest movements in another near-by country. Beissinger (2007) offers a compelling account of this phenomenon, attributing the diffusion of a political protest to the fact that once a large and successful protest movement occurs in one country, people in nearby countries that would like to protest against their respective regimes have an action 'blue-print' at their disposal. With every additional country that launches a successful protest movement, organizational processes and mobilization methods are perfected, and a protest movement becomes easier to set in motion in any given country (Beissinger 2007). This explanation is supported by Social Movement Theory, which states: "...people must be convinced that they could actually succeed if they started to protest" (Grünwald and Stefes 2012). "Success" in terms of political process is fairly ambiguous, as achieving success can refer to the mobilization of a large proportion of the population, the implementation of a change in policy or reforms demanded by protesters, or the overthrow of a regime in revolutionary contexts.

Regardless of the goal of the protest, the contagion theory suggests that protests will spread more readily to countries with common characteristics. These similarities minimize the degree to which mobilization tactics need to be adapted to fit the situation of a specific country. Under the contagion theory, protests will also spread more readily between countries that share important informational flows, such as shared media.

Often referred to as a social media or Facebook revolution, the Arab spring has highlighted the important role played by information technology and the media in the spread of political protests (Couts 2011). Grünwald and Stefes (2012) attribute a catalytic role to the media in their case study of the Egyptian revolution, stating: “with the aid of satellite-TV, new independent press, and the internet, the recurring episodes of protest [...] eroded the image of Mubarak’s invincibility and thus changed people’s perceptions about the possibility of political change”. This excerpt highlights the importance of the population believing that a level of success is possible through protest. Information about successful protests in near-by countries may change the expectation of success of a protest movement in one’s own country, and incite more people to protest, precipitating large-scale protest action.

Cross-border protest waves may also have less to do with contagion than with common pre-existing characteristics. This idea gives rise to an alternate explanation for the observation of multiple large-scale protest movements in near-by countries within a short time frame, which I will call “the similarity hypothesis”. These characteristics, which include type of regime, strength of economy and main industries, may largely determine the ways in which countries will respond to events that are international in scope. Such an event may negatively impact all countries that share these common characteristics. Resulting protest movements may appear in all affected countries almost simultaneously, not because they have been influenced by each other, but because of some undetected factor, which caused similar grievances in similar countries.

These two explanations are not necessarily mutually exclusive. However one effect may be much stronger than the other. The model outlined in the next section will attempt to analyze which of these explanations is dominant during the period of 1980 to 1995 in 27 European countries.

II. The Model

If there is a contagion effect of political protests, a relationship should be observed between protests occurring in a country’s immediate geographical neighbourhood, or what I will call its “cultural neighbourhood”, and the probability that protests are occurring in the country itself at any given time. However, if a contagion effect does exist, it is unlikely to be the main determining factor of a political protest occurring. Therefore, in order to test the existence of a contagion effect and to avoid omitted variable bias, my model attempts to take into account domestic factors that affect the onset of political protests. I have estimated the following models, one including a media and contagion interaction term, and one without.

1.
$$\text{Prob(Protest)}_{i,t} = \beta_0 + \beta_1 \text{protest}_{i,t-1} + \beta_3 \text{polity}_{i,t} + \beta_4 \text{polity}_{i,t}^2 + \beta_5 \text{election}_{i,t} + \beta_6 \text{regimeend}_{i,t} + \beta_7 \text{youthunemployment} + \beta_8 \text{contagion}_{i,t} + u_{i,t}$$

$$2. \quad \text{Prob(Protest)}_{i,t} = \gamma_0 + \gamma_1 \text{protest}_{i,t-1} + \gamma_2 \text{polity}_{i,t} + \gamma_3 \text{polity}_{i,t}^2 + \gamma_4 \text{election}_{i,t} + \beta_5 \text{regimeend}_{i,t} + \beta_6 \text{youthunemployment} + \gamma_7 \text{media} + \gamma_8 \text{contagion}_{i,t} + \gamma_9 \text{media} * \text{contagion} + \varepsilon_{i,t}$$

Explanatory Variables

A study by Ash (2011) is particularly useful for providing a framework including domestic factors to build my model for protest contagion. Ash constructs a model that estimates the effect of various factors influencing the likelihood of a protest occurring in any given month during the Colour Revolutions.

In this model, Ash (2011) finds that protests are most likely to erupt after a “triggering event,” an event capable of galvanizing the opposition, has taken place. Triggering events are a common concept within protest literature. According to Social Movement theory, such events indicate that the conditions for a mass protest movement are ripe (Grünwald and Stefes 2012). Beissinger (2007) identifies “stolen election” as an important element in protest mobilization within the Colour Revolutions at the turn of the century. In order to capture the effect of domestic political trigger events, my model includes variables for both elections (election) and regime changes (regimeend).

Unemployment is largely considered a contributing factor to the incidence of political protests. Unemployment is indicative of a poorly performing economy, which is often blamed on the policies of a particular regime. A negative change in people’s livelihood is thus expected to increase the incidence of political protests. Furthermore, low employment reduces the opportunity cost of time, and thus it becomes less costly for individuals to expend time manifesting in the streets. This further contributes to the intuition that increased unemployment is positively correlated to political protest incidence. Finally, there exists ample evidence that for any given protest, young people represent a large proportion of protestors. Combining these insights, there is a compelling case to expect a strong positive correlation between youth unemployment (youthunemployment) and political protest incidence.

I have included a polity index (polity), polity index squared (polity²) and lagged protest variable (protest_{t-1}) because these were all shown to be significant domestic predictors of political protest occurrence by Ash (2011). The polity index accounts for the degree of authoritarianism or democracy of a regime, and thus the media freedom variable is excluded from the first model, as it is by nature highly correlated to the Polity index.

Three definitions of contagion variables are used in turn in order to capture different types of protest proliferation. The first is the sum of countries in which a large-scale protest movement occurred in a given month bordering a given country. The second is the sum of countries in which large-scale protest movements occurred in a given month in countries sharing an official language (spoken by 20 percent or more of the population) with a given country. The third is a variant of the second, but instead counts countries sharing a common language spoken by nine percent or more of the population.

Confirming the Existence of a Contagion Effect

Using this model, I attempt to discover the following information:

1. Factors Influencing Probability of Simultaneous Protest Movements Within Countries

Qualitative analyses and anecdotal evidence point to the existence of protest waves that encompass many countries. However there remains uncertainty regarding whether this phenomenon is dependent on physical proximity or common cultural features. To answer this question, I use the three definitions of contagion variables outlined above. Comparing the magnitude and significance of the coefficients on the different variations of the contagion variable in the model provides insight as to whether shared culture or geographical proximity results in a higher probability that protests will occur simultaneously in any two countries.

2. Effect of Media Freedom on Probability of Protest Movements Spreading to a Near-by Country

The combined effect of the media and near-by protests is captured by the media-contagion interaction term in the second model. Higher media scores indicate lower levels of media freedom. Thus, if the media increases the probability of protest movements spreading to a nearby country, the coefficient on this term is expected to be negative. The coefficient on the contagion term represents the increase in the probability of a protest occurring when the media freedom score is zero, which can be interpreted as in the case of perfect information flow.

3. Relative Significance of Contagion Hypothesis and Similarity Hypothesis Regarding the Phenomenon of Large-Scale Protest Waves Transcending National Borders

While one country's protest movement may influence the population of near-by countries to start their own protest movement, simultaneous protests may be more significantly attributed to existing external factors that have a similar influence on the probability of protest occurring in near-by countries. These unobserved events are not captured in the model. However, if the inclusion of fixed effects results in the magnitude and significance of the contagion variable significantly decreasing, this would suggest that the similarity hypothesis may provide a better explanation regarding the phenomenon of large-scale protest movements frequently occurring in different countries in short time-periods.

III. Data

Precise political protest data is particularly difficult to obtain. Few attempts have been made to compile countrywide protest data over a long period of time. I chose to use

political protest data from the European Protest and Coercion Dataset (EPCD), because it represents an incredibly detailed compilation of protest-related action. The data is broken down by country and day, for 27 countries during the time period from 1980-1995.²

The EPCD presents information about date of protest, type of protest, target, type of participant, and number of participants. Since this model deals with the spread of political protests targeting a country's regime or demanding extensive policy changes, observations that did not meet these criteria were discarded. Furthermore, I chose to focus on large-scale action, which I define as movements mobilizing 0.75 percent of the population or more. The "number of protestors" value was divided by country population for the given year, obtained through Lahmeyer's "Populstat" website. All observations that did not meet the 0.75 percent participation cut-off were discarded. The data was then restructured in terms of binary variables, indicating whether or not one or more protests took place for every month of the relevant time period for every given country.

Since the testing of this model requires very specific data, explanatory variables are obtained from a variety of sources. The Polity score is available on a yearly basis, and is obtained from the Polity IV Project site. The regime change variable, "regimeend" in the model, is also obtained from the Polity IV Project. National election dates are obtained from Hyde and Marinov's (2012) National Elections Across Democracy and Autocracy dataset and compiled to create a binary variable indicating the occurrence of a national election in a given month. Yearly youth unemployment statistics are obtained from the "Labour & Social Protection" category of the World Bank database. There are fewer missing data points for female youth unemployment, and thus to minimize missing data, the log of female unemployment alone is included in the mode. The media freedom scores are adapted from the Freedom House index for the relevant time-period.³ Finally, the different monthly contagion variables are constructed using the data for protest mobilizing 0.75 percent of the population or more, and contiguity and shared language data found in the Mayer and Zingago Dyadic Geodist Dataset (2011).

Limitations

The dataset inherently limits the scope of the applicability of the results of this analysis, as it does not include protest data on all countries bordering or sharing a language with the countries included in the dataset. Furthermore, construction from various sources result in an unbalanced panel. This problem is exacerbated by the inclusion of Czechoslovakia, which broke up to form the Czech Republic and Slovakia, and the German Democratic Republic, which was reunited with the Federal Republic of Germany within the timeframe of this study.⁴

² For a full list of countries, see Appendix.

³ From 1980 to 1987, Freedom house used a Free, Partially Free and Not Free rating, divided by Print and Broadcast. From 1988 to 1995, it ceased reporting a separate rating for Print and Broadcast. For the purpose of this analysis, I gave ratings from one to three, with one corresponding to a free media. In the rare cases where print and broadcast received different ratings in the initial years, I took the mean of the two ratings, e.g., if print was free (1) and broadcast was partially free (2), the resulting rating was 1.5.

⁴ My approach was to code Czechoslovakia, the Czech Republic and Slovakia as three distinct states for which missing values were inputted for the years they did not exist. For the German case, I equated the

Additionally, the youth unemployment data is rather sparse, and there exists the possibility of a missing value bias. There was no available unemployment data for all countries with the lowest polity scores. This resulted in dropping several former socialist European countries from the dataset. However, this mitigated the problem of the division of Czechoslovakia and the reunification of East and West Germany, as these countries were also dropped.

Finally, due to the limited data and the nature of the question, the contagion variables are constructed using the same protest data as the dependent variable. This raises important endogeneity issues. These were addressed by employing instrumental variables for the contagion variables. In order to account for the limitations discussed above, two types of independent variables are used.⁵ The first are constructed using the log of the mean female unemployment rate in each country's 'contagion zone'.⁶ The second instrumental variable was constructed using the mean polity score in each country's contagion zone. Both models are tested using each set of independent variables and each definition of contagion. However, female youth unemployment is absent from both models in the set of regressions using the polity score independent variable in order to maximize the number observations.

IV. Results

The necessity of running two-stage least squares regression resulted in the use of a linear probability model to estimate both models. In order to test whether protests spread to near-by countries, or whether they occur at the same time due to external factors, both models were also estimated using fixed effects two-stage least squared regression. Table 1 presents the estimates of the regressions using the log of average youth female unemployment as an independent variable, with and without fixed effects.

Though the coefficient on bordering countries' protests is not significant, the sign is consistently positive for both models. The effect of bordering countries' protests is magnified by the addition of a media freedom index, and a media freedom and bordering countries' protest interaction term. The media and border protest interaction term is negative, which corresponds to the expectation that a higher media score (more tightly controlled media) decreases the likelihood of contagion from bordering countries protests. Running a fixed effects regression to estimate the probability of protest yields the same signs in the variables of interest, further increasing their magnitude, but also increasing the noise of the coefficients by raising the standard errors.

FRG with modern-day Germany, and inputted missing values for the GDR for the years following reunification.

⁵ Their construction was modeled after Pevehouse's (2002) IOScore variable which represents the "average democracy score of all members of a regional organization, except state *i*," for his study of the effect of International Organization membership on democratization.

⁶ Since contagion was tested using border, and two definitions of common language, 'contagion zone' refers to bordering countries, countries sharing an official language and countries sharing a language spoken by nine percent or more of the total population. A separate independent variable was constructed for each definition of contagion.

Table 1

	(1)	(2)	(3)	(4)
Lagged DV (n-1)	.073 (.048)	.037 (.044)	.066 (.049)	.042 (.037)
Election month	.007 (.016)	.001 (.018)	.003 (.017)	.000 (.018)
Regime End	-.019** (.006)	.001 (.065)	-.021*** (.006)	-.005 (.059)
Polity	-.059 (.057)	.657* (.361)	-.056 (.055)	.318 (.425)
Polity ²	.004 (.003)	-.037* (.020)	.003 (.003)	-.018 (.023)
Log Female Youth Unemployment	.017*** (.004)	.004 (.013)	.018*** (.005)	.006 (.011)
Media			.018 (.020)	.029 (.042)
Border protests (IV: Log Average Female Unemployment)	.099 (.108)	0.435 (.552)	.735 (.454)	1.00 (1.33)
Border protests*Media (IV: Log Average Female Unemployment*media)			-.568* (.333)	-.630 (.911)
Constant	.177 (.231)	-2.91* (1.57)	.163 (.214)	-1.41 (1.93)
Fixed Effects	No	Yes	No	Yes
Observations	2664	2664	2664	2664
F-value, first stage regression	7.71	4.29	8.05	4.34

Note: values in parentheses are standard errors⁷

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

⁷ Standard errors are robust for linear probability model, but are not robust for fixed effects panel regression due to statistical software limitations

Table 2 presents the results of the regressions using the definition of contagion associated with the spread of protests to countries that share a common language (spoken by over nine percent of the population) for the same set of countries, once again using the log of average youth female unemployment as an instrumental variable.

The results interestingly indicate that for the same set of countries, which excludes many former socialist countries and countries with very low polity scores, the effect of protests occurring in countries sharing a common language appears to decrease the probability of a protest taking place in a country during a given month. Once again, the addition of a media variable and a media interaction term significantly amplifies the magnitude of the contagion effect, this time in the negative direction. This essentially implies that if large protests are occurring in a country sharing a common language with other countries, the countries with freer media have a higher probability of not witnessing protests during that month. Once again, running a fixed effects regression does not appear to reverse the observed trend, and simply increases the noise of the coefficients.

These results suggest that the role played by the media should be reconsidered. This model does not include the angle of protest coverage by the media. Perhaps the media is capable of negatively influencing protest incidence by reporting on neighbouring protests from a negative angle. An explanation is still needed, however, for why the angle of protest coverage would differ depending on whether the protests are occurring in a neighbouring country or in one in which people speak a common language.

Table 3 presents the results of both models using the definition of contagion associated with the spread of protests to countries that share a common official language (spoken by over 20 percent of the population), this time using the average ‘linguistic neighbourhood’ polity score as an independent variable.

These statistical results are obtained using a larger number of observations, which include the highly authoritarian countries dropped in regressions, and includes a female youth unemployment variable. The coefficients on the variable for contagion from countries with a common official language are negative and significant at the five percent level. These results display further evidence of an amplifying media effect. However, in this case, running these models using a fixed effects regression increased the standard errors to the point of removing any significance from all variable coefficients.

This suggests another possible explanation for the negative sign of the contagion variable, and the positive sign of the interaction term. This set of regressions included observations from Czechoslovakia, the Czech Republic, the GDR, Poland and Hungary, all of which experienced increased media freedom around the same time as important regime changes occurred. Regime change, as denoted by regime end, is shown to be a significant indicator of protest incidence. If most of these protests occurred before the loosening of media restrictions, this could explain the significance of the inverse relationship between degree of media freedom and protest incidence.

Table 2

	(1)	(2)	(3)	(4)
Lagged DV (n-1)	.079 (.049)	.070*** (.021)	.080 (.049)	.077*** (.025)
Election month	.009 (.016)	.009 (.014)	.009 (.016)	.015 (.016)
Regime End	-.022*** (.005)	-.025 (.053)	-.020*** (.005)	-.017 (.059)
Polity	-.047 (.051)	.508* (.261)	-.045 (.048)	.302 (.347)
Polity ²	.003 (.003)	-.028* (.015)	.003 (.003)	-.017 (.019)
Log Female Youth Unemployment	.017*** (.005)	.008 (.010)	.017*** (.005)	.005 (.011)
Media			-.015 (.014)	-.046 (.053)
Common language protests (IV: Log Average Female Unemployment)	.042 (.120)	-.297 (.404)	-.181 (.437)	-2.29 (1.65)
Common language protests*Media (IV: Log Average Female Unemployment*media)			.213 (.360)	1.85 (1.31)
Constant	.137 (.216)	-2.26* (1.16)	.144 (.197)	-1.30 (1.58)
Fixed Effects Panel Regression	No	Yes	No	Yes
Observations	2664	2665	2666	2667
F-value, first stage regression	10.85	3.76	8.98	3.98

Note: values in parentheses are standard errors

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Table 3

	(1)	(2)
Lagged DV (n-1)	.138*** (.039)	.138*** (.039)
Election month	.021 (.016)	.022 (.016)
Regime End	.157* (.086)	.157* (.086)
Polity	.002*** (.000)	.001 (.001)
Polity ²	-.001*** (.000)	-.001*** (.000)
Media		-.007 (.013)
Official common language protests (IV: Average Polity Score)	-.116** (.057)	-.274** (.115)
Official common language protests*Media (IV: Average Polity Score*media)		.186** (.093)
Constant	.061*** (.012)	.081** (.038)
Fixed Effects Panel Regression	No	No
Observations	4521	4521
F-value, first stage regression	26.15	25.48

Note: values in parentheses are standard errors

*** $p \leq .01$

** $p \leq .05$

* $p \leq .10$

Result Interpretation

This statistical analysis presents weak evidence suggesting that between 1980 to 1995 in Europe, if contagion effects were present, they occurred between bordering countries and not between countries sharing cultural similarities such as a common language. Despite increasing the noise of the coefficients, controlling for fixed effects does not reduce the magnitude of contagion effects, whether they are positive or negative. This indicates that although country similarities may play a role in explaining cross-border protest waves, a country's population is partially induced to demonstrate or even to avoid demonstrating, based on the occurrence of near-by large-scale protests.

When considering all the results obtained, the magnifying effect of the media on contagion is the most consistent. Adding a media variable and a media-contagion interaction term almost always increases the absolute magnitude of the contagion term, and is accompanied by a coefficient of the opposite sign on the media-contagion term. This result reflects the economic intuition, as a media score of zero can essentially be interpreted as a case where there is perfect information flow regarding protests between countries. Assuming that a population's decision to engage in large-scale protest action is influenced by the incidence of protests in near-by countries, the more information it has, the stronger the effect of near-by protest incidence, whether positive or negative.

This, however, does not explain why bordering countries' protests may positively influence the likelihood of protest incidence, while shared language countries' protests appear to have a negative influence. This particular point requires a reconsideration of why one country's protest may affect another population's decision to protest. If the driving force behind protests is the protesters' belief that they can succeed, perhaps the protest incidence of near-by countries is less important than the outcome of the protest. This could suggest that the actual contagion effect is moderately to severely lagged, or that its existence is entirely dependent on the protesters' demands being met by the government of protesting countries. Alternatively, the media's angle of coverage may play an important role in determining whether near-by countries' protests exert a positive or a negative influence on contagion effect.

Interpretation Issues

Many of the coefficients motivating the previous interpretation are not significant because of high standard errors. This may be explained by endogeneity concerns facing the model, and the limitations posed by the available data. Although I have attempted to diminish the consequences of potential endogeneity using independent variables, these may be too weak to provide statistically reliable independent variables, or may fail to be uncorrelated with the error term. Female youth unemployment and polity scores both explain variance in the endogenous contagion variables; however, polity and female

youth unemployment are measured yearly while the contagion variables change monthly.⁸

One endogeneity concern not addressed is the presence of a lagged dependent variable in both models, which was assumed exogenous in computing the two-stage least squares estimation. This assumption was made in the interest of avoiding additional complications.

One way in which my analysis can be further fine-tuned is by modifying the large-scale protest threshold. The 0.75 percent of the population cut-off value for large-scale protests is somewhat arbitrary, and aims to capture only the largest protest movements in every country over the relevant time period. Small protest movements are generally less likely to involve grievances that affect a significant portion of the population, and therefore are likely to experience different spreading mechanisms than large protests. In the interest of avoiding possible confounding effects of smaller protest movements, the threshold was set relatively high. However, an interesting future task would be to experiment with different thresholds to observe any effects on the significance of the results.

Conclusion

The conclusions drawn from the results yielded by my model are likely limited by the scope and range of my data. The implications of contagion across borders and countries sharing a common language, and the effect of the media may not hold true in light of more recent protest data. The European case may not be applicable to protest behaviour in the rest of the world, as European countries have certain continent-specific characteristics that may affect the way that protest movements spread across countries. Furthermore, large advances in technology have been made since 1995, many of which have revolutionized the way the media operates and alternative forms of media have sprung up in countries where media freedom levels are particularly low. Changes in the mechanisms of information flow are also expected to have an effect on the role of the media plays in exacerbating the probability of protest contagion.

While the conclusions drawn from the statistical results obtained by my models may be limited in applicability, my analysis provides a framework for approaching the topic of protest movements transcending national borders. The models I have used provide a starting point for the analysis of the contagion effect, should new protest data become available. These models are also readily adaptable to different definitions of contagion. For example, a contagion variable can easily be created for countries sharing a common regime type, or countries having the same main export good, or a combination of many of these definitions. My two models can also be extended by adding a variable measuring the influence of successful protests, allowing for different definitions of success.

⁸ I attempted to create instrumental variables using elections or end regime, which vary on a monthly basis, however these yielded much lower F-values in the first stage-least squares regression, proving to be worse instruments than those using female youth unemployment or polity.

Further areas of interest include whether geographical proximity is always a better predictor of protest contagion than common language, and if protests in countries sharing a common language always reduce the probability of protest occurring in a given country. Whether widely applicable or not, the results of this analysis provide interesting questions for further investigation in the field of political protest research.

References

- Ash, Konstantin. 2011. "A Game-Theoretic Model for Protest in the Context of Post-Communism." *Communist and Post-Communist Studies* 44: 1-15.
- Beissinger, Mark R. 2007. "Structure and Example in Modular Political Phenomena: The Diffusion of Bulldozer/Rose/Orange/Tulip Revolutions." *Perspectives on Politics* 5(2): 259-276.
- Couts, Andrew. 2011. "Study Confirms Social Media's Revolutionary Role in Arab Spring." *Digital Trends: Upgrade Your Lifestyle*, September 13.
<http://www.digitaltrends.com/social-media/study-confirms-social-medias-revolutionary-role-in-arab-spring/>
- Grünwald, Sophie, and Christoph Stefes. 2012. "With or Without You - Opposition Leadership and Mass Contestation in Georgia 2003 and Egypt 2011." Accepted for Presentation at American Political Science Association Annual Meeting, New Orleans, LA.
- Hyde, Susan D. and Nikolay Marinov. 2012. "Which Elections Can be Lost?" *Political Analysis* 20 (2): 191-210. Last Updated November 18, 2011.
<http://pan.oxfordjournals.org/content/20/2/191>
- Mayer, Thierry and Soledad Zignago. 2011. "Notes on CEPII's Distances Measures: GeoDist Database." CEPII Working Paper 2011-25, Centre d'Etudes Prospectives et d'Informations Internationales.
- Pevehouse, Jon C. 2002. "Democracy from the Outside-In? International Organizations and Democratization." *International Organization* 56 (3): 515-549.

Appendix

Countries included in the dataset are coded as follows:

Country	Country ID
Albania	1
Austria	2
Belgium	3
Bulgaria	4
Cyprus	5
Czechoslovakia	6
Czech Republic	7
Denmark	8
Finland	9
France	10
Federal Republic of Germany/Germany	11
German Democratic Republic	12
Greece	13
Hungary	14
Ireland	15
Italy	16
Luxembourg	17
Netherlands	18
Norway	19
Poland	20
Portugal	21
Romania	22
Slovakia	23
Spain	24
Sweden	25
Switzerland	26
United Kingdom	27