Spatial Interdependence and State-Formation

*Democratic Diffusion and Length of Independence*

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Introduction

Most studies on democracy have focused on endogenous conditions as predictors of levels of democracy (e.g., Bollen 1983; Boix & Stokes 2003; Diamond 1992; Lipset 1959; 1994). These studies have explored the role of cultural, institutional, social and socioeconomic conditions (Coppedge 2013). Accordingly, it has been assumed that democratization results from domestic developments. Studies have therefore overlooked diffusion as a potential cause of democratization by supposing assuming that the critical conditions determining political regimes are domestic. However, this assumption about domestic conditions was challenged by Huntington (1991), who claimed that democratization occurs in waves and within regional clusters, which indicates that exogenous conditions also affect democratization.

Since the publication of Huntington (1991), studies on democratization have paid attention to waves of democratization, which has increased the interest in exogenous factors. Studies on diffusion find consistent evidence of spatial and temporal clustering of democratization (O’Loughlin et al. 1998; Starr 1991). Even when controlling for domestic conditions, researchers find strong correlations between the level of democracy in a country and average levels of democracy in the surrounding countries and region. Democracy is more likely to survive in a country in a more democratic region, but also as the total number of democracies rises. Studies have not only found that countries tend to change regimes to match the average degree of democracy in the contiguous region, but also that countries tend to follow global trends. Spatial proximity and networks (e.g., regional organizations) with democracies are robust predictors of democratization, and the effects of domestic conditions decline with the inclusion of diffusion indicators. The main conclusion is that the probability of democratic transition increases with the proportion of democratic neighbors (Brinks & Coppedge 2006; Gleditsch & Ward 2006; Pevehouse 2002; Przeworski et al. 2000; Starr & Lindborg 2003; Wejnert 2005; 2014). Studies have therefore stressed the important role played by diffusion in democratic transition and stability, which researchers focusing only on domestic conditions have overlooked.

In this article, we introduce length of independence – the number of years as independent state – as a condition that may modulate democratic diffusion. Based on the conventional
assumption that time is an important aspect in democratic diffusion, we formulate two opposite hypotheses that focus on the effects of length of independence on democratic diffusion. One hypothesis claims that the effects of democratic diffusion increase with length of independence, while the other asserts that length of independence decreases the effects of democratic diffusion. To test these expected tendencies empirically, we include length of independence as a moderating factor in our analyses of democratic diffusion. Although time is regarded as one basic element in diffusion (e.g., Brinks & Coppedge 2006; Gleditsch & Ward 2006; O’Loughlin et al. 1998; Rogers 1995; Wejnert 2014; Wellhofer 1989) and there is considerable variation in the length of independence among states (Bremer & Ghosn, 2003; Gleditsch 2004; Gleditsch & Ward, 1999; Griffiths & Butcher, 2013), there is, to our knowledge, no previous study that connects length of independence and democratic diffusion in this way. We also find empirical support for our assumptions about the interaction effects between length of independence and democratic diffusion. However, these interactions are more complex than the formulated hypotheses expect. The effects of length of independence on democratic diffusion vary according to geographic levels of diffusion and dependent variables. Nevertheless, these strong and complex effects highlight the importance of taking length of independence into account in analyses of democratic diffusion and democratization.

This article consists of five sections. Following the introduction, we present a theoretical model of democratic diffusion together with the two hypotheses about length of independence and democratic diffusion that are empirically tested in the article. In the third section, methodological issues are discussed. The empirical analyses are then presented in the fourth section, while the last section discusses the empirical results and the main contribution of this article: that length of independence affects democratic diffusion in ways that have not been recognized in previous studies.

A model of democratic diffusion

measured by a democratic index. In accordance with this notion of diffusion as the adoption of new ideas, innovation studies look for changes of political regimes in the countries. Their dependent variable is therefore neither the level of democracy nor the durability of democracy; instead, it is the changes of the political regimes in target countries from year to year. One problem with this construction of the dependent variable is that it excludes the initial establishment of political regimes, which occurs in new states at the time of independence and may offer another occasion when diffusion affects the choice of political regime in the same way as when a regime transforms. The dependent variable in our analyses refers, therefore, to the establishment or change of political regime during a specific year.

The material used to measure the dependent variable is available in the *Democracy and Dictatorship* database (Alvarez et al. 1996; Cheibub et al. 2010). Based on the minimal procedural aspects of democracy, this database offers the advantages of clear classification and precise measurement together with a clear and reproducible way of distinguishing democracies from dictatorships. Additionally, the database covers all countries from 1946 to 2008, which is more comprehensive for the period than the database offered by *Polity and Freedom House* (Munck 2009).¹ More importantly, the database includes information about initial regimes, democratic breakdowns and democratic transitions. Based on this information, we construct two variables. The first variable refers to the establishment of democratic regimes at the time of independence in new states or the transition from dictatorship to democracy (democratic transition), while the second variable refers to the establishment of dictatorial regimes at the time of independence in new states or the transition from democracy to dictatorship (democratic breakdown).

How innovations are *communicated through channels* is the second element of the diffusion model. Most studies about democratic diffusion do not directly test hypotheses about communication channels. However, hypotheses about spatial proximity and democratic diffusion are tested. These hypotheses claim that the probability of diffusion

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1 Polity excludes states with population less than 500,000 inhabitants, while Freedom House provides no information before 1972. For example, the use of Polity and Freedom House would exclude 39 and 49 percent of the states created since 1946, respectively.
from one country to another is enhanced by proximity, which is assumed to promote communications and interactions between countries (e.g., Brinks & Coppedge 2006; Doorenspleet 2005; Gleditsch & Ward 2006; Teorell 2009; Wejnert 2005; 2014). Related to these hypotheses about proximity are hypotheses about the density of democracies. The density of democracies refers to the proportion of democracies among countries within a unit (e.g., region or network). According to the hypotheses, in a unit with a higher density of democracies, the probability for democratic regimes is expected to increase. Together with the hypotheses about proximity, studies on democratic diffusion therefore expect that the probability for democratic transition or democratic breakdown is a function of both proximity to and density of democracies. These studies measure the share of democracies – or the average level of democracy within a unit – combined with the proximity between the country and the unit (density*proximity) to get an indication of the expected probability for democratic transition or democratic breakdown through diffusion (Brinks & Coppedge 2006; Doorenspleet 2005; Gleditsch & Ward 2006; Wejnert 2005; 2014).

Based on the hypotheses on proximity and democratic density, we use the classification of internationally recognized states in three hierarchically ordered levels that the United Nations (UN) suggests: global, regional and sub-regional levels. With this classification, the often-used level of neighborhood states is not included in the analyses; the sub-regional level is similar to the neighborhood level, but does not require that the countries share a contiguous border with each other. With the classification of states and materials from Democracy and Dictatorship, we calculate the share of democracy in geographical units on the three levels. This offers an opportunity to investigate whether the importance of proximity for diffusion is affected by length of independence – for example, whether diffusion in networks that are geographically near is more important at the time of independence, while the influence of more distant networks increases with length of independence.

The third component of the diffusion model refers to time. Studies of diffusion typically find that the temporal pattern of adoptions resembles an S-shaped curve, with few adopters in the earlier periods, a rapid increase in adoptions in the middle, and slow acceptance of the innovation by laggards (Gould 1969; Morrill et al. 1988; Rogers 1995).
However, the S-curve is most suitable for stable populations of cases (social systems). It does not adequately address situations with recognizable waves of innovation and reversals, such as those indicated by waves of democratization and formation of new states. In this case, the spatial context is constantly expanding since the natural limit of the bounded logistic curve keeps moving upward as more states are created. Thus, the slope of the S-curve of adoption corresponds quite poorly to the adoption of political regimes (Brinks & Cogedde 2006; Gleditsch & Ward 2006; O’Loughlin et al. 1998; Wejnert 2014; Wellhofer 1989). One critical issue for studies on democratic diffusion is, therefore, to estimate the rate of adoption, which would explain when democratic innovations are adopted by countries.

We assume that democratic diffusion is affected by length of independence, which is measured for each country and year as the number of years as an independent state. However, based on previous studies, two opposite hypotheses can be formulated about length of independence and democratic diffusion. First, studies on diffusion regard the expected rate of adoption – identified as the length of time required for a certain proportion of the members of a social system to adopt an innovation (Rogers 1995:22) as a function of time, whereby the rate of adoption is expected to be positively correlated with time. Diffusion requires time, because it takes time to communicate and adopt new ideas. Time is necessary for innovations to be adopted, because they are seldom adopted immediately (Brinks & Cogedde 2006; Gleditsch & Ward 2006; O’Loughlin et al. 1998; Rogers 1995; Wejnert 2014; Wellhofer 1989). The rate of adoption is thus expected to be lower among new states than other states. The effects of democratic diffusion are, therefore, expected to increase with length of independence. Second, at the time of independence, a new state needs to craft and modify institutions (Binder et al. 1971; Rost & Booth 2008; Fukuyama 2011; 2014; Pavkovic 2007; Rokkan 1999; Tilly 1992). The first period of independence may therefore offer a “policy window” in terms of political regime. According to Kingdom (1995), policy windows provide opportunities for launching new ideas that affect the political agenda and decision making. However, policy windows stay open for only short periods. If the actors miss these opportunities, they must wait for the next opportunity. Countries are hence expected to be more open to democratic diffusion during the early period of independence and more closed to diffusion later on. The length of independence is, therefore, a critical period for political
development in a new state and has lasting effects on political structures and processes (Capoccia & Kelemen 2007; Collier & Collier 1991; Mahoney 2000; 2001; Mahoney & Schensul 2006, Pierson 2004). *The effects of democratic diffusion are, consequently, expected to decrease with length of independence.*

The last element in the diffusion model is *social system.* Regarding democratic diffusion, the social systems are networks of countries. These networks are either geographical (e.g., regions) or functional (e.g., organizations). In geographic networks, proximity between countries is expected to promote diffusion, whereas in functional networks, countries that interact more frequently can be expected to have greater influence on each other (Brinks & Coppedge 2006; Doorenspleet 2005; Gleditsch & Ward 2006; Teorell 2009; Wejnert 2005; 2014; Wellhofer 1989). For example, studies have found that membership in certain regional organizations increases the probability of a regime change (Pevehouse 2002; Starr & Lindborg 2003; Wejnert 2005; 2014). Regardless of the approach, one critical task of any study about diffusion is, therefore, to identify relevant networks. Studies about democratic diffusion show that both geographical and functional networks are relevant. To measure democratic diffusion, studies therefore investigate the correlation between the average level of democracy within a network and democratic transitions or changes in the levels of democracy in states that belong to that network (e.g., Brinks & Coppedge 2006; Doorenspleet 2005; Gleditsch & Ward 2006; O’Loughlin et al. 1998; Teorell 2009; Wejnert 2005; 2014). Strong correlation is interpreted as the adoption of democratic ideas and hence democratic diffusion, which this article also applies. However, our analyses are restricted to geographical networks as the hypotheses about length of independence and democratic diffusion are assumed to have relevance only for geographical networks. In functional networks, aspects other than length of independence are expected to have significance; for example, length of membership may have higher relevance for democratic diffusion within organizations and networks than length of independence. In sum, we therefore investigate whether length of independence affects the correlation between the share of democracy among states in geographical networks on three levels (global, regional and sub-regional) and the establishment or transition of political regimes in all states during 1946–2008.
Domestic variables

Studies on democratic diffusion include not only diffusion variables, but also variables that control for domestic determinants. One reason for this is that domestic conditions that are expected to influence democracy can also be clustered geographically and countries may be affected by joint trends rather than democratic diffusion (e.g., Brinks & Coppedge 2006; Doornespleet 2005; Gleditsch & Ward 2006; Wejnert 2014). The analyses in this article include, therefore, seven variables that, according to previous studies, have significance for democratization (e.g., Barro 1999; Bermeo 2003; Coppedge 2012; Geddes 1999; Hadenius 1992; Lipset 1994; Sing 2010; Teorell 2011; Vanhanen 2003). First, socio-economic modernization is expected to promote democratization (Barro 1999, Boix & Stokes 2003; Burkhardt & Lewis-Beck 1994; Diamond 1992; Lipset 1959; Przeworski & Limongi 1997), although some studies claim that socio-economic modernization supports the consolidation of democratic regimes rather than democratization (Hadenius & Teorell 2005; Persson & Tabellini 2009; Przeworski et al. 2000). Based on these discussions, we include the conventional indicator of socio-economic modernization – GNP per capita – in our analyses. Second, one classic hypothesis in democratic studies claims that size of polity affects democratization. Small units are expected to offer better conditions for democratization than large ones (Anckar 2008; Dahl & Tuft 1973; Diamond 1999; Ott 2000). This hypothesis is tested in this article with population size as a measure of polity size.2 Third, one prominent idea about the relationship between religion and democracy is that a predominantly Muslim population complicates democratization, which has also received empirical support from the literature (Anckar 2011; Minkenberg 2007; Teorell 2011). To test this expectation, one variable is included that indicates if the population has a majority that is at least 60 percent Muslim.3 Fourth, ethnic fractionalization may also complicate democratization as it can lead to conflicts or hamper the development of national cohesion (Fearon & Latin 2003; Gurr & Harff 2000; Horowitz 1985). The degree of ethnic fractionalization.

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2 An alternative measure of polity size is area size. However, area size tends to be constant over time for states and strongly correlated to population size (r = 0.471; p = 0.000). To avoid problems with multicollinearity, we only include population size in our analyses.

3 The threshold of 60 percent is selected to indicate that there is a qualified majority of Muslims in the population, which means that other religions cannot form a majority or a minority that is close to a majority. Higher threshold levels, such as 66 percent or 70 percent, would only marginally affect the classification of the state. Most states have either a low (≤ 20 percent) or high (≥ 80 percent) level of Muslims.
which indicates the probability that two random persons within a country belong to
different ethnic groups, is therefore included as one control variable in the analyses.
Fifth, previous colonies are expected to have weaker conditions for democratization
than states without colonial heritage, but the conditions for democracy are expected to
be stronger in previous British colonies than in previous non-British colonies (Acemoglu
2001; Anckar 2008; Anckar & Anckar 1995; Bernhard et al. 2004; Bollen & Jackman
1985; Diamond 1999; Hadenius 1992; Lipset et al. 1993; Olsson 2009). One variable is
hence included where states without a colonial past are coded with a 0, previous British
colonies receive the value 0.5, and a state with a non-British colonial past is coded as 1.
Sixth, length of political regime is expected to prevent regime transition. One empirical
conclusion in previous studies is that the older a democracy is the less likely it is to
break down because stock of cultural, economic, human and political capital is
developed over time that supports the stability of the regime (Denk & Anckar 2014;
Geering et al. 2008; Kapstein & Converse 2008; Persson & Tabellini 2009). Based on this,
one variable that measures the length of political regime in years is included in the
analyses. This provides also an option to distinguish effects by length of independence
from length of political regime. Closely related to this is the seventh variable, length of
independence. A previous study has shown that length of independence affects the
stability of democratic regimes. With length of independence, stateness, institutional
capacity and routineness are expected to be strengthened, which positively affects the
probability of democratic stability (Denk & Anckar 2014). This makes it reasonable to
assume that the likelihood of regime failure decreases with increasing years as an
independent state. Length of independence is, therefore, included not only as a
moderating variable, but also as a control variable that may have direct effects on the
dependent variables. Furthermore, length of independence is included as a control
variable in analyses when the variable is used as part of an interaction variable
(Aneshensel 2013; Brambor et al. 2006).

Summary
In Figure 1, we summarize the model tested in this article. Two dependent variables are
used in the analyses. One variable refers to the establishment of or transition to a
democratic regime, while the other variable measures the establishment of or transition
to a dictatorial regime. Additionally, three independent variables are included that
measure the share of democracies among units on three levels (global, regional and sub-regional). These three variables are also used to construct interaction variables with length of independence, which are regarded as moderating variables on the relationship between the independent variables and dependent variables. Additionally, seven variables that refer to domestic conditions for political regimes are included as control variables: socio-economic modernization, polity size, religion, ethnic fractionalization, colonial heritage, length of political regime and length of independence.

**Figure 1:** Summary of theoretical model

![Summary of theoretical model diagram](image)

**Materials and method**

To empirically test the two hypotheses about length of independence and democratic diffusion based on the model in Figure 1, we constructed a dataset by merging variables from different databases. This dataset provides information about 202 internationally recognized states for each year during 1946–2008 (or from the year the state became independent). The variables included in the dataset are presented in the Appendix (Table A1) together with information about the original data sources.

As mentioned before, we use material from the database *Democracy and Dictatorship* (DD) for the classification of political regimes. The database provides two sets of
classifications. In the first set, the political regimes are classified as democratic or dictatorial regimes. Regimes are classified as democratic when they met all of four requirements: a) the chief executive is chosen by popular election or by a body that was popularly elected, b) the legislature is popularly elected, c) more than one party is competing in the elections and d) changes in power under electoral rules identical to those that brought the incumbent into office must have taken place. Political regimes that violated one or more of these criteria are classified as dictatorial regimes. In the second set of classifications, the democratic and dictatorial regimes are classified into six sub-forms of political regimes. Based on the relationship between the executive and the legislative assembly, the democratic regimes are classified as parliamentary, mixed (semi-presidential) or presidential democracies. The classification of the dictatorial regimes depends on who the effective head of government is. The dictatorial regimes are, therefore, classified as monarchic, military or civilian dictatorships (Cheibub et al. 2010). However, empirically testing our hypotheses about length of independence and democratic diffusion requires that only the first classification is used.

Additionally, the DD provides information about when political regimes change. One variable indicates the years when democratic transitions occur; i.e., when dictatorial regimes change to democratic regimes. Another variable offers information about democratic breakdowns; i.e., the years in which democratic regimes change to dictatorial regimes. The dependent variables in the analyses are constructed based on these two variables. However, the dependent variables also include information about the establishment of political regimes at the time of independence. The first dependent variable indicates, therefore, when a democratic regime was established at the time of independence or when a dictatorial regime changed to a democratic regime. Correspondingly, the second dependent variable indicates when a dictatorial regime was established at the time of independence or when a democratic regime changed to a dictatorial regime.

The use of DD not only has implications on how the dependent variables are constructed. It has also implication on how states and the year of their independence are identified, which affects how length of independence is measured. The database is organized according to the list of independent states that Correlates of War (COW)
provides, which is also used by other databases in comparative or international politics. According to COW, states are regarded as members of the international state system if they are members of the United Nations (UN) or have a population exceeding 500,000 inhabitants and diplomatic relations with at least two great powers (Russett, Singer & Small, 1968). These criteria used by COW have been criticized (Bennett & Zitomorsky, 1982; Bremer & Ghosn, 2003; Gleditsch 2004; Gleditsch & Ward, 1999; Griffiths & Butcher, 2013). The criticism has mostly concerned how COW identified states during the 1815–1918. For these years, COW applied criteria that have been accused of being excessively Eurocentric; which, according to critics, misses numerous independent states outside the European sphere and misdates the time of independence. However, these criticisms mainly concern historical periods (before 1946) that are not relevant to this article. Additionally, it would be difficult for this article to apply any of the alternative lists of independent states (e.g., Gleditsch 2004; Gleditsch & Ward 1999; Griffiths & Butcher, 2013) as few established databases of political regimes or domestic conditions are organized according to these lists.

The information from DD is also used to calculate the three diffusion variables. As mentioned before, these variables measure the share of democracies on different geographic levels: global, regional and sub-regional. On the global level, the variable indicates the share of democracies in the world in a specific year. Based on the geographic classifications of states provided by the UN (2013), the share of democracies is calculated at the regional and sub-regional levels. According to geographic classifications, the states are divided into five regions and 22 sub-regions, where the sub-regions are parts of a region. For each region and sub-region, the share of democracies is calculated for each year and country, which means that the share indicates the density of democracy surrounding the country in one specific year.

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5 The five regions are Africa, America, Asia, Europe, and Oceania. The sub-regions included are Australia and New Zealand, Caribbean, Central America, Central Asia, Eastern Africa, Eastern Asia, Eastern Europe, Melanesia, Micronesia, Middle Africa, Northern Africa, Northern America, Northern Europe, Polynesia, South America, South-Eastern Asia, Southern Africa, Southern Asia, Southern Europe, Western Africa, Western Asia and Western Europe. This classification is presented in more detail at http://unstats.un.org/unsd/methods/m49/m49.htm.
We use Cox regression models to analyze the collected material (Altman 1991; Boix-Steffenmeier & Bradford 2004; Darmofal 2009; Collett 2003; Machin 2006). The Cox regression model is a statistical technique for exploring how the risk (hazard) of an infrequent event occurring at a given time (dependent variable) is affected by covariates (independent variables). The model is, therefore, used with the purpose of estimating the effects of variables on the probability for events. For example, the probability of survival is frequently analyzed with Cox regression and the method is, therefore, also called survival analysis. Based on the information about the independent variables, the model estimates, with the hazard function, the probability that a case experiences an event (e.g., death or democratic diffusion) within a limited time interval (e.g., year) given that the case has survived up to the beginning of the time interval, which means that cases that did not survive during previous intervals are not included in the analyses for the present interval. For example, democratic systems that broke down in previous intervals are not included in the analyses of the present interval as it is only democratic systems that may break down.

The hazard function that is used to estimate the probability of an event during a time interval \( (t) \) is denoted by \( h(t; x_i) \). The function is specified with \( h(t; x_i) = h_0(t) \exp \left( \beta^*x_i \right) \), where \( t_i \) is time the event of unit \( i \), \( h_0 \) is the baseline hazard (the probability for the same event during the previous time interval), \( x_i \) is a vector of covariates, and \( \beta \) is a vector of parameters. The effects of the independent variables on the dependent variable are hence measured by proportional hazards. The Cox regression model is, therefore, also known as proportional hazards regression analysis. One assumption for this model is that there are constant relationships between the dependent variable and the independent variables between time intervals, which means that the hazard functions for two cases at any point in time are proportional. For example, if an individual has a risk of death at one point in time that is twice as high as that of another individual, the risk of death remains twice as high at all later points in time. However, Cox regression analysis offers options to also test models that assume that proportional hazards are not constant over

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6 Cox regression is considered a semi-parametric method because the baseline hazard function \((h_0(t))\) is not assumed to have one specified form. Different parameters are, hence, used for each unique survival time.

7 The assumption of proportional hazard may be tested with different methods (e.g., Kaplan-Meier survival curves, Grambsh-Therneau’s global test or Harrel’s rho test).
time. The proportional hazards are then assumed to be dependent upon time. To test this alternative assumption, the Cox model is extended with time-dependent covariates. Because our hypotheses claim that length of independence affects the effects of democratic diffusion, we use this option to test the assumption that the proportional hazards are different over time.

Interpreting the outcomes from Cox regression mainly involves examining the statistical significance and the regression coefficient for each independent variable. A positive coefficient ($\beta_l > 1$) indicates that the variable increases the hazard for the event, while a negative coefficient ($\beta_l < 1$) implies that the variable decreases the hazard for the event. The regression coefficient thus indicates the increase ($\beta_l > 1$) or decrease ($\beta_l < 1$) in the probability for an event (coded as 1). For example, if the regression coefficient is 0.9, it indicates that the probability for the event decreases by 10 percent for each value increase in the independent variable. In our analyses, positive coefficient for an interaction variable indicates that the effect of diffusion is increased by length of independence, while negative coefficient for an interaction variable indicates that length of independence decreases the effect of diffusion.

**Empirical analyses**

The collected material consists of information about 9093 country-year observations during 1946–2008. On average, the included states ($n = 202$) have been independent for 59.78 years, but there is significant variation in the length of independence, as the standard deviation is 58.34 years. In total, there are 5122 country-year observations in autocratic countries and 3971 country-year observations in democratic countries. There are 158 cases of establishment of or transition to a democratic regime, while there are 145 cases of establishment of or transition to a dictatorial regime.\(^8\)

To investigate the effect of length of independence on regime diffusion, we have analyzed five models for each dependent variable (Models 1-5 and Models 6-10), which are presented in Table 1. The first three of the five models for each dependent variable (Models 1–3 and Models 6–8) include an interaction variable together with length of

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\(^8\) Democratic regimes are established in 51 of the 158 cases, and there are 79 cases of establishment of dictatorial regimes.
independence and share of democracies on each level (global, regional and sub-regional level). In all models, the interaction variable is statistically significant. Additionally, all interaction variables indicate that the effect of diffusion decreases with length of independence. The analyses also indicate that the share of democracies on the sub-regional and regional levels increases the probability for the establishment of or transition to democracy (Models 1–2), but the share of democracy on a global level decreases the same probability (Model 3). The share of democracies on the regional and global levels decreases, likewise, the probability for the establishment of or transition to dictatorship (Model 7 and Model 8), while the share of democracy on the sub-regional level has no statistical significance (Model 6).

In the fourth models (Model 4 and Model 9), the variables on each level are integrated into one model. The interaction variables indicate that the effect of democratic diffusion on the regional and global level decreases with length of independence, while length of independence has no effect at the sub-regional diffusion (Model 4). However, when it comes to establishment of and transition to dictatorial regimes (Model 9), the effect of diffusion on the sub-regional and regional levels decreases with length of independence, but there is no statistically significant effect of length of independence on diffusion at the global level. Furthermore, the integrated models show that the share of democracies at the sub-regional and regional levels increase the probability for establishment of or transition to democracy (Model 4), and that the share of democracies at the regional level and the global level decreases the probability for establishment of or transition to dictatorship (Model 9). These results are according to expectations. However, two results are unexpected: the share of democracies at the global level decreases the probability for establishment of or transition to democracy (Model 4) and the share of democracies at the sub-regional level increases the probability for establishment of or transition to dictatorship (Model 9).
Table 1: Length of independence and democratic diffusion: establishment of or transition to democracy or dictatorship (Cox regression)

<table>
<thead>
<tr>
<th>Model</th>
<th>Establishment of or transition to democracy</th>
<th>Establishment of or transition to dictatorship</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Establishment of or transition to democracy</td>
<td>Establishment of or transition to dictatorship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Share of democracy in sub-region ( t-1 ) (log)</td>
<td>2.444 (0.000)</td>
<td>1.791 (0.000)</td>
<td>1.697 (0.002)</td>
</tr>
<tr>
<td>Share of democracy in region ( t-1 ) (log)</td>
<td>14.399 (0.000)</td>
<td>8.775 (0.000)</td>
<td>3.653 (0.001)</td>
</tr>
<tr>
<td>Share of democracy in the world ( t-1 ) (log)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
</tr>
<tr>
<td>Share of democracy in sub-region ( t-1 ) * Length of independence (log)</td>
<td>0.350 (0.000)</td>
<td>0.760 (0.223)</td>
<td>1.948 (0.038)</td>
</tr>
<tr>
<td>Share of democracy in region ( t-1 ) * Length of independence (log)</td>
<td>0.001 (0.000)</td>
<td>0.064 (0.002)</td>
<td>0.413 (0.475)</td>
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<tr>
<td>Share of democracy in the world ( t-1 ) * Length of independence (log)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
</tr>
<tr>
<td>BNP/capita (log)</td>
<td>0.651 (0.086)</td>
<td>0.651 (0.086)</td>
<td>0.651 (0.086)</td>
</tr>
<tr>
<td>Population (log)</td>
<td>1.163 (0.255)</td>
<td>1.163 (0.255)</td>
<td>1.163 (0.255)</td>
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<tr>
<td>Muslim dominance</td>
<td>0.581 (0.043)</td>
<td>0.581 (0.043)</td>
<td>0.581 (0.043)</td>
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<tr>
<td>Colonial heritage</td>
<td>1.363 (0.310)</td>
<td>1.363 (0.310)</td>
<td>1.363 (0.310)</td>
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<td>Ethnic fractionalization</td>
<td>0.783 (0.590)</td>
<td>0.783 (0.590)</td>
<td>0.783 (0.590)</td>
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<tr>
<td>Length of political regime (log)</td>
<td>0.170 (0.000)</td>
<td>0.170 (0.000)</td>
<td>0.170 (0.000)</td>
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<tr>
<td>Length of independence (log)</td>
<td>0.999 (0.547)</td>
<td>0.996 (0.050)</td>
<td>1.001 (0.558)</td>
</tr>
<tr>
<td>(-2) log likelihood (block)</td>
<td>2272.839</td>
<td>2272.839</td>
<td>2272.839</td>
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<tr>
<td>(-2) log likelihood (model)</td>
<td>2214.715</td>
<td>2182.672</td>
<td>2074.247</td>
</tr>
<tr>
<td>Significance</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Number of observations</td>
<td>5035</td>
<td>5035</td>
<td>5035</td>
</tr>
</tbody>
</table>
In the final models (Model 5 and Model 10), the control variables for domestic conditions are included. The outcomes of the two analyses are that five of the six interaction variables have statistically significant effects on regime diffusion. The effect of democratic diffusion at the sub-regional level increases with length of independence, while the effect of democratic diffusion at the global level decreases with length of independence (Model 5). Concerning the establishment of and transition to dictatorial regimes, the effect of diffusion at the sub-regional level and the global level decreases with length of independence at the same time as the effect of diffusion at the regional level increases with length of independence (Model 10). In all, Models 5 and 10 indicate that length of independence affects the effects of diffusion. However, the effects of length of independence on diffusion are different between the establishment of or transition to democratic regimes and dictatorial regimes, but also between diffusion at different levels.

Also according to Model 5 and Model 10, the share of democracies has an effect on the dependent variables, with the expectation of the share of democracies at the sub-regional level in Model 10. However, the effects are not always as expected. The share of democracies at the sub-regional level and regional level affects the probability for establishment of or transition to democracy as expected (positive effects). The share of democracies at the regional level and global level also has the expected effects on the probability for establishment of or transition to dictatorship (negative effects). The effects of the share of democracies at the global level have, however, negative effects on the probability for establishment of or transition to democracy (Model 5) and the share of democracies at the sub-regional level lacks statistical significance for the probability for establishment of or transition to democracy (Model 10). Although these results are not according to the hypotheses regarding democratic diffusion, the analyses indicate that diffusion in four of six aspects has expected effects on the independent variables.

The final models indicate, furthermore, that domestic conditions have an impact on the establishment of and transition to both democracy and autocracy. We note that Muslim dominance and length of political regime negatively affect the probability for democratization. Length of political regime also decreases the probability for dictatorial regime, together with length of independence and economic welfare (BNP per capita),
while population size, Muslim dominance and colonial heritage increase the probability for establishment or transition to a dictatorial regime. The effects of the statistically significant variables are, therefore, according to the expectations.

In sum, the analyses indicate that length of independence affects the effects of diffusion on the establishment of or transition to democratic regimes as well as dictatorial regimes. However, related to the two hypotheses about length of independence, there is no general pattern of effects. In some aspects, the diffusion is reinforced by length of independence, while length of independence decreases the effects of diffusion in other aspects. Additionally, these differences in effects do not follow any pattern; for example, the effects of length of independence are correlated with neither proximity (level of diffusion) nor mode of regime (democratic regime or dictatorial regime). We conclude, therefore, that length of independence affects the effects of diffusion, but that the effects vary between level and mode of regime (dependent variable).

The two dependent variables used in the previous analyses (Table 1) are constructed based on the assumption that regime diffusion affects the establishments and transitions of political regimes. However, the conventional approach is to assume that regime diffusion only affect the transitions of political regimes. Previous studies on democratic diffusion have, therefore, mainly analyzed the importance of diffusion to democratic transitions or democratic breakdowns. Therefore, Table 2 presents analyses that are analogous to the ones in Table 1, but with only democratic transition and democratic breakdown as dependent variables. When this conventional approach is applied, the outcomes of the analyses change. In these analyses, the significant results are more uniform. Length of independence decreases the effects of diffusion on both democratic transition (Models 11–14) and democratic breakdown (Models 16–19). However, in the last two models (Model 15 and Model 20), there are fewer statistically significant interaction variables than in the comparable models in Table 1. According to Model 15 and Model 20, only two of six interaction variables are statistically significant. Both of these variables are at the global level, which indicates that length of independence only

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9 In this study, we do not present analyses about the establishment of political regimes at the time of independence. The reason for this is that the main variable – length of independence – would be constant. However, Lehtinen (2014) shows that sub-regional diffusion has importance to the establishment of political regimes at the time of independence.
affects the effect of diffusion at the global level. Additionally, the analyses indicate that fewer of the diffusion variables – three of six variables – are statistically significant when the conventional approach is used than when the alternative approach is applied. For democratic breakdown, only one diffusion variable (at the global level) has statistical significance, while two diffusion variables – at the sub-regional and global level – are significant for democratic transition, but only one of these two variables (sub-regional level) has the expected effect on democratic transition (positive effect). To summarize, there is a difference when only democratic transition and democratic breakdown are used as dependent variables compared to when the establishment of political regimes at the time of independence is also included as an aspect of the dependent variables. Most crucial to this study is that the importance of length of independence on diffusion is different. When the conventional approach is applied, the analyses have therefore a tendency to underestimate the significance length of independence has on diffusion.
Table 2: Length of independence and democratic diffusion: transition to democracy or dictatorship (Cox regressions)

<table>
<thead>
<tr>
<th>Model</th>
<th>Transition to democracy</th>
<th>Transition to dictatorship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Share of democracy in sub-region (t-1) (log)</td>
<td>1.708 (0.004)</td>
<td>1.798 (0.008)</td>
</tr>
<tr>
<td>Share of democracy in region (t-1) (log)</td>
<td>2.586 (0.006)</td>
<td>2.326 (0.030)</td>
</tr>
<tr>
<td>Share of democracy in the world (t-1) (log)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
</tr>
<tr>
<td>Share of democracy in sub-region (t-1) * Length of independence (log)</td>
<td>0.520 (0.025)</td>
<td>1.177 (0.750)</td>
</tr>
<tr>
<td>Share of democracy in region (t-1) * Length of independence (log)</td>
<td>0.016 (0.001)</td>
<td>0.356 (0.424)</td>
</tr>
<tr>
<td>Share of democracy in the world (t-1) * Length of independence (log)</td>
<td>0.000 (0.000)</td>
<td>0.000 (0.000)</td>
</tr>
<tr>
<td>BNP/capita (log)</td>
<td>0.523 (0.037)</td>
<td>0.074 (0.000)</td>
</tr>
<tr>
<td>Population (log)</td>
<td>0.958 (0.794)</td>
<td>0.924 (0.703)</td>
</tr>
<tr>
<td>Muslim dominance</td>
<td>0.592 (0.091)</td>
<td>1.286 (0.495)</td>
</tr>
<tr>
<td>Colonial heritage</td>
<td>0.867 (0.653)</td>
<td>2.965 (0.013)</td>
</tr>
<tr>
<td>Ethnic fractionalization</td>
<td>0.992 (0.986)</td>
<td>1.673 (0.462)</td>
</tr>
<tr>
<td>Length of political regime (log)</td>
<td>0.248 (0.000)</td>
<td>0.849 (0.625)</td>
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<td>Length of independence (log)</td>
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<td>1.005 (0.000)</td>
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<tr>
<td>Number of observations</td>
<td>4896</td>
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</table>
**Conclusion and discussion**

The conclusion of the empirical analyses in the previous section is that length of independence moderates the effects of diffusion. According to the analyses, length of independence influences how diffusion affects both establishment of and transition to democracy and establishment of and transition to dictatorship. However, the effects of length of independence show no uniform pattern. In three of the six aspects, the effects are positive, which means that the effects increase with length of independence; but, in two aspects, the effects are negative, indicating that the effects of diffusion decrease with length of independence. Related to the two hypotheses about regime diffusion and length of independence that were formulated in the theoretical section, the empirical analyses provide empirical support for both hypotheses. In some aspects, length of independence promotes the effects of diffusion, while the effects of length of independence on diffusion are strongest during the first years of independence in other aspects.

The empirical results have implication for actors that have the ambition to influence political development through diffusion. The point in time when diffusion is most effective depends on the geographic level and the dependent variable. Actors at the sub-regional level that have the ambition to support establishment of or transition to democracy are most likely to be effective as the state gets older. However, actors with the same ambition at the global level are expected to be most effective during the first years of independence, while actors at the regional level do not need to take length of independence into account. If the ambition is to support a democratic regime and thus prevent establishment of or transition to a dictatorship, the situation is somewhat different. Diffusion at the global level is also expected to be most effective during the first years of independence with this ambition, but the same expectation holds for diffusion at the sub-regional level. Diffusion at the regional level with the ambition to prevent establishment of or transition to dictatorship is, meanwhile, likely to be effective with increasing length of independence. In sum, the results indicate that actors with ambition to affect political regimes through diffusion at different levels need to consider length of independence to be effective.
One result that stands out is the effect of diffusion at the global level. First, the analyses indicate that diffusion at the global level has negative effects on the probability for establishment of or transition to democracy, which is not the expected effect according to the hypotheses about democratic diffusion. Second, the analyses also indicate extremely strong interaction effects between diffusion at the global level and length of independence, as the regression coefficient is lower than 0.000. Both results need to be further evaluated in future studies. What is also interesting to note is that the effects are the same for establishment or transition to democracy and dictatorship. Another result that stands out is the lack of pattern in how length of independence affects diffusion. As mentioned before, the effects of length of independence on diffusion are different between geographic level and dependent variable. We have not had the opportunity within this study to analyze the reasons behind this lack of pattern. It is hence a question for future studies to examine not only how length of independence affects diffusion, but also to explore why the effects are different between geographic levels and dependent variables. Furthermore, our analyses are restricted to geographic networks at the global, regional and sub-regional networks and are based on the assumption about the importance of geographical proximity. Future studies could, hence, also test the effects of length of independence on diffusion within political, cultural or religious networks that are based on functional density. Additionally, all states in the networks are regarded as equally important for diffusion, but some states may be more important than others because of size, resources or status. Future studies could also, therefore, test this assumption of equal importance.

Our results support the basic assumption about democratic diffusion that claims that democracy is related to international conditions and not only affected by domestic conditions. Political processes are affected by processes and relations outside the state, which also means that political developments in states are not independent from each other. Instead, the results – that there are strong correlations between democratization and the density of democracies in surrounding states – indicate the existence of cross-national interdependence between political regimes. Political systems are open systems that are affected by other political systems but also affect other systems. As member of the international state-system, states affect and are affected by other states. The main contribution from this article is that the analyses indicate that this interdependence of
states is affected by the number of years a state has been a member of its international state-system. How long time states have been members of an international state-system affects the importance of international conditions, but not in a straight or simple way when it concerns democratic diffusion. Instead, length of independence affects the effects of democratic diffusion in a complex way.

References


Appendix (incomplete)

Table A1: List of variables and data sources

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<thead>
<tr>
<th>Variable</th>
<th>Data sources</th>
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<td>Country</td>
<td>Democracy &amp; Dictatorship</td>
</tr>
<tr>
<td>Year</td>
<td>Democracy &amp; Dictatorship</td>
</tr>
<tr>
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<td>Correlates of War</td>
</tr>
<tr>
<td>COW-number*Year</td>
<td>Democracy &amp; Dictatorship</td>
</tr>
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<td>Correlates of War</td>
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<td>Sub-region (UN-classification)</td>
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<td>Political regime</td>
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</tr>
<tr>
<td>Length of political regime</td>
<td>Democracy &amp; Dictatorship</td>
</tr>
<tr>
<td>Transition to democratic regime</td>
<td>Democracy &amp; Dictatorship</td>
</tr>
<tr>
<td>Transition to dictatorial regime</td>
<td>Democracy &amp; Dictatorship</td>
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<tr>
<td>Establishment of and transition to democratic regime</td>
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</tr>
<tr>
<td>Establishment of and transition to dictatorial regime</td>
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</tr>
<tr>
<td>Length of independence</td>
<td>Calculated from D&amp;D</td>
</tr>
<tr>
<td>Share of democracy in sub-region</td>
<td>Calculated from D&amp;D</td>
</tr>
<tr>
<td>Share of democracy in region</td>
<td>Calculated from D&amp;D</td>
</tr>
<tr>
<td>Share of democracy in the world</td>
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<td>BNP/capita (log)</td>
<td>ACLP World Bank Data</td>
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<td>Population (log)</td>
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<tr>
<td>Muslim dominance</td>
<td>The Quality of Government World Religion Data</td>
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<tr>
<td>Colonial heritage</td>
<td>CIA World Factbook</td>
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<td>Political Handbook of the World 2007</td>
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<td>The Quality of Government World Statesmen</td>
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<td>Ethnic fractionalization</td>
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<td>World Religion Data</td>
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**Table A2:** List of data sources and access to data base

**Data sources**

**Access to data base**

*ACLP – Democracy and Development*
sites.google.com/site/joseantoniocheibub/datasets/democracy-and-development-aclp

*CIA World Factbook*
www.cia.gov/library/publications/the-world-factbook

*Correlates of War*
www.correlatesofwar.org

*Democracy & Dictatorship*
sites.google.com/site/joseantoniocheibub/datasets

*Political Handbook of the World 2007*

*The Quality of Government*
www.qog.pol.gu.se

*World Bank Data*
http://data.worldbank.org/

*World Religion Data*
www.correlatesofwar.org/COW2%20Data/Religion/Religion.htm

*World Statesmen*
www.worldstatesmen.org