GEOGRAPHICAL PERSPECTIVES ON
INTERNATIONAL COOPERATION AND CONFLICT

BY

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DISSEPTION

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This study is a quantitative and spatial analysis of international cooperation and conflict. Using geographic concepts and spatial analysis, this research revisits two sets of existing research questions 1) UN general assembly voting patterns and 2) the escalation of territorial disputes. Political geographers have emphasized the need to look at political issues using key concepts developed in geography. In this dissertation the concepts of context and scale are applied to revisit existing studies. First, the support to the U.S. in UN general assembly votes is examined at a regional scale. Previous studies on UN voting did not take spatial dependency into consideration despite the common inclusion of spatial dependence in the study of electoral geography. The research design in this dissertation uses spatial regression models to explore the spatial context and the scale at which the politics of UN voting is constructed. Second, previous studies of territorial disputes are revisited through the lens of contextual analysis. Building on theoretical and methodological developments in political geography and peace science, local spatial statistics are implemented and the results are compared to those of previous global scale analysis. Geographically weighted regression was used to take spatial heterogeneity into consideration in the model. The results of the analysis show that a contextual understanding provides different empirical results from the dominant approach of political science that was designed to identify universal political processes. The dissertation draws the broad conclusions that the application of regional and local scale analysis significantly changes the explanations provided by global scale analysis. The application of spatial analysis can make it possible to incorporate geographical concepts into the study of international cooperation and conflict. This dissertation confirms that geographical concepts and spatial analysis are useful in providing a
better understanding international politics, one that focuses on contextualized rather than universal political processes.
To Yun-Jung, Seoyeon, and Christopher.
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Whenever I was down, physically and mentally, I remember the day of August 15, 2006 when I arrived here. Despite the fatigue from a deadly long flight over the Pacific Ocean, I could not sleep at all in the bus from O’Hare airport to Champaign. I was just too thrilled to be able to study at University of Illinois but nervous about the new environment, people, and most importantly my academic life here. I never forgot the endless corn field I gazed at with numerous thoughts, worries and hopes. The greenness I encountered was imprinted on my mind along with the feelings and hopes that attached to it. The green corn field was not a boring landscape, rather, it was something that reminded me of a fresh new start.

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CHAPTER 1

INTRODUCTION

This dissertation explores how geographical perspectives and spatial analytic techniques can advance the understanding of international cooperation and conflict. Despite the ambitious but somewhat broad purpose of the dissertation, the incorporation of a geographical perspective in the study of international cooperation and conflict is not a new or exclusive invention of mine. The study of international politics has a long history in geography (e.g., Gottmann, 1951; Hartshorne, 1954). Indeed, political geographers in the early twentieth century followed the classical geopolitical school and devoted themselves to the development of statecraft and national strategies to promote their native states within global politics (Demko and Wood, 1994). The approach of classical geopolitics, with its excessive environmentally deterministic and partisan agenda, has been criticized, especially by scholars of critical geopolitics. Critical geopolitics emerged as a new and dominant wave of geopolitics that debunked the myth that classical geopolitics is a spatial science able to investigate how the world works (Ó Tuathail, 1996). Also in the aftermath of the heyday of classical geopolitics, political geographers largely shunned geopolitics and intentionally focused on domestic issues to stay away from the allegation of geopoliticians being pseudo scientists. However, in the 1970’s and 1980’s international topics made a comeback in political geography, first through a world-systems perspective (Taylor, 1982 and 1999; Flint and Taylor, 2007) and then with the emergence of critical
and feminist geopolitics (Waterman, 1998; Ó Tuathail, 1996; Dalby and Ó Tuathail, 1996; Mamadouh and Dijkink, 2006).

However, to describe political geography as a discipline that mainly focuses on domestic politics is no longer accurate (Agnew and Corbridge, 1995). Contemporary political geography includes a wide range of topics, a variety of political agents, and diverse theoretical orientations (Cox, Murray, and Robinson, 2008). Any attempt to draw a line between domestic and international issues looks obsolete as a binary understanding of the global-local has been challenged by the identification of processes of “glocalization” (Swyngedouw, 1997; Agnew, 2005). Although the spectrum of the topics in political geography is wide, there is a lack of diversity in terms of the methodologies adopted (O’Loughlin, 2008). O’Loughlin noted there is a relatively small amount of political geography research that uses quantitative analysis or spatial analysis. This trend is a distinct aspect of political geography compared to its neighboring discipline of political science, as well as some other geographic sub-disciplines.

The dominance of qualitative methods in political geography may be partially explained by the history of political geography. Political geography was revived after the quantitative revolution in geography (Johnston and Sidaway, 2004) Although there have been a considerable amount of quantitative works in political geography, such as electoral geography and conflict studies, quantitative analysis has not been a dominant approach in political geography (Johnston, 1983; Taylor and Johnston, 1979; Pattie and Johnston, 2000; Johnston et al., 1997; O’Loughlin, 1986; Secor and O’Loughlin, 2005). Consequently,
political geography has been influenced by the counter-quantitative revolution trend rather than the quantitative revolution itself. For many political geographers, the axiom “words are more persuasive than numbers” was appealing (Longley and Batty, 1996: p.4). In addition, the critical nature of political geography, especially the strong emphasis on Marxism and post-structuralism, partially explains the dominance of qualitative research methods in political geography.

The application of geographical perspectives to understand international politics is not limited to a methodological contribution, such as spatial analysis and GIS. Key concepts in geography, such as space, place, territory, boundary, and scale have been used to widen and deepen our understanding of political issues (Dodds, 1994; Ward and Kirby, 1987; Agnew, 1994). In this dissertation, two main geographical concepts are emphasized and used to highlight the importance of geographical perspective to understand international politics. First of all, political geography has long been interested in the contextual understanding of political behaviors (Agnew, 1987, 1994 and 1996; O’Loughlin, 2000a; Flint, 1998 and 2001), which is a major difference between political geographers and political scientists. Geographers have emphasized a nuanced understanding of context, and political scientists have complained that the definition of context in geography may lead to problems in practical research (O’Loughlin, 2000a). The debate around the use of context in the study of electoral geography clearly shows the gap between political geography and political science (Agnew, 1996; King, 1996; O’Loughlin, 2000a). The debate is not only about methodological issues but concerns ontology too, in that the presence of contextual influences is questioned in political science (King, 1996).
Agnew (1996) argued that the existing understanding of context in political studies considers context as either a geographical territory, in many cases a nation-state, or the impact of social group membership, such as political parties and ethnic groups, on individual behavior. Thus, for political scientists the contextual impact can be investigated by simply looking at multiple spatial units (e.g., states) separately or finding dominant social groups or organizations in a given spatial unit (e.g., ethnic composition). Reviewing the understanding of context in existing studies, Agnew (1996) has criticized the limited understanding of context that sees it as a neutral space where political activities occur in a vacuum or as an incidental outcome that comes from the fact that the distribution of the characteristics among individuals and groups happens to be different over space. Instead of relying on an explanation that emphasizes a simple spatial distribution or compositional difference among areal units, Agnew emphasizes that human agents and their social context are integrated in particular ways in particular places. In his example of elections in Italy, key socio-economic variables have a different impact in different geographical settings on the support for political parties (Agnew, 1996). Hence, context is a process in which political agents and structure are interwoven in a place.

While geographers consider the contextual interactions as a political process, political scientists refute the idea that the political process is localized and not universal. In a response to Agnew, King (1996) argues that contextual effects are a manifestation of the variables that are not included in the model, or the choice of an areal unit of study that can create a Modifiable Areal Unit Problem (MAUP). Therefore, contextual effects can be
controlled by including pertinent variables to deal with a misspecified model and choosing
the right scale for the analysis to minimize the impact of MAUP. Also, King suggests that
too much focus on context may impair the ability of a study to provide a theoretical answer
to empirical questions and empirical answers to theoretical questions.

It is challenging to show the evidence of contextual effect as long as it is argued
that the contextual effect is an illusion made by a misspecified model (King, 1996).
However, the concept of place provides strong support for the justification of using
contextual understanding in political studies since a place refers to the context of events,
objects and actions (Entrikin, 1991). Compared to the conventional understanding of place
as a static and a fixed container (such as physical location or site) recent discussions of
place complement trends in understanding politics across the social sciences and
emphasize the dynamic aspect of place as a social process (Staeheli, 2008; Pred, 1984).
For example, Agnew defines a context as the place where the micro and macro processes
of social structuration are mediated (Agnew, 1996). Given that the concept of place
evolved from physical location or site to a space of daily life (Agnew, 1987) to a socially
created space by interactions and networks of people (Massey, 1994), place has become
seen as the spatial setting for social and political actions. Hence, when it comes to the
incorporation of the contextual understanding of political studies, what is needed is the
study of place not as a location or site but as a social setting and process constructed by
multiple political actors. In this sense, the contextual understanding of political studies
requires the study of an identity-of-place rather than an identity-in-place (Staeheli, 2008).
While the concept of context has been contested between political geographers and political scientists, there has been a parallel vigorous debate about scale among geographers, political scientists, and sociologists (Brenner, 2001; Howitt, 2008). The discussion on scale is not only about a matter of finding an appropriate spatial unit for research. The recent discussion on a scale is very much influenced by the notion of the social construction of scale, and has been driven by the belief that globalization has dramatically changed or highlighted the spatiality of politics. There is no taken for granted level of scale for the analysis of politics and economics. Global process and local response cannot be examined as separate or binary entities (Swyngedouw, 1997; Delaney and Leitner, 1997).

The development of scale as a theoretical concept is indebted to two figures, Peter Taylor and Neil Smith (Howitt, 2008; Taylor, 1982 and 1999; Smith, 1984 and 1989). Taylor suggested a model of three key scales in political geography. According to Taylor, world-economy, nation-state and locality are the focal scales to investigate the political processes of the capitalist world-economy. Smith (1984) highlighted urban, regional, national, and global scales. Both Taylor and Smith emphasized that politics should be understood in the context partially defined by a hierarchy of geographical scales (Flint and Taylor, 2007). Although both Taylor and Smith did not exclude the fact that scale is socially created and redefined, the categories they provided are somewhat fixed (Howitt, 2008). Compared to the work of Taylor and Smith, recent works have put more emphasis on the social construction of scale (Brenner, 2001; Marston, 2000; Swyngedouw, 1997) to show that the scale at which particular political activities are organized are not
predetermined and fixed. In this sense, politics does not simply occur at a particular scale. Rather, politics is a process that involves a struggle to define a scale of politics and a relationship between scales (Cox, 1998). Political agents try to mobilize powers or resources to (re)define the spatial boundary of politics (Jonas, 1994). According to recent discussion, scale is not a self-evident or pre-given platform for geographical processes (Brenner, 2001). Therefore, it is a worthwhile project to examine the previous level of analysis or scale that may have become axiomatic in a body of literature, as is done in this dissertation with regard to territorial disputes. Changing the scale of analysis may uncover the operation of different political processes within different spatial settings.

Despite the relative dearth of studies employing quantitative methods in political geography, the use of spatial analysis has enabled scholars to incorporate geographical concepts into political studies (O’Loughlin and Anselin, 1991; Starr, 1992; O’Loughlin, 1984). There are a few foundational works that investigated how the geographical perspective can be incorporated into understanding the processes of international cooperation and conflict. These achievements built upon the development of spatial statistical techniques that interrogated the use of conventional statistical methods on spatial data, such as Cliff and Ord (1973), Anselin (1988 and 1995), Griffith (1987), Haining (1990), and Tobler (1989). The early progress in the development of spatial statistics provided a good opportunity for political geographers to investigate political processes from a geographic perspective using rigorous and innovative statistical techniques. An example of key studies that built upon the integration of spatial analysis and political geography include the identification of spatial dependence and regional context in the
pattern of cooperation and competition relationships among African states (O’Loughlin and Anselin, 1991), neighborhood effects and spatial diffusion processes in elections (Flint, 2001; Johnston, 1983; Pattie and Johnston, 2000; Archer et al., 1985), the diffusion of democracy at the global scale (O’Loughlin et al., 1998), and quantitative studies in disaggregated local scale analyses of civil war (O’Loughlin and Raleigh, 2008; Buhaug and Rød, 2006).

Several points have been emphasized in the application of spatial analysis in political geography. Most of all, the characteristics of spatial data made it indispensable to use spatial analysis (Haining, 1990; O’Sullivan and Unwin, 2003). The presence of spatial autocorrelation in spatial data, the modifiable areal unit problem to find the most appropriate scale of analysis, the ecological fallacy from aggregated data, the nonuniformity of space, and edge effects require spatial analysis rather than conventional statistical methods (O’Sullivan and Unwin, 2003). Also, the development of statistical techniques that accommodate spatial autocorrelation in a model enabled scholars to examine spatial dependency and spatial neighborhood impact as a substantive effect rather than just a statistical nuisance. Particular techniques that have been adopted in the analysis of international cooperation and conflict include spatial regression models (Anselin, 1998; Ward and Gleditsch, 2008), local statistics within spatial heterogeneity (Fotheringham, Brunsdon, and Charlton, 2002; Anselin, 1995), and point pattern analysis (Kulldorff, 1997; Braithwaite, 2005).
Before the development of spatial analytic techniques, the presence of spatial autocorrelation had been considered as a barrier or nuisance in quantitative analysis. The presence of spatial autocorrelation, however, was not a problem in spatial data but a manifestation of geographic concepts, such as context and scale. Spatial autocorrelation analysis enabled scholars to incorporate spatial autocorrelation into the model as a form of spatial interaction and neighborhood impact as evidence of geographic or contextual influences. In other words, geographers identified spatial autocorrelation as “the core of geography” (Tobler, 1970). While spatial autocorrelation, neighborhood effect, spatial dependency, spatial clustering and spatial heterogeneity have been key concepts employed to examine spatial processes in political geography, the development of GIS enabled researchers to use spatial data with ease. With the development of GIS, geographers were able to handle large spatial datasets. Especially, the integration of spatial techniques in GIS and the development of spatial analysis programs with a user-friendly interface opened new possibilities for researchers to explore, analyze, and visualize spatial data with a few clicks (ESRI, 2004; Anselin, Syabri, and Kho, 2006; Fotheringham, Brunsdon, and Charlton, 2002).

While quantitative research on international politics has not been a popular approach in geography, the developments in spatial analysis and GIS have been widely incorporated in political science. Given the general trend of neglecting space and place in social science, the emerging attention to the notion of geography in political science was surprising (Starr, 2003). In particular, the concept of space, epitomized as distance and contiguity, was widely accepted by the group of scholars who pursue the systemic
understanding of war and peace and define themselves as ‘peace scientists’. For the systemic understanding of international conflict, a large amount of resources has been devoted to creating datasets; such as the Correlates of War (Singer and Small, 1994), Militarized Interstate Disputes (Ghosn, Palmer and Bremer, 2004), armed conflict dataset (Gleditsch et al., 2002), formal security alliance (Gibler and Sarkees, 2004; Leeds et al., 2002), international trade data (Barbieri, Keshk and Pollins, 2008; Gleditsch, 2002b), and the location of insurgency (Raleigh et al., 2010; Raleigh et al., 2006). The empirical study of war is largely indebted to the establishment of these datasets.

The established conflict databases, however, have a problematic aspect when used for statistical analysis. In many cases, the conflict databases are constructed in monadic (e.g., capabilities of states) or dyadic (e.g., alliance and trade relationships) form. The dyadic nature of the datasets is reasonable because the dyadic relationship is the building block of relationships in a bigger picture, in other words, a network structure of multiple dependencies or interactions. When it comes to research design, specifically a large N regression type analysis using dyadic data has some problems because the research design assumes independence among dyads and stationarity in time and space, which is quite different from reality. To deal with this problem, some scholars have used a subset of the data, identified as politically relevant dyads (Lemke and Reed, 2001; Maoz and Russett, 1993; Bennett and Stam, 2000; Bremer, 1992).

Instead of interrogating data, geographers have tried to deal with the spatial dependence and non-stationarity problems by using spatial analyses. Spatial regression
models have been widely used in the study of international relations to integrate spatial
dependence into the model and tackle the assumption of independence between
observations (O’Loughlin and Anselin, 1991; Gleditsch, 2002a; Gleditsch and Ward, 2000;
Cho, 2003). Spatial regression techniques are effective in dealing with the problem of how
spatial data violates the assumption of independence between observations and are able to
incorporate spatial interaction and dependency into regression models.

However, there are criticisms of state level analyses that go beyond the nature of
spatial data. Specifically, state-level data and analysis cannot accurately represent the
variations in relationships at sub-national or local levels. The problems of existing
aggregated state level datasets have provoked researchers to investigate civil war from a
local perspective using localized data. For example, many scholars have focused on the
fact that civil war rarely covers the whole territory of a state, even though many established
conflict datasets are built on a state level (Buhaug and Rød, 2006; Buhaug and Lujala,
2005; O’Loughlin and Wittmer, 2011; Raleigh et al., 2010). The question about the
appropriate scale of analysis facilitated a new research trend in the study of civil war.
Instead of relying on existing data, some scholars created local level data, such as terrain,
land cover, topography, and the presence of natural resources to correlate with local
insurgency events (Raleigh et al., 2006; Buhaug and Lujala, 2006; Gilmore et al., 2005;
Lujala, Rød and Thieme, 2007). These local approaches to the understanding of civil war
were facilitated by the application of GIS technology (Goodchild and Janelle, 2010).
While the local approach to civil war focused on the local determinants of civil war, point
pattern and spatial clustering analysis of inter-state conflict investigated the geography of
conflict-prone regions (Braithwaite, 2005; Gleditsch, 2002a). The findings of the spatial clustering analyses confirm that there is a strong regional pattern of persistent conflict.

As addressed above, the application of the geographical perspective and spatial analysis towards the understanding of international cooperation and conflict is a recent trend in peace science. Based upon existing studies, I want to advance the knowledge of international cooperation and conflict. Especially, I will focus on a critique of the way geography has been understood and operationalized in the study of peace science. To illustrate that critique I will apply local and regional analyses to studies that have focused on processes of cooperation and conflict using a global scale of analysis using conventional non-spatial techniques.

This dissertation is composed of two separate studies that are standalone essays. Hence, the organization of this dissertation is different from a conventional dissertation style. Chapter Two presents an analysis of the voting patterns in UN General Assembly as an indicator of the process of U.S. hegemony. Although it is generally agreed that U.S. hegemony has been declining, there are few studies looking at U.S. hegemony as the ability to define and lead the political agenda of the international community since the end of the Cold War. Given that the notion of hegemony as consensus building is different from a focus on material power (Agnew, 2006; Allen, 2003), the support to the U.S. from the international community in the UN General Assembly is an appropriate means to examine U.S. hegemony. Every UN member state officially expresses its opinion on global issues and the results of votes have been recorded. There are many studies
investigating the voting pattern and the factors that are related to the support for the U.S. stance in the UN. However, the regional pattern of this voting behavior has not been addressed explicitly. Specifically, previous studies explaining regional variations in the support for the U.S. in the UN General Assembly have been reductionist; they explain any regional variation by including more variables (King, 1996). In other words, the approach has been that the low support for the U.S. in a region can be successfully explained by political and economic variables, such as economic affluence, political regime, and trade or security relationships with the U.S. In contrast my analysis interrogates whether regional variations result from the economic and political characteristics of a state or whether there is a spatial impact even after controlling for key variables. Second, a spatial regression model is applied to the study of the UN General Assembly voting pattern to deal with spatial dependence in the data and identify any regional influence. The method used in this study has an advantage over a conventional treatment of geography as a dummy variable which adopts the assumption that states in a region would share a similarity in supporting the U.S. in the UN when the explanatory variables are controlled for.

Chapter Three investigates the localized or regional pattern of the underlying causes of territorial disputes. As far as I know, this study is the first attempt to use spatial analysis in the study of territorial disputes. The rationale of applying local spatial analysis is based on the old thesis of political geography that universality in political processes should not be assumed (Sidaway, 2008). To date, a considerable amount of studies have found that territorial disputes are the single most important factor leading states into war (Vasquez and Henehan, 2001; Vasquez, 1993 and 1995; Hensel, 2000; Vasquez and
Valeriano, 2008). Studies have identified the key determinants of the onset, escalation, and resolution of territorial disputes (Huth, 1996; Vasquez, 1993; Senese, 2005; Senese and Vasquez, 2003). Despite these achievements, one of the limitations in the previous studies is that the explanations are based on a universal or global model to understand territorial disputes. Inspired by the recent development in civil war studies employing local scale analysis with GIS technology (O’Loughlin and Wittmer, 2011), a contextual understanding of territory (Murphy, 2002), and point pattern analysis using geographical coordinates for conflicts (Braithwaite, 2005), the escalation of territorial disputes is examined at a local scale. To accomplish this goal, geographically weighted regression was applied. The dataset used in Paul Huth’s (1996) book *Standing Your Ground* was converted into a spatial data format by geocoding. The result of a geographically weighted regression using a local sample and giving more weight to observations close to a given location is presented and juxtaposed to a conventional non-spatial model. Also, the regional associations between the escalation of territorial disputes and key explanatory variables are examined.

In sum, this dissertation examines previous research on the support for the hegemonic country from global society and the escalation of territorial disputes using geographical concepts and methodologies. Specifically, I focus on the two related concepts of context and scale. To date, studies on the processes of hegemony and territorial disputes have been largely dependent on research at a global scale, which assumes that one universal model can be applied everywhere. However, there are a few reasons to look at the hegemonic process and escalation of territorial disputes at different
scales. As to the support to the U.S. in the UN, the significant level of regional variations needs further research to see if the regional differences or divergence, currently explained by political-economic factors, should be supplemented by a spatial story. Using a spatial regression model along with univariate spatial analysis and exploratory spatial analysis, this study examines the spatiality in the process of U.S. hegemony. In addition, this study interrogates at what scales the spatial processes are constructed.

To date, quantitative studies of territorial disputes have used conventional large-N type regression analysis to find a universal theory. Thus, the question of why some territorial disputes escalate to more serious political and military conflicts while some territorial claims do not escalate has been answered by the variables of the characteristics of disputed territory, international and domestic settings. However, recent study on territorial claims in political geography and the emphasis on local scale analysis with disaggregated data suggest that a contextual understanding of territorial dispute should be further investigated. Using geographically weighted regression, this study is designed to examine whether the concept of context can be incorporated into the study of territorial conflict. In other words, this study investigates whether the explanation provided by a global scale analysis change significantly when considering a regional scale and in what way the existing explanation has a different impact in different regions.
CHAPTER 2

HEGEMONIC HUCKSTERING:
THE POLITICAL GEOGRAPHY OF UN GENERAL ASSEMBLY
VOTING ALIGNMENT WITH THE UNITED STATES

This chapter is a version of an essay, co-authored with my Ph.D. adviser Colin Flint, submitted to the journal *Political Geography*. In this chapter, the voting patterns in the UN General Assembly are analyzed and interpreted as an indicator of the process of U.S. hegemony. The examination of states’ voting alignment with the U.S. in the UN General Assembly confirms that the declining trend in support for the U.S. identified by previous analyses started shortly after the end of the Cold War and has continued. However, the decline in support for the hegemonic state is not a universal process. There is a considerable level of regional differences and clustering patterns, which suggests that there is strong spatial dependence behind the geographical clustering. To investigate the regional clustering pattern in the process of U.S. hegemony a spatial regression model is used to incorporate spatial dependence into the analysis and further explore processes of regionalization.

INTRODUCTION

On October 27, 2010 the United Nations General Assembly (UNGA) approved a resolution that condemned the U.S. economic embargo on Cuba and proposed lifting it. The resolution was endorsed by 187 favorable votes out of 192 member states. Only two
member states, the United States and Israel, voted against the resolution and three small states (Marshall Islands, Palau, and Micronesia) abstained. The United States was almost entirely isolated in its stance on this issue within the international community. The situation in the 1990s was quite different. The resolution to seek elimination of the Cuban embargo was initially tabled in 1992. Only three countries supported the U.S. position while 59 states cast affirmative votes. Although the number of countries supporting the U.S. has barely changed from 1992 to 2010 the crucial difference lies in the presence of 71 abstentions in 1992: Some South American countries and traditional U.S. allies, such as the United Kingdom and Japan, showed lukewarm support for the U.S. by casting abstentions. Since 1992, the number of abstentions has gradually decreased and more countries have adopted a position asking the U.S. to abolish the sanctions.

The Cuban embargo example is just one snapshot in what has been identified as a process of the U.S. becoming increasingly isolated in multilateral organizations (Huntington, 1999). If such a trend exists it is one expression of the many related claims that the United States is losing its hegemonic status. However, as Voeten (2004) has stressed many substantive and theoretically interesting questions remain unanswered when it comes to the trajectory of the U.S.’s relative power. Over the past few years there have been a variety of perspectives on the fate of U.S. hegemony: the U.S. will decline as over great powers of the have (Kennedy, 1987), it will not follow such precedents with a bit of reorientation and adjustment (Ikenbery, 2001; Nye 2011), or the U.S will lead a transformation of the way the global system is governed (Hardt and Negri, 2001), to name but a few. Support for the U.S. in international organizations is one manifestation of its
relative power. Though there is anecdotal evidence that the U.S. is encountering difficulties in garnering support from other states in international institutions there is a need for systematic analysis over time to see if this is actually the case and, if so, how it may relate to broader processes of hegemonic decline.

Our focus upon role of the U.S. in international institutions examines U.S. hegemony as the ability to define and lead the political agenda of the international community. Instead of looking at U.S. power and foreign policy in terms of indices of national military and economic power or the content of foreign policy proclamations, we can capture an element of the dynamics U.S. hegemonic influence by analyzing its ability to create constructive political relations with other countries. Such an emphasis on a relational sense of power (Allen, 2003) engages the agenda setting or political leadership meaning of hegemony (Agnew, 2005; Taylor, 1999). We believe that agenda setting is the product of what Nye (2011) has called smart power, the combination of hard and soft power. To study trends in the tendency of other states to follow the agenda of the U.S. requires a dataset that is consistent and accurate over time. The UNGA voting record qualifies. It is a reflection of states’ official opinions on global issues and includes almost all sovereign states since the end of World War II. To date UNGA voting records have been used for analyzing key questions in global politics; such as voting bloc formation in the UNGA and conflicting interests between the U.S. and other states (Voeten, 2000 and 2004; Russett, 1966; Kim and Russett, 1996; Holloway, 1990; Holloway and Tomlinson, 1995), and U.S. influence in the UNGA (Wang, 1999; Dreher and Sturm, 2006, Dreher, Nunnenkamp and Thiele, 2008). We build upon these studies to explore how support for
U.S. interests that have been introduced in the UNGA may be interpreted as a proxy for examining trends in the strength and geographical extent of U.S. hegemonic influence, and investigate which mechanisms of U.S. power tend to elicit more support from member states. In addition, we raise questions about traditional research methods used to analyze UN voting by illustrating the value and necessity of incorporating a geographic perspective using spatial analysis.

The next section discusses previous studies of U.S. hegemony and UNGA voting; including different perspectives on hegemony, the processes of hegemony, and the achievements of foundational studies on UNGA voting. This discussion will address the relationship between the decline of U.S. hegemony and UNGA voting including; how the politics of UNGA have been organized and developed, how the U.S. considers the UNGA an important arena to elicit global support. In the following section we stipulate our research design, and the data and spatial analysis methods are introduced. Despite the insights of existing studies of UNGA voting they have consistently paid little attention to how the political decisions and influence of the hegemonic state are mediated in space. In the analysis section, we present a series of results. First, we look at the issues that have been considered to be exceptionally important to the U.S. The issue areas and regional foci are explored. Second, the changes in voting alignment with the U.S. are addressed with descriptive statistics and maps. Finally, multivariate analysis and spatial analysis results are presented to investigate the factors associated with voting alignment with the U.S., with special emphasis upon the changes in behavior spanning the presidencies of George H.W. and George W. Bush. By including spatial effects into our analysis we find
different results from those of models without treatment on the spatiality of the data. In conclusion, we summarize the results and discuss the implications of this paper for understanding U.S. hegemony and UNGA voting.

HEGEMONY AFTER THE COLD WAR

Hegemony as “empire light?”

We use the word hegemony in our analysis of the role of the U.S. in the world because the power of the U.S. is not based on extension of formal sovereignty over foreign territories, with a few exceptions. Rather, the U.S. has exercised power through the construction of shared interests and ideology, manifest in various international institutions, and not only by its sheer military capability (Agnew, 2005; Ikenberry, 2001; Nye, 1990 and 2011). Although the presence of U.S. military bases in foreign soil (Johnson, 2000) and the recent U.S. military operations in Iraq and Afghanistan has been seen by some as a sign that the U.S. is moving toward empire such a conclusion is controversial (Agnew, 2005; Ferguson, 2003). The particular perspective on hegemony we adopt is directly rooted in Gramsci’s writings; whereby hegemony is understood as consensual or ideological domination (Cox, 1983; Robinson, 2005). Gramsci’s theory of ideological class-based power is appropriated as the presence of a dominant agenda setting state that frames the content and assumptions of global politics and has the ability to persuade other states to assimilate their own norms and values to the world-view of the hegemon (İşeri, 2007; Germain and Kenny, 1998). In international politics, hegemony can be understood
as the interplay between ideas, material capabilities, and their operation within international organizations (Cox, 1983). A hegemonic state seeks to build a global political order, which guarantees its self-interest, through the consenting actions of other states. For instance, the U.S. “contained” the Soviet Union not just through military power but by producing a cultural consensus across capitalist countries and the Western world regarding the meaning and necessity of “containment” (İşeri, 2007: 6).

We build upon Agnew’s (2005) description of American hegemony as a form of social domination, or more precisely the way that the U.S. has achieved its political goals in global society without resort to military power. Agnew’s political economy approach focuses upon U.S. hegemony as the expansion of American market-place capitalism under the auspice of U.S. government. Agnew’s ideas are complemented by Taylor’s (1999) focus on the hegemonic global political project that constructs an understanding of modernity that others have to follow. Although Agnew and Taylor rightly point out that the ideology imposed by the hegemonic state is hard to reject resistance is still possible. In other words, compliance by the global community is never complete. Hence, there is a need to measure the influence of U.S. hegemony in terms of its ability to impose its political will upon others (Nye, 2011). To analyze hegemony as the ability to make other states do what the dominant power wants through agenda setting rather than force we have to examine the affect of hegemonic power. With this approach we are not interested in the anatomy of the hegemonic power itself (or indices of its capability). Rather we envision understanding hegemony through the responses followed by the exercise of hegemonic power, or the relational expressions of power (Allen, 2003). UNGA politics is a key arena
in the exercise of hegemonic power. It is the venue for international politics through the use of co-optive power, such as persuasion, shared interests and benefits, seduction and negotiation (Keohane, 1976; Nye, 1990; Agnew, 2005; Allen 2003; Voeten, 2000).

The UN General Assembly and the process of political influence

The UNGA is the main deliberative, policymaking, and representative organ of the United Nations. Every year from September to December several hundreds of resolutions are discussed and enacted in the UNGA. Decisions on important questions, such as those on peace and security, admission of new members, and budgetary matters, require a two-thirds majority. Decisions on other questions are made by a simple majority (Marín-Bosch, 1987). Due to its unique role as a political body that encompasses all the states in the world and an arena for global political debate, the UNGA has been an important research topic. Keohane (1967) proposed three main research questions; the results of deliberations in the UNGA, voting patterns, and the political processes which produce both the results and the voting patterns. Since Russett’s (1966) foundational empirical work, a considerable amount of studies has been devoted to answering these questions.

Studies of voting patterns in the UNGA have been implemented with two research foci. First, scholars have been interested in identifying states’ preferences in international politics (Gartzke, 2006; Voeten, 2004; Kim and Russett, 1996). Second, there have been methodological questions regarding the best way of analyzing the essential interests of a state. Although one single vote may be the consequences of many factors, analysis on
many accumulated votes can reveal the interests and preferences of states (Marín-Bosch, 1987). IR scholarship has sought explanation of states’ behavior in terms of power, preferences, or perceptions (Gartzke, 2006). Major-Minor power status, economic prosperity, political regime, and security concerns in terms of formal alliances have been suggested as expressions of a state’s interests (Moravcsik, 1997; Maoz et al., 2006; Signorino and Ritter, 1999; Bueno de Mesquita, 1981). In fact some scholars have argued that UNGA voting is one of the best proxies for identifying states’ interests and preferences (Gartzke, 2006; Voeten, 2000 and 2004; Kim and Russett, 1996). Voeten clearly addresses the importance of the study of UNGA voting: “Analyzing voting behavior in the UNGA is in some ways problematic, but it is one of the best ways to systematically explore the questions that the current debate about the structure of post-Cold War global politics tends to address in an ad hoc fashion” (2000: 186).

The criticisms of UNGA voting studies cite the dominance of powerful countries, especially the members of the Security Council. The UNGA is cast as a symbolic institution or even, harshly, as an arena for “cheap talk” (Czaika, 2008: 187). Despite the limitations and the caveats, however, it is hard to ignore the fact that for over sixty years most of the independent states have been meeting annually in the UNGA to discuss and vote upon various international issues. Furthermore, some of these votes have dealt with key questions; such as the Universal Declaration of Human Rights, the Declaration on the Granting of Independence to Colonial Countries and Peoples, the Partition of Palestine, and the recognition of the People’s Republic of China as the only legitimate representative of China in the UN (Marín-Bosch, 1987).
Keohane (1967) identified three processes by which member states exert their political influence within the UNGA. First, and most importantly, states use their political influence to elicit a more favorable outcome for themselves. Focusing upon power as the consequences of exercised capability (Allen, 2003) helps identify persuasion, pressure, threats, and moral stature as tools for political influence (Keohane, 1967). The maneuvering of powerful states is not the only way of influencing other member states. Group formation and coalitions in the UNGA create spaces in which less powerful states with similar interests and preferences can increase their voting power in the assembly. Second, states may influence the playing field by proposing agendas and consequent negotiation over issues. Lastly, as with other formal procedures in voting, each state has equal influence in casting one vote. An opportunity to cast a pivotal vote allows a state to fulfill its own interests regardless of its relative power capability.

The operation of political processes in the UNGA illustrates that the exercise of hegemonic power is a relational effect of social interaction (Allen, 2003). One aspect of U.S. hegemony is its exercise of persuasion, pressure, threats, and even seduction in the politics of UNGA voting. This is especially clear when it is recognized that the U.S. actively campaigns to secure votes on particular issues. Analyzing the tendency of states to comply with these campaigns is a measure of U.S. hegemony in terms of the consequence of diplomatic interactions: Does the U.S. have the combination of hard and soft power to create consensus for its political agenda? To answer this question we will
build upon previous studies of UNGA voting to help us identify relevant mechanisms of power used to construct political consensus.

Post Cold War politics in the UNGA

There is a general agreement that during the Cold War the bipolar international system was mirrored in the UNGA in “East” and “West” blocs (Kim and Russett, 1996; Holloway and Tomlinson, 1995). Although more blocs can be identified depending upon the granularity of clustering sought, Western capitalist countries within NATO and communist bloc countries within the Warsaw pact group were at either end of the voting continuum. Also the non alignment movement group (NAM) has been a major grouping in the assembly (Russett, 1966; Kim and Russett, 1996; Holloway and Tomlinson, 1995). The equilibrium, however, came to an end when the Soviet Union collapsed: Provoking the intriguing question of what shape the changing structure would take. In 1990 and 1991 in every region of the world the voting alignment with the U.S. skyrocketed; interpreted as a sign of the “Reassertion of American Hegemony” (Gareau, 1994). As part of this development the Warsaw Pact voting bloc dissolved quickly and many of the former members of this group moved toward the position of Western European countries (Holloway and Tomlinson, 1995). The rosy expectation of a shift from confrontation to cooperation lasted a relatively short period of time, however. Kim and Russett (1996) found that East-West competition and antagonism were superseded by a North-South divide. Furthermore, Voeten (2000) argues that much of the Cold War East-West conflict has been carried over into the post-Cold War period. Many states that had previously
challenged the U.S. remained opposed to the UNGA agenda of the U.S. after the Cold-War. Voeten (2004) showed that the gap between the voting preferences of the U.S. and other states has widened since the end of the Cold War. It is also important to note that the declining support for the positions of the U.S. has been steady since the end of the Cold War; there was no threshold point marked by the terrorist attacks of September 11\textsuperscript{th} 2001 and the response of the U.S.

Our focus on the interactions that create hegemonic affect requires consideration of how powerful states elicit supports from other members. Past studies have primarily focused on the effectiveness of foreign aid (Dreher, Nunnenkamp and Thiele, 2008; Czaika, 2008; Kegley and Hook, 1991; Rai, 1980; see Dreher and Sturm (2006) for a comprehensive review). Other variables, such as regime type, economic development, and security alliance, have been treated as controls. Though the focus has been narrow the results are inconsistent, largely because of differences in research design (Dreher and Sturm, 2006; Wang, 1999).

Previous studies on voting bloc formation and the effectiveness of foreign aid suggest a pathway towards understanding the processes of hegemonic power in the UNGA. In contrast to existing analyses of voting bloc analysis we see value in investigating the factors that are correlated with voting behavior rather than identifying voting blocs \textit{per se} (Voeten, 2000; Kim and Russett, 1996). The most useful study is Voeten’s (2000) testing of five explanations UNGA politics after the Cold War. The five explanations are hegemonic stability, a structuralist perspective, the realist counter hegemonic bloc
hypothesis, a liberal democratization hypothesis, and the clash of civilization hypothesis. In another study, Voeten (2004) compared the three different perspectives of realism, liberalism, and Huntington’s (1993) well known “clash of civilizations” thesis to understand patterns of post-Cold War UNGA voting.

Overall, Voeten (2000 and 2004) concluded that no theory provided a complete explanation. The hegemonic stability hypothesis is partially supported by the European countries drift from the position of the U.S. In other words, balance of power processes are still in operation after the end of the Cold War. In addition, Voeten found signs of an emerging “counterhegemonic voting bloc” that Huntington (1999) predicted but no empirical evidence for Huntington’s “clash of civilizations” thesis. Though our main goal in this study is not to test the grand theories of IR, these previous analyses, especially the work of Voeten, are useful in helping us address some of the existing theories and guiding variable selection. Our approach is not to see realist and liberal approaches as standalone and competing theories, but to see them as the identification of different modes of power that the U.S. can exercise to maintain its hegemonic status. The military alliances that are of interest to realists and the foreign aid deals that intrigue liberals are different relations of power that have been put into effect. The question is whether they are effective in allowing the U.S. to build a political consensus, or hegemony. In other words, it is not a matter of hard versus soft power but whether the two are utilized to create consensus for the U.S. agenda (Nye, 2011).
Our approach is to use prior hypotheses to analyze hegemony as a multi-faceted process. Balance of power theory engages the process of challenges to U.S. power (Waltz, 2000). Without the security threat from the Soviet Union, European countries, and to some degree Japan, do not have a reason to submit to U.S. dominance in global politics. Therefore, European countries and other traditional allies should display decreasing UNGA voting alignment with the U.S. In contrast to Waltz’s structural realist argument, liberals expect that the alliance between Western developed states will be maintained since their partnership is based on shared interest in liberal democracy and capitalism, (Ikenberry, 2001; Ruggie, 1992). Van Ness (2002) argues that a balance of power challenge is not plausible given that potential challengers enjoy benefits under the hegemonic system. From the liberal perspective, level of democracy at both the systemic level and dyadic level matters predicts cooperation with the hegemonic power, as economic dependency on the U.S. does (Kim and Russett, 1996; Voeten, 2000; Dreher and Strum, 2006).

The combination of previous studies are useful in identifying the UNGA as an arena for the politics of hegemony, and as a dynamic process that involves mechanisms that may be identified as more coercive (such as security arrangements) and liberal (such as trade and foreign aid relations). Our approach is that security and economic measures are capabilities of the U.S. that are mobilized to produce global consensus for the hegemon’s goals. The manifestation of hegemony is not the size of such capacity but the ability to produce consensus through the effective usage of security and economic capabilities. In an analytic sense, consensus in the form of voting alignment is the
dependent variable that is a function of the operation of economic and military power, operationalized as independent variables.

METHOD AND DATA

Research design and method

We extend the examination of change in UNGA voting alignment beyond the years immediately after the end of the Cold War (Gareau, 1994; Kim and Russett, 1996; Holloway and Tomlinson, 1995). Such a timeframe allows for an exploration of whether the terrorist attacks of September 11th 2001 marked a threshold in U.S. hegemony. We examined UNGA votes from 1991 to 2006. We aggregated voting results by U.S. presidential terms since it is reasonable to assume that administrations attempted to construct consistent and stable political agendas within the UN. This approach also helped us overcome the analytic difficulty of summarizing differences across models estimated for sixteen separate years. The five time periods we analyzed are George H.W. Bush (1991~92), William Clinton’s first (1992~96) and second terms (1997~2000), and George W. Bush first (2001~04) and second terms (2005~06).

Instead of analyzing the voting alignment per se, we used multivariate regression analysis and spatial analysis to examine factors that are related to voting alignment with the U.S. To date, factor analysis and multi dimensional scaling have been widely used for analyzing votes and finding coherent sub-groups (Russett, 1966; Kim and Russett, 1996;
Holloway, 1990). However, this is not the best way of examining the impact of factors that are related with voting alignment ratio. Factor analysis requires a stringent assumption that the data are interval measures, raising questions about the validity of results.¹

Using traditional non-spatial regression, however, encounters the problem of the high possibility of spatial autocorrelation in a regression model. Generally, the statistical analysis of spatial data needs two methodological considerations: spatial dependence and spatial heterogeneity (O’Loughlin and Anselin, 1992; Flint, 1998; O’Loughlin, 1986; Ward, 2002). To estimate spatial dependence in the data, a Moran’s I test was conducted on the voting alignment ratio and the residuals of OLS regression. The Moran’s I test confirmed spatial autocorrelation in the OLS model. Between the most widely used spatial regression models the spatial error model (SEM) was employed in the analysis based on a Lagrange multiplier diagnostic test. Compared to the spatial lag model that envisions direct and substantive influence among neighbors, spatial dependence in the error model is interpreted as a nuisance that must be controlled for (O’Loughlin and Anselin, 1991; Flint, 1998). The spatial error model may be stated in the following equations:

\[ y = X\beta + e \]
\[ e = We + x, \]

¹ See (Voeten, 2000) for a discussion of the limitation of factor analysis and MDS for the study of UNGA voting.
where \( y \) is state’s voting alignment ratio as our dependent variable, \( X \) is a group of independent variables, \( \beta \) is an unbiased coefficient, \( W \) is a spatial weight matrix, and \( x \) is the spatially random error term.\(^2\)

Data

*Dependent variable*

Our dependent variable is a states’ four year average voting alignment ratio with the U.S.\(^3\) We included votes that are directly related to U.S. interests, as classified and identified by the U.S. Department of State (Wang, 1999). Every year, hundreds of resolutions are made in the UN General Assembly over diverse issues. In many cases, the resolutions are made through roll call votes while many of them are adopted by consensus. There are compelling reasons for looking at “important votes” instead of “all votes.”\(^4\) First, many of the decisions made in the General Assembly may not be important to U.S. interests. By focusing on important votes we negotiate the charges that consider the General Assembly an arena for “cheap talk” (Czaika, 2008). Second, the U.S. government

\(^2\) In the analysis we used a contiguity based weight matrix. Whether two countries are contiguous or not in the COW contiguity dataset (Stinnett et al., 2002) is determined by the distance between the borders. Of the many criteria available we used 400 miles rule since it is based on the fact that the exclusive economic zone (EEZ) is 200 miles. Thus, if the distance between two states is less than 400 miles, they are classified as neighbors.

\(^3\) For President G.H.W. Bush term and President G.W. Bush’s second term only two years votes were included. The senior Bush’s first two years (1989–90) fall into the Cold War period and we could not complete the dataset for independent variables for G.W Bush’s last two years (2007-2008).

\(^4\) Despite the difference in the selection of votes there is no substantial difference in the results (Dreher, Nunnenkamp and Thiele, 2008)
has selected important votes for U.S. interest and tracked the voting alignment in those issues over member states for a long time. Public Law 101-167 demands that the U.S. Department of State annually report voting practices in the UN to Congress. In the report, voting records in all votes and important votes are summarized and analyzed separately; “PL 101-167 calls for analysis and discussion of all such votes on issues, which directly affected important United States interests and on which the United States lobbied extensively (U.S. State Department, 1991-2006).” Important votes for U.S. interests were identified using the U.S. Department of State reports to Congress on voting practices in the United Nations from 1991 to 2006. The voting records of states were retrieved from Erik Voeten and Adis Merdzanovic’s United Nations General Assembly Voting Data (Voeten and Merdzanovic, 2009). The total number of resolutions defined by the U.S Department of State as important is 193. The “important votes” are the ones that the U.S. wants to achieve consensus upon and hence are a useful measure of its hegemonic capacity.

We calculated voting alignment ratios for the 193 “important votes” using conventional techniques. The voting alignment ratio has been defined by many scholars and the U.S. government (Russett, 1966; Kim and Russett, 1996; Marin-Bosch, 1987; U.S. Department of State, each year). The key difference in its usage lies in deciding how much weight to assign to each identical vote and different votes. In roll-call votes in the UNGA three voting options are available Yes/No/Abstain. The voting alignment ratio adopted by the U.S. Department of State counts only exact same votes. Thus if a state shares five

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6 We excluded an absence when a state did not have a membership or it did not participate in the vote because we were interested in whether a state is supportive of the U.S. or not.
identical votes and five different ones with the U.S., the voting alignment ratio is 0.5. In many other studies, however, abstentions were considered to have a certain meaning; to abstain is an expression of reluctance, being under pressure, or facing a dilemma. The convention, and the one we followed, is to assign half the value of the identical vote to an abstention (Marín-Bosch, 1987; Kim and Russett, 1996; Dreher, Nunnenkamp and Thiele, 2008; Wang, 1999). Thus we assigned 1 to an identical vote, 0.5 to an abstention, and 0 to a different vote. The voting alignment ratio may be expressed as following formula:

\[
\text{Voting Alignment ratio} = \frac{\text{identical votes} \times 1 + \text{abstentions} \times 0.5}{\text{total number of votes} \times 1}
\]

**Independent variables**

A four year average GDP per capita in current U.S. dollars was constructed using the World Bank dataset, with the UN dataset as a complementary source. GDP has been considered as a key variable in analyzing UNGA voting practices under the assumption that a state’s average income level would be positively correlated with U.S. voting preferences (Kim and Russett, 1996; Voeten, 2000; Wang, 1999).

The effectiveness of foreign aid as a form of soft power is important to our theory and has been shown to be important by previous studies (Wang, 1999; Dreher and Sturm, 2006; Dreher, Nunnenkamp and Thiele, 2008; Rai, 1980; Kegley and Hook, 1991). We

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7 In the votes that we analyzed, the U.S. cast only Yes/No votes.
used the OECD official development aid (ODA) database to examine the impact of U.S. foreign aid relationships in building loyalty towards the UNGA agenda of U.S. The actual disbursement of foreign aid in constant price of 2008 U.S. Dollars created a binary variable, since the distribution is far from normal because of the presence of many zeros in the data. There are two kinds of zeros in the cases. One instance happens when a state is not an aid recipient, as for many developed economies. Another case is for countries that receive aid from states other than the U.S. We calculated the dependence of a state on the U.S. as the percentage of aid from the U.S. of total incoming aid. Then, we classified aid recipient countries into two groups; countries that were more dependent on U.S. than the average and others. States that were more dependent on the U.S. than average were assigned a binary code of 1, meaning that non-recipient counties and less dependent countries were considered a reference category.  

Security alliances have been given special treatment in UN voting studies. Weaker states pursue a collective security strategy by making alliances with more powerful countries, but the stronger power expects something in return. Weaker partners often have to provide something for the powerful state, such as offering military bases (e.g. Japan and South Korea) or, and relevant to our analysis, giving support in international organizations. We see security alliances as a form of hard power (Nye, 2011) that may be mobilized to produce political consensus. Security alliances have been considered as a form of dependent variable rather than an independent variable because findings in previous

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8 Though the problem to avoid is putting many developed countries and developing countries that are less dependent on the U.S. foreign aid into the same category our method remains a reasonable way to examine the net effect of foreign aid as leverage since we controlled for the level of economic development by including per capita GDP.
studies of the Cold War period confirm the presence of an East-West dividing line, which is a structural expression of security alliances (Voeten, 2000; Kim and Russett, 1996; Holloway and Tomlinson, 1995). After the end of the Cold War, however, the role of alliances has not been examined in a systematic manner. The question is whether security alliances matter after the demise of the bipolar structure. We examined the influence of security alliance on voting alignment with the U.S. by including a dummy variable, whether a state has a security alliance with the U.S. or not. We relied on data from the Correlates of War (COW) project (Gibler and Sarkees, 2004). The alliance data in the COW project was available up to 2000, thus we extended the data up to 2006 by using Gibler’s (2009) data. The existence of either a mutual defense or non-aggression pact was used to define the existence of a security alliance.

The liberal focus on shared interests or benefits is usually operationalized as economic interdependence or the presence of a stable democratic regime. Trade dependency on the U.S. has been considered to steer a state’s foreign policy alignment (Kim and Russett, 1996). We relied on the dyadic trade dataset in the COW project (Barbieri, Keshk and Pollins, 2008) and Gleditsch’s (2002) expanded trade dataset as a complementary source. The export dependence of a state on the U.S. is defined as the ratio of exports to the U.S. over the total exports of the state.\footnote{We tested import, trade, and export dependency. The results are not significantly different from each other. We chose export dependency because the U.S. has used accessibility to its huge market as political leverage, as seen in the politics of most-favored-nation trading status.} We took a natural logarithm transformation since the distribution of export dependency is highly skewed. Another important variable frequently used to investigate the liberal perspective is the regime type
of a state, measured by a democracy index and usually finding a strong correlation between the level of democracy and voting preferences (Kim and Russett, 1996; Voeten, 2000; Dreher, Nunnenkamp and Thiele, 2008; Wang, 1999). We used the political rights index from the democracy index provided by Freedom House. 10 The Freedom House democracy index varies from 0 to 7. A large value means a more democratic regime.

We examined any regional effects by including regional dummy variables (Voeten, 2000). Based on an exploratory spatial analysis we kept two dummy variables, measuring membership in the European Union or Arab League. In an analytic sense, if spatial autocorrelation disappears after including these dummy variables spatial clustering can be explained by the geography of membership in these two institutions. If spatial autocorrelation remains the spatial clustering needs further investigation with more nuanced methods. We summarize the variables in the table 2.1.

ANALYSIS

Descriptive statistics

Table 2.2 summarizes the 193 votes important to U.S. interests in terms of issues. As the table shows, the matter of human rights is a regular “important vote.” In most cases, this category indicates attitudes towards specific countries, notably Cuba, Sudan, Iraq, Iran, former Yugoslavia, Congo, Turkmenistan, Belarus, North Korea, and Burma. The list of

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10 The POLITY IV dataset, another widely used source, was not used because of the large number of missing cases.
countries suggests that the U.S. has tried to elicit global support to put pressure upon “recalcitrant” countries in the UN. Not surprisingly the Israel-Palestine issue is another important issue to the U.S. The U.S. has tried to thwart resolutions that supported Palestine or denounced Israel. In addition, nuclear issues, such as the Comprehensive Test Ban Treaty and nuclear proliferation, as well as disarmament in conventional weapons, have been designated as most important. The economic sanction category almost exclusively referred to the embargo on Cuba. Most of all, a key trend to be noted is that there is no significant change in the composition of important votes over time, which means that U.S. interests to be realized in the UNGA have been very consistent. The U.S. has consistently tried to gain support from member states to put political pressure on some “unmanageable” states, to defend its support for Israel, and to keep the number of nuclear powers unchanged. While the issues that the U.S. has tried to create consensus around have remained stable our analysis illustrates that the effectiveness, means, and geography of that consensus building have changed over time.

We reorganized the votes by region of interest or focus, Table 2.3. The U.S. regional interest is almost exclusively in the Middle East, especially efforts to support Israel and to earn international support for policies on Iraq, Iran and Israel-Palestine. Compared to the emphasis on the Middle East, the U.S. has spent little attention to other regions. Central America is another name for Cuba here. The North Korean nuclear issue, human right issues in North Korea and Burma are the only U.S. interests in Asia represented in the votes. Despite U.S. interventions in issues pertaining to former Yugoslavia and Sudan, U.S. interest in related regions has faded in recent years.
UN member states’ voting alignment with the U.S. has been decreasing since 1991 (Figure 2.1). In George H.W. Bush’s term, the ratio was 0.59, but it steadily decreased to 0.33 by the second George W. Bush term. Or, a simpler interpretation is that 59% of states agreed with the position of the U.S. in George H.W. Bush’s term while 33% did in George W. Bush’s term. The high alignment ratio from 1991 to 1996 was a reflection of the Cold War victory against the Soviet Union. After the end of the Cold War, there was an increased support for the U.S. in UNGA politics. Gareau (1994) finds the alignment ratio bounced up after 1991, which he interpreted as the reassertion of U.S. hegemony; especially through the garnering of new support from Eastern Europe and the Non-Aligned Groups (Holloway and Tomlinson, 1995). However, the trend in voting alignment shows that the heyday was too brief to argue that a sustained period of unchallenged U.S. hegemony had emerged (Gareau, 1994; Fukuyama, 1991).

The decline of U.S. hegemonic power in the UN can be found not only in the declining voting alignment ratio but also in the process of agenda setting. Figure 2.2 illustrates U.S. responses to UNGA votes. In the early 1990s, a large proportion of resolutions was favorable to the U.S. Thus, the U.S. responded with more affirmative votes. Many resolutions in 2000s, however, were contrary to U.S. interests. This means that states in political disagreement with the U.S. actively participated in agenda setting by putting thorny issues on the table. For instance, there are five votes related to the Middle East issue in both 1991 and 2003. One of each of the five is about UNRWA (United National Relief and Works Agency for Palestine Refugees in the Near East). Of the four
other resolutions in 1991 two resolutions were proposed for supporting Palestine, one for defending Zionism (that was denounced as a form of racism), and the last one was regarding the human right situation in occupied Kuwait. The U.S. cast two nay votes for the resolutions supporting Palestine and three yes votes to the others. In 2003, four votes were about the human rights situation in Palestine and denouncing illegal Israeli actions in West Bank and Gaza. Consequently, there were four U.S. nay votes in 2003. Reminding ourselves that U.S. interests in the UN did not change much in terms of issue areas and regional foci, what has changed is not the agenda but the number of states that challenge the U.S. The presence of a so called anti-hegemonic bloc (Huntington, 1999), however, does not necessarily mean the decline of U.S. hegemony overall in that the bloc may be concentrated in time and space. Hence, to identify and understand the trends of U.S. hegemony, we examine voting alignment ratio with the U.S. over time and for all members of the UN.

The maps in figure 2.3 show the global pattern of the voting alignment ratio with the U.S. over time. In President George H. W. Bush’s term the U.S. had considerable support from Europe, Russia, South America, Australia, Japan, Western Africa, and its Middle Eastern allies (such as Saudi Arabia and Egypt). In President Clinton’s first term the high alignment ratio remained but a few geographic changes are noticeable. European countries, such as Poland, Spain, and some Balkan countries showed increased alignment with the U.S. Considering that one of the most important international issues in Clinton’s first term was NATO’s intervention in Yugoslavia increased support from European countries was to be expected. However, there was a decline in the alignment ratio in
Western Africa, which is partially because of the U.S.’s attitude to the civil war in Sudan. Many Western African countries were reluctant to support the human right resolution targeting Sudan proposed by the U.S. Finally, some countries showed very little alignment with, or consent towards, the U.S., such as China, North Korea, Iran, Iraq, Libya, Sudan, and Somalia. Many of these countries are frequently mentioned as challengers to U.S. hegemony or an anti-hegemonic bloc (Huntington, 1999). In President Clinton’s second term the alignment ratios showed little variation. Most Asian and African countries fell into the same category (0.25~0.5). This pattern can be explained by the changes in former Soviet Union states. First of all, Russia’s alignment ratio moved down to a lower category. Although Kazakhstan and Kyrgyzstan remained in the high alignment categories, some of the former Soviet “Stan” countries and Mongolia showed reduced alignment.

In George W. Bush’s first term, there were dramatic changes. The alignment ratio in Europe dropped significantly, providing partial support for the balance of power theory (Voeten, 2000). Also the alignment ratio in Arab countries, South East Asia, and Africa became very low. The unilateral foreign policy of the U.S. in response to the terrorist attacks of September 2011 may be a possible explanation for such a decline in those regions, though these changes may also be interpreted as a continuation of the declining trend seen during President Clinton’s administration. In President George W. Bush’s second term the geography of global support for the U.S.’s political agenda, as a product of the declining trend, is consolidated in a clearly divided world. The European Union, Canada, Australia, New Zealand, and the U.S.’s East Asian allies (South Korea and Japan)
show relatively high alignments with the U.S., but the rest of the world expressed very different opinions in the arena of the UNGA.

To understand the factors related to the level of voting alignment multivariate regression was employed. We built regression models based upon the variables that have been used in previous analyses, the theories we have discussed above, and the suggestion from the previous maps that regional dynamics play a significant role. The final variables measure per capita GDP, foreign aid, security alliances, trade dependency, and democracy, plus the inclusion of regional dummy variables. The maps suggest the possibility of spatiality in the data, and the Moran’s I test confirms that UNGA voting alignment with the U.S. is spatially clustered.11 There are two possible reasons for this result. The first explanation is that similar states are geographically clustered together. Simply, Europe is characterized as a region of rich liberal democracies, Northern Africa and Middle Eastern states are mostly Islamic, and Central American countries are similar in that they are in America’s “backyard”. If this explanation is true then geography may be regarded as a set of factors that can be easily controlled for by including regional dummy variables. Another possible explanation is based on the neighborhood effect or spatial dependence (Anselin, 2002). This explanation requires a sense of process: Neighboring countries tend to show similar voting preference because they interact with each other. Statistical diagnostic tests, however, indicated that the spatial effect in operation in the data is more likely to be a result of the former explanation rather than direct interaction among

11 The Moran’s I tests on voting alignment ratio were as follows: President George H. W. Bush term (0.047), William Clinton I (0.213), William Clinton II (0.245), George W. Bush I (0.216), and George W. Bush II (0.312). Except for President George H.W. Bush’s term the scores were statistically significant at the 0.001 level.
neighbors. Based on the diagnostic tests we used a spatial error model (SEM) in this study. Table 2.4 shows the result of the OLS regression and SEM regressions.

In the OLS models the democracy index and GDP per capita are the most significant variables across the five time periods. This confirms the existing findings that economically developed countries and liberal democracies are more likely to be aligned with the U.S (Kim and Russett, 1996; Voeten, 2000). Other variables do not display consistent explanatory value. The security alliance is not significant at all. Countries that are more dependent on U.S. foreign aid supported tended to align with the U.S.’s UN agenda in both of President Clinton’s terms as well as the first term of President G.W. Bush. Accessibility to the U.S. market was only an explanatory factor in the first term of President Clinton’s administration. The regional dummy variables did provide some insightful results. First, the EU dummy became significant during President G.W. Bush’s administration. In one sense, this suggests that the EU began to act in unison in a process of building internal coherence and enlarging its membership. However, this relationship is nuanced because we found that the voting alignment ratio with the EU decreased through President G.W Bush’s administration. The interpretation must be made at both the global and dyadic levels. Although the gap between the EU and the U.S. widened through G.W. Bush’s Presidency EU membership itself has prevented a further decrease in support for the U.S. at the dyadic level. The Arab League dummy variable displayed a negative and significant relationship in both of the Bush Presidency’s. The decision for the U.S. to wage war in the Middle East can be seen to have had a negative impact upon its ability to get Arab countries to agree to its political agenda.
The interpretations from the OLS regressions must be treated with caution, however, because the model produced biased coefficients in the presence of spatial autocorrelation (Anselin, 2002). As seen in the Moran’s I test on residuals and the Lagrange multiplier test on the OLS model the residuals were spatially associated, except in the first period. The presence of spatial autocorrelation, however, does not necessarily confirm a substantive neighborhood impact, but suggests the need to compensate for spatial autocorrelation in the error term.

The SEM analysis produces some significant differences from the OLS models. In the first period there was no substantial difference between the two models because the impact of spatial autocorrelation was negligible. There was no meaningful difference between the models for President Clinton’s first term either. In the second Clinton administration, however, there were substantial changes in the significance of the foreign aid and export dependency variables. Once we include spatial dependence in the model, export dependency becomes significant but foreign aid dependence lost its explanatory power. In President G.W. Bush’s first term foreign aid also lost its significance. Membership in a security alliance becomes significant factor for the only time in the last of President George W. Bush’s terms. The impact of accounting for spatial autocorrelation is profound when considering regional spatial effects. What, in the OLS models, had been seen as a profound development of a bloc of EU support through the George W. Bush Presidency is now seen as non-existent. The political geographic unity of EU support for the U.S.’s political agenda is no longer evident, suggesting that processes of EU
integration and enlargement have not created a bloc that perceives and acts towards the U.S. in a unitary manner. Rather than a geography of regional bloc formation, the state-to-state politics of security alliance formation was a more significant predictor of whether a country followed the U.S.’s political agenda. However, the Arab League dummy variable appears more stable over the President George W. Bush administration. It was negative and significant in both terms, and not just the first as in the OLS model.

DISCUSSION

Despite the bold argument of the end of history (Fukuyama, 1991) and the rebound of support for U.S. leadership after the end of the Cold War (Gareau, 1994), the ability of the U.S. to act as a hegemonic power and set a political agenda within the UN that others follow has been decreasing. Moreover, this decline of U.S. hegemonic power appears to be a long-standing trend rather than a product of particular administrations or the result of the War on Terror. Empirically we confirm existing findings that the gap between the voting tendencies of U.S and other states in the UNGA has been widening (Voeten, 2004). Theoretically we stress that producing consensus within the UNGA would be a goal and measure of hegemony, and hence we provide partial evidence U.S. hegemonic decline. However, it is a tall order to investigate the factors behind the decline of U.S. hegemony and our analysis is just one view of a complex process. What our analysis of UNGA voting alignment does offer is an evaluation of an aspect of consensus building by looking at the creation of regions of support and resistance and the differential success of different modes of U.S. power in creating consensus.
The results of our analysis offer four contributions or points of discussion: the necessity of considering the spatiality of the data; the process of region building; the need to consider liberal and realist perspectives as joint components of hegemony rather than competing approaches; and the role of the actions of Presidents and their administrations within broader trends. First, the comparison of the OLS and SEM regressions illustrate that the inherent spatiality of the data must be incorporated into the analysis to ensure unbiased results. Data on the behavior of states is very likely to display spatial effects given the geographic clustering of similar states and the impacts of the diffusion of some processes. In this analysis the spatiality of the residuals required treatment that substantively altered the regression results and the conclusions that may be drawn.

Second, the maintenance of hegemony within the UNGA and the marshaling of resistance towards the hegemonic power seem to involve, to some degree, the construction of political regions. The ability of the U.S. to mobilize political consensus within the UNGA has been decreasing almost everywhere across the globe with a few exceptions. The exceptions are the countries bounded through security alliances to the U.S. For the European countries the key institution is NATO. South Korea and Japan have mutual defense pacts with the U.S., and Australia is a member of ANZUS. In contrast to these relationships of influence, over the period of our analysis the U.S. lost its outposts of UNGA support in Africa (e.g. Egypt) and Asia (e.g. the Philippines and Thailand). More importantly, the U.S. could not keep its influence over the former Soviet Central Asian
“Stan” countries. Instead these countries are developing relationships with China through the Shanghai Cooperation Organization.

The results of the SEM show that the foreign policy efforts of the U.S. to maintain trans-Atlantic integration through NATO expansion did not translate into a unified bloc of support for its UNGA agenda. The construction of a security bloc, or the exercise of hard power, did not translate into the successful construction of consensus in the arena of the UNGA. In other words, allies in one realm of international politics need not necessarily act as one wants in another realm; security cooperation with the hegemonic power does not necessarily mean that its member states lose political autonomy against the hegemon’s imperatives. The case for countries resisting the hegemonic power was very different, however. Though likely catalyzed by U.S. military intervention in the region, reaction to the exercise of the hegemonic state’s hard power was expressed in a unified exercise of soft power by Arab countries in the UNGA. For formal allies the military actions of the U.S. were not enough to guarantee political acquiescence. For other countries seen as targets of U.S. military action, or allies of these targets, soft power was a viable avenue of political challenge.

European countries have remained the biggest supporter of U.S. hegemony. Moreover, the rapid change in the position of Eastern Europe states from their pro-Soviet position to a pro-U.S. one has been maintained with the eastern expansion of NATO (Holloway and Tomlinson, 1995; Gareau, 1994). Some have suggested that a decline in the voting alignment ratio for European states between the 1990s and the 2000s is the
evidence of the operation of balance of power politics (Voeten, 2000; Waltz, 2000).

However, it should be emphasized that more than twenty-five states in Europe have remained in the position of most reliable supporters of the U.S., in terms of UNGA voting alignment, along with Canada and Australia. Seeing hegemony as a process of consensus building rejects the prediction that Europe will emerge as a challenger to the U.S., and emphasizes that continued European support for the U.S. is a manifestation of the successful practice of U.S. hegemony (Waltz, 2000). In contrast, misjudged exercises of military power can create regions of resistance to the hegemonic power.

Third, theories that have been previously identified as competing explanations of UNGA voting alignment are better perceived as isolating different components of the overall strategy of the hegemonic power. Security alliances, as identified by realists, and trade and foreign aid, the focus of liberal theories, are the twin hard and soft power elements of the hegemonic state (Nye, 2011). Incorporating all of these aspects into an analysis of hegemony illustrates which ones are more effective in building political consensus over time. In other words, the efficacy of hard and soft power in aiding a hegemonic consensus varies over time and space.

Finally, our analysis raises questions regarding the role of agency within the process of hegemonic decline. Structural theories of hegemony or world leadership (Wallerstein 1974; Modelski, 1987; Kennedy, 1987) have no room for the actions of individual leaders; the trajectory of decline is structurally determined. The structural tendency towards decline, or a decrease in consensus building capacity, is evident from our
results. However, the variation in the significance of the independent variables across the models for each of the Presidential administrations shows that there is variation in the impact of different elements of hegemonic power upon consensus building. For example, trade and foreign aid were marshaled successfully during the Clinton administration while security alliances were identified as the most effective means under the Presidency of George W. Bush.

Overall, we evaluate the process of U.S. hegemony in one arena, the UNGA, and see evidence of a declining trend in the ability to create political consensus. We add to the ongoing conversation regarding whether the U.S. can maintain its international dominance through hard or soft power (Nye, 2011) by showing that both are modes of power mobilized by the U.S. to achieve hegemony, rather than components of power. The efficacy of these modes of power have varied over time, suggesting that changing global circumstances and the preferences of different Presidents interact to create different power foundations for hegemony.
### Tables

**Table 2.1 Dependent and independent variables in the analysis**

<table>
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<th>Variables</th>
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<td>Democracy</td>
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<td>Regions</td>
<td>Dummy (EU, Arab League membership)</td>
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Table 2.2 UNGA Important votes to U.S. interests by issues

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### Table 2.3 UNGA Important votes to U.S. interests by regions

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Table 2.4 Result of regressions

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<td>0.040**</td>
<td>0.080***</td>
</tr>
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<td>Security Alliance</td>
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<td>-0.024</td>
<td>-0.005</td>
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<tr>
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<td>0.009</td>
<td>0.053**</td>
<td>0.037*</td>
<td>0.062***</td>
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<td>Log Export Dependency</td>
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<td>0.003</td>
<td>0.010***</td>
<td>0.014***</td>
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<td>0.028***</td>
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<td>0.030***</td>
<td>0.031***</td>
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<td>EU</td>
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<tr>
<td>Arab</td>
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<td>Moran’s I of Residuals</td>
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<td>-0.003</td>
<td>0.263***</td>
<td>-0.039</td>
<td>0.268***</td>
</tr>
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1) * P< .1; **P< .05; ***P< .01
Figure 2.1 The change of voting alignment with the U.S.
Figure 2.2 U.S. responses to important votes
Figure 2.3 Maps: The change of voting alignment with the U.S.
CHAPTER 3

STANDING DIFFERENT GROUND:
The Spatial Heterogeneity of Territorial Disputes

This chapter is a version of an essay, co-authored with my Ph.D. adviser Colin Flint, submitted to *GeoJournal*. In this chapter existing research on territorial disputes is revisited using geographically weighted regression in order to gain a contextual understanding of the escalation of territorial disputes. Despite the recent trend in peace science of employing local scale analyses to overcome the limitations of state-centric data and analyses, the study of territorial disputes has been conducted at the global scale in order to identify a general model and promote an epistemology of a universal causal process. Using geographically weighted regression, territorial conflicts from 1950 to 1995 are examined at the local scale in order to identify spatial heterogeneity which is interpreted as spatial context. The results of the local statistical analysis are presented in comparison to a conventional non-spatial universal model to interrogate the appropriateness and benefits of local scale analysis for the study of territorial conflicts.

INTRODUCTION

Much research and commentary in the past few years has argued that a wave of globalization has swept the whole world since the late twentieth century. Such analysis concentrates upon how goods, capital, and people travel across the entire world with fewer restrictions than during the decades after the Second World War. Not surprisingly,
political geographers have focused on the changing spatialities that globalization has brought in, and identified it as a process of reterritorialization rather than simple deterritorialization, or a decrease in the salience of the politics of territorial control (Elden, 2009). The emphasis on the formation and maintenance of territory as a political process raises questions about why conflicts over territory occur in some places and not others and whether there is a geography of the causes of territorial conflict. Though the discipline of political science has dominated quantitative inquiry into territorial conflicts there are important roles for geographers. Building upon a number of ethnographic and qualitative studies analyzing the complexities of the maintenance of territories and related identities (Elden, 2009; Newman and Paasi, 1998; Ó Tuathail, 1998), we directly engage the epistemology of political science by questioning the suitability of a universal empirical model to explain territorial conflicts.

A distinctive body of international relations scholarship has concentrated on the saliency of territory in instigating violent conflicts between territorially demarcated political entities especially between neighboring states (Vasquez and Henehan, 2001; Huth, 1996). The epistemology of these studies constructs statistical analyses that assume that explanations for territorial conflicts remain constant over time and space. When geography is considered it is included as an explanatory variable to how that the probability of conflict is generally increased by geographical proximity, along with the presence of territorial disagreement between states (Senese, 2005; Hensel, 2000). With few exceptions, the understanding of geography as the concept of proximity and as the location where territorial conflicts occur dominates the quantitative study of conflicts.
Borrowing O’Loughlin’s (2000b) term, proximity resonates well with the perspective of seeing geography as space, while a sense of geography as exposing different contexts in which territorial conflicts manifest differently is ignored.

Our aim is to identify the regional contextual pattern of the underlying causes of territorial conflicts. Our analysis complements calls to investigate the importance of place as a purpose for conflict (Diehl, 1991), but does so in a systematic manner rather than focusing upon the complexities of individual conflicts. The assumption is that though each territorial conflict is unique there may also be broader regional patterns that destabilize the assumption of universal explanations. The numerous studies confirming the critical impact of territory have aimed to find a universal explanation for territorial conflict by using regression type analyses conflict (Huth, 1996; Huth and Allee, 2002; Vasquez, 1993 and 1995; Vasquez and Henehan, 2001; Senese and Vasquez, 2003; Senese, 2005; Vasquez and Valeriano, 2008). In this research, we try to incorporate the notion of geographic differentiation into the study of territorial conflict by taking the spatial heterogeneity of conflict processes into consideration.

To achieve this goal we revisit a prominent universal model of territorial conflict by applying geographically weighted regression (GWR). Specifically, we examine Huth’s (1996) hypotheses and data on how the existing explanations regarding the escalation of territorial disagreements into more serious political and military confrontations display spatial heterogeneity. Our approach is largely inductive: We see if regional patterns in the causes of territorial conflicts exist and provide some insight into which processes are most
salient in which regions. Our hope is that such findings will provoke a reflection upon the applicability of universal models that dominate the systematic analysis of territorial conflicts and catalyze theorizations that take regional setting seriously.

STANDING GROUND OR DIFFERENT GROUNDS

Despite the scholarship illustrating the complexity and uniqueness of particular territorial conflicts, it does not necessarily promise the presence of a regional pattern or regime that is assumed when GWR is employed. In other words, it is not easy to answer whether and how the determinants of territorial conflicts in, say, Western Europe are different from those in East Asia. Although there is no study that directly discusses this issue, we were inspired by a few studies in different veins. First of all, we were motivated by the recent trend in quantitative international relations and conflict studies that has incorporated geography in a way that is more sophisticated than the usual inclusion of simple measures of contiguity and distance (Buhaug and Lujala, 2005; O’Loughlin and Witmer, 2011). There has been a growing body of work that questions the right scale of conflict analysis (Buhaug and Lujala, 2005; Buhaug and Rød, 2006), pointing out the mismatch between the scale of data in civil war studies; although a civil war rarely covers the whole territory of a state existing studies still rely on state level data. For example, the civil wars in Punjab and Assam in India are manifest at a local scale but quantitative studies still use country-level data (Buhaug and Lujala, 2005). The recent trend of “disaggregating methods” in conflict studies has emphasized geography as both location and level of analysis to overcome the overemphasis on the state-level perspective that
focused on economic issues, political regime, alliance patterns, and balance of power (O’Loughlin and Wittmer, 2011; Raleigh et al., 2010; Buhaug and Rød, 2006). The move towards disaggregation has also introduced new, ostensibly “geographic,” variables into the analysis of civil war, such as terrain, topography, presence of “lootable” resources and distance to capital and populated area (Buhaug and Lujala, 2005; Buhaug and Rød, 2006).

Though we may be critical of a notion of geography that reifies forests, mountains, etc. as fixed and causal geographic explanations rather than socially constructed elements of conflict (Peluso and Vandergeest, 2011), the one thing that can be taken from the move towards disaggregation in quantitative conflict studies is the need to consider alternative levels of analysis. To complement the shift to the local level we investigate the plausibility and necessity of including a regional analytical approach.

The development of disaggregating methods has gone hand in hand with the building of relevant datasets and the application of GIS technology (Goodchild and Janelle, 2010). Many new datasets have been built to facilitate spatial analysis by providing geographical coordinates such as the location of diamond deposits (Gilmore et al., 2005; Lujala, Gleditsch and Gilmore, 2005), oil (Lujala, Rød and Thieme, 2007), Militarized Interstate Disputes (MIDs) locations (Braithwaite, 2005), and armed conflict (Raleigh et al., 2006). The application of a local approach to interstate wars is still not convincing, in that the decisions of states to go to war with each other may not be constrained by the same factors used for explaining civil wars. Despite the limitations of applying a local approach to interstate wars, the increasing focus upon a local rather than state level analysis suggests a newly found consideration of the cause of territorial conflict that rests upon the
distinctive characteristic of territorial conflicts. Specifically, it has been recognized that
the meaning and value of territory is evaluated differently by people in different situations
(O’Lear et al., 2005; Dzurek, 2005; Hensel and Mitchell, 2005). In some situations the
tangible value of territory, such as the presence of natural resources and geostrategic
location, may be more important whereas in other cases intangible value, such as the
symbolic meaning of place or ethnic ties to people across the border, may be more salient.
Building upon the idea that the value of territory has different implications in different
conflicts, it is reasonable to posit whether the place-specific evaluation of territory gives
rise to a regional spatial pattern or regime of the causal processes underlying territorial
conflict between neighboring states.

Second, our response to existing empirical studies providing universal explanations
is motivated by the geographic epistemology that challenges the assumption that political
processes operate uniformly across space and in different geographic settings (O’Loughlin,
2000b; Sidaway, 2008). A geographic stance, however, does not mean that each territorial
conflict is simply different because it has a unique historical-political setting. To
overcome the idiosyncratic approach and move towards a regional analysis we reference
Murphy’s (2002) identification of different territorialization processes in the modern state
system. According to Murphy, each country has its own “regime of territorial legitimation”
based on its historical context at the time it entered the modern state system, but there is
still the opportunity to generalize and identify overarching processes. He focuses on two
important factors, political-territorial situation and cultural-historical experience. For
example, Murphy examined whether states were founded as a break-up of an empire (e.g.,
Austria and Hungary) or were the core of an empire (e.g., Turkey), or gained independence after colonialism (e.g., Iraq). Although Murphy does not explicitly mention regional patterns or similarity between neighboring countries in terms of their state-building processes, it is possible to elicit a sense of regional effect or similarity at a regional scale. Indeed, regional scale generalizations are often mentioned (Murphy, 2002: 204). Although Murphy’s general framework is insightful to some degree, it is also difficult to incorporate his framework into quantitative research because the categorizations are unclear and overlapping. Despite these limitations, however, Murphy’s framework encouraged us to examine territorial conflict at a regional scale because of the likelihood that countries in the same region are more likely to have similar political-territorial circumstances; such as similar colonial experiences, or the formation of new countries after the collapse of the Soviet Union (the “Stan” countries). For example, all territorial conflicts in Far East Asia (between South Korea, Japan, China, and Russia) are rooted in the process of the rise and fall of the Japanese Empire.

Finally, our study was inspired by the spatial pattern analysis of Braithwaite (2005). Using spatial scan statistics, Braithwaite found that MIDs (Militarized Interstate Disputes1) were clustered in space and time. Although his study does not focus on territorial conflict, nor did it investigate the local determinants of conflict, it provides a good reason to suggest the spatial heterogeneity of processes of territorial conflict. Most of all, it is possible to

1 The Militarized Interstate Dispute (MID) data records militarized incidents, such as threats, display or use force against one or more other states between 1816 and 2001. The information includes actor(s) and target, incident data and type, issue type, location description, fatalities of actor(s), and the source of information (Ghosn, Palmer and Bremer, 2004)
assume that militarized conflicts that escalated from territorial disagreements are spatially clustered when we remind ourselves that a large percentage of MIDs arose from territorial disagreements. According to Hensel (2000) approximately thirty percent of MIDs and more than fifty percent of interstate wars between 1816 and 1992 involved territorial issues. Using a different dataset, Brecher and Wilkenfeld (1997) identified that almost fifty percent of international crises, out of 280 crises between 1946 and 1988, started with a territorial issue. Though the notion of space-time clustering has been applied to the study of militarized conflicts and wars, the analysis has exclusively relied on spatial interdependence and the neighborhood effect using spatial autocorrelation models (Ward, 2002; Buhaug and Gleditsch, 2008). As Anselin (1998) addressed, however, spatial analysis includes both spatial dependence and heterogeneity. As far as we know, the latter has not been examined in conflict studies since spatial heterogeneity has been generally seen as a statistical nuisance or dealt with by incorporating simple regional binary variables (e.g., Asia, Africa, Europe, etc.) in quantitative analysis (Páez and Scott, 2004).

Our research is an empirical exploration of the manifestation of regional conflict formations in the specific case of territorial disputes (Väyrynen, 1984).

The three motivations behind this study suggest the importance of exploring the spatial heterogeneous nature of the processes causing territorial conflicts. The movement towards exploring new levels or scales of analysis requires consideration of the epistemology of universal explanations. The possibility of regional patterns in the underlying causes of territorial conflicts requires consideration of spatial heterogeneity that, if identified, will
not only challenge the epistemology of universal models but provide some initial findings to stimulate a theorization to explain and test the patterns found.

RESEARCH DESIGN

Research Design and Method

To investigate and include spatial heterogeneity in a regression model of territorial conflict we used geographically weighted regression (GWR). The underlying idea of GWR is that parameters may be estimated anywhere in the study area given a dependent variable and a set of one or more independent variables, which have been measured at places whose location is known (Charlton and Fotheringham, 2009: 5). Hence, the regression coefficient and other parameters are not static but change over space. We used both ordinary least square (OLS) regression and GWR. A few points may be addressed by comparing non-spatial and spatial methods. First, since GWR produces location specific regression parameters, it is possible to examine the influence of independent variables at each location. For instance, the economic value of territory (e.g., proximity to oil fields or mineral mines) may have different influence with different significance on the escalation of territorial disputes in different geographical contexts. Second, it is an important task to compare how successfully the models explain real events. To evaluate the goodness of fit of models, the Akaike Information Criterion (AIC) and R-square statistics were examined. The $F$-test was conducted to see if there is significant improvement when spatial heterogeneity is included in the model to explain territorial conflicts. Third, a Monte Carlo
test is implemented to see if the degree of spatial variation of regression coefficients was statistically significant. If the Monte Carlo test to confirm the distribution of local coefficients is significantly different from those produced by random shuffling the use of GWR instead of OLS can be justified.

GWR analysis, however, has its own troublesome aspects, especially when it comes to interpreting parameters and hypothesis testing because, ironically, of the massive amount of information estimated at each observation (for details see Páez, Uchida and Miyamoto, 2002). Furthermore, explaining the spatial variation of local coefficients in multivariate spatial analysis is a very challenging task. Thus, instead of focusing on a detailed explanation of the spatial variation in the explanatory power of the variables we emphasize the identification of broad regional patterns and the increased explanatory value of GWR. A brief initial explanation of the spatial patterning we found is merely a precursor to, we hope, subsequent theorization of the regional pattern.

Data

As mentioned earlier we used Huth’s hypotheses and data to examine spatial heterogeneity in the processes of territorial conflict. There are two widely used territorial conflict datasets that are publicly accessible (Senese, 2005). One way of acquiring data is to extract a subset of Militarized Interstate Disputes (MIDs) by using revision type code to isolate those over territory (Ghosen, Palmer and Bremer, 2004). The other dataset is Huth’s (1996) and Huth and Allee’s (2002) data about territorial claims. We chose Huth’s
dataset since the MID dataset covers only militarized disputes and not territorial disagreements. Compared to the MID dataset, Huth started with a territorial claim and recorded its consequences, namely whether it developed into a more serious conflict or not. In addition, Huth provided a brief description of territorial claims, which enabled us to find out the precise geographic coordinates of disputed territories. Huth (1996) tested three sets of hypotheses on conflict onset, escalation and peaceful resolution. We focus on escalation, rather than onset and resolution, because the test for the conflict onset needs control cases (e.g., non-disputed borders) that cannot be specified in a real geographical space with geographic coordinates, and Huth’s modeling of peaceful resolution produced very similar results to his findings on escalation.

To implement GWR Huth’s dataset had to be spatialized by geocoding the location of territorial conflicts. As Braithwaite (2005) addressed geocoding conflicts is not straightforward. The nature of the conflict has to be considered; such as a claim for a designated small area (e.g., Gibraltar between Spain vs. U.K.), a disagreement over an entire or partial interstate border (e.g., between Soviet Union and China), or a claim over the whole territory of a state (e.g., China’s claim over Taiwan). Each of these implies a different scale or extent of “location.” We used a series of geocoding principles following Braithwaite (2005). If the disputed territory was over a bordered region, we use the coordinates of the regional political seat or the most populated city in the region (e.g., city of Trieste for Italy vs. Yugoslavia). When there are several areas under dispute between two states at the same time we chose the most acute one or the location where physical confrontation happened (e.g., Mocoron, the border town between Nicaragua and Honduras),
or we geocoded the disputes separately (e.g., in the dispute between Argentina and Chile
the Beagle Channel, Palena, and Picton were geocoded separately because they were not
disputed at the same time). When the dispute pertained to the territory of a state, the
capital of a targeted state was used (e.g., City of Dili as the capital city of East Timor that
was disputed by Portugal and Indonesia). We relied on the search engine provided by the
National Geospatial-Intelligence Agency (NGA)
(http://geonames.nga.mil/ggmaviewer/default.asp) to geocode locations. When the NGA
server did not provide the geographic coordinates, we used Google Earth ™ to
approximate the location (e.g., the centroid of the Neutral Zone between Iraq and Saudi
Arabia since there was no city or sizable human settlement).

Huth (1996) examined 129 territorial conflicts from 1950 to 1990. The unit of
analysis is the dyad-year (conflict between states for each year) producing a total number
of 3039 dyads. As a dependent variable he used the stages of escalation; 1) minimal or no
diplomatic and political conflict 2) moderate to high levels of diplomatic and political
conflict, 3) high levels of diplomatic pressure coupled with militarized confrontations.
Moderate to high levels of diplomatic and political conflict include one or more of the
following: a) hostile rhetoric and public recriminations, b) soliciting of third-party support
in order to pressure a target into making concessions, c) use of sanctions or restrictions on
bilateral diplomatic, economic, or military ties as a result of the territorial dispute, and d)
efforts to overthrow or destabilize the government of a target in an attempt to induce a
change in target policy over disputed territory (Huth, 1996: 105). Using an ordered probit
model, he found that all the variables included in the model were statistically significant.
To organize the analysis Huth classified the variables into three overarching categories to highlight particular causes of territorial conflict; the issues at stake, international context, and domestic context. To assist in comparing our results with Huth’s analysis, and because it is a useful organizing framework, we also adopt these three categories.

To implement GWR we made a slight modification to the dependent variable in Huth’s dataset. We used a five year average as a unit of analysis rather than the dyad-year. There are three reasons for this change. First, a large portion of independent variables hardly changed across the time-span of the study. For instance, the strategic location of territory, and the presence of a minority group or natural resource rarely change over time, which means that identical or very similar cases may be used in estimating regression parameters in the dyad-year model. Second, while non-spatial regression models use all the observations, local samples are used for estimating regression parameters in GWR. A small portion of observations that is close enough to a given point, in other words, that are located inside a spatial kernel, is used for estimating GWR parameters. This is problematic in a dyad-year model because if a location has been disputed for forty years there are forty observations geocoded at the same location. The possibility arises that the same location is included in an estimated kernel more than once (possibly forty times) and so the single kernel is created as a function of the same location being counted repeatedly; rather than the geography of, say, forty neighboring disputes. This is not only conceptually undesirable but it also creates a mathematical problem of local multicollinearity (Wheeler and Tiefelsdorf, 2005). Finally, a five-year average rate variable is useful to control for any fluctuation of the dependent variable. The dyad-year configuration often creates a
problematic situation when a territorial conflict has escalated sporadically. For instance, when a disputed place experienced more serious political military conflict in 1980, 1982 and 1984, a dyad-year data design records 1(1980), 0(1981), 1(1982), 0(1983), and 1(1984). If we remind ourselves that independent variables in territorial disputes rarely change, it is not desirable to implement the regression model with a highly fluctuating dependent variable.

As seen in the Figure 3.1, our dependent variable is the percentage of years in the stage of escalated conflict. If a dyad in a particular year experienced either moderate to high levels of diplomatic and political conflict or high levels of diplomatic pressure coupled with militarized confrontations, we assigned 1 otherwise 0. Then the mean of a five year period was calculated (e.g., in the first period in Figure 3.1, the value of the dependent variable is $3/5=0.6$). There are two reasons why the five-year average was used instead of the original binary variable in the year-dyad model. First, the rate variable created by the application of the five-year average is a better method in that it controls for the fluctuation of the variable. This not only eases the distribution of the data but allows for a more meaningful understanding of the escalation of territorial disputes. For example, if a dyad experienced an escalation in years 1, 3 and 5, there will be a series of binary variable, such as 1,0,1,0,1 as seen the first group of variables in Figure 3.1. The subsequent problem is that a highly polarized dependent variable is regressed against independent variables that do not change very much during a short period of time. Instead, the five-year average variable interprets this series of events as if the dyad experienced an escalation in three years of a five-year period. Second, the use of a binary dependent
variable with many binary independent variables in a GWR analysis may result in problematic regression parameter estimation. GWR is very vulnerable to a matrix singularity problem because the local sample is used for the regression parameter estimation, unlike non-spatial regression models such as OLS and ordinary logistic regression. The five-year average was applied for independent variables too using the same method as for the dependent variable. In most cases, this five-year average has no problem since the rate variables did not show much variation and binary variables are very stable over time. If there is a change, however, in the binary variables (e.g., a new security alliance was formed or a new oil field discovered) a new five year period was initiated.

After excluding twenty cases, 109 territorial claims were geocoded. The decreased number of conflicts was a result of cases in which territories were disputed among three or more states (e.g., Spratly Islands among China, Philippines, Vietnam, and Malaysia). The total number of observations was 665, which means on average six observations (or disputes) were stacked on the one geographic point. For instance, there are six observations keyed to the coordinates in the Panama-U.S. conflict over the Panama Canal Zone (1950~1977): 1950~54, 1955~59, 1960~64, 1965~69, 1970~74, and 1975~77.

ANALYSIS

Of 109 territorial conflicts thirty-two cases have never escalated to the higher level of diplomatic and political conflict while seventy-seven cases experienced more serious levels of conflict. Figure 3.2 shows the mean of the dependent variable, which illustrates
the average intensity of a conflict (or how often an individual territorial conflict has experienced a serious level of political and military confrontation in a five-year time period). The spatial pattern is indistinct. At a glance, there have been many escalated territorial conflicts around Israel, but other than that the distribution of escalated conflicts does not show any obvious spatial clustering. However, the absence of any evident spatial clustering does not necessarily mean that there is no spatial story to tell. Thus we estimated a spatial multivariate model to identify and examine the spatial heterogeneous processes in the escalation of territorial conflict.

In the GWR model logistic regression parameters are estimated at every regression point \((u_i)\). The model we estimated can be expressed as:

\[
\text{Escalation of territorial conflict (} u_i \text{)} \sim \beta_0(u_i) + \beta_1(u_i)\text{ties to bordering minority}_i + \\
\beta_2(u_i)\text{economic value of territory}_i + \beta_3(u_i)\text{strategic location of territory}_i + \beta_4(u_i)\text{political unification}_i + \beta_5(u_i)\text{bilateral security ties}_i + \beta_6(u_i)\text{common security ties}_i + \beta_7(u_i)\text{balance of military forces}_i + \beta_8(u_i)\text{challenger’s dispute with others}_i + \beta_9(u_i)\text{democratic norm}_i + \\
\beta_{10}(u_i)\text{previous militarized interstate disputes}_i + \epsilon_i(u):
\]

Where \(\beta_k(u_i)\) indicates that the parameter describes a relationship around location \((u_i)\) and is specific to that location. The notation \((u)\) is a vector of coordinates measured in a predefined coordinate system. Similarly \(\epsilon_i\) is a locally specific error term. In a GWR model, location-specific coefficients, R-square values and \(t\)-statistics are produced at each point instead of one fixed value, as in the case of a global model. Hence it can be seen
whether the local parameters are significantly different from global parameters (Charlton and Fotheringham, 2009).

A set of independent variables was created using the dataset in Huth’s original study. Huth (1996) built a modified realist model integrating conventional realism arguments and the role of domestic politics. Political realism finds the cause of war in the anarchic nature of international politics (Waltz, 1979). States struggle for power to survive and territory is considered as a source of power for realists (Vasquez and Valeriano, 2008). Therefore, the value that a territory has or the political ambition that can be achieved through a territorial claim is one of the main considerations in the understanding of territorial disputes from the realist perspective. There are several variables measuring the range of issues pertaining to territorial disputes, such as the value of territory, both in tangible and intangible terms, and political unification. Huth included several variables to measure the issues at stake to build his model and we chose most of them.

First, strategic location is a binary variable; whether the bordering territory was strategically located. *Strategic location* was defined by a series of criteria, such as proximity to shipping lanes, choke points of narrow straits, military bases, an outlet to the sea, and so forth (e.g., Gibraltar, the Panama Canal). Similar to the strategic value of territory, the *economic value of territory* refers to the tangible value of territory, such as proximity to oil fields, valuable minerals, and water resources. The variable *ties to bordering minority* identifies the presence of bordering populations that are a minority within the target state but share ties of a common language and ethnicity with the largest
comparable ethnic group within the challenger (e.g., Afghanistan refused to accept the Durand Line with Pakistan since Pathan tribes are populated across Afghanistan-Pakistan border). The presence of same ethnic group in neighboring countries is also considered as intangible value of territory since it is related to the national identity. Moreover, this intangible issue makes territorial dispute more difficult to resolve (Hensel and Mitchell, 2005; Dzurek, 2005). *Political unification* was coded as 1 if the predominant language and ethnic group of the population of the challenger and target were the same (e.g., East-West Germany, China-Taiwan, and South-North Korea).

Another aspect of political realism emphasizes the role of major powers and the importance of security alliances in the international system (Waltz, 2000). Territorial disputes do not happen in a vacuum. A challenger in a territorial dispute has to consider the military power of the target state in the dispute to evaluate the possibility of escalation to a militarized conflict or war, as well as estimating the potential support of a third party to the target state. Huth examined the influence of international context by looking at security ties, common security ties, the balance of military power, and whether a challenger has an ongoing territorial dispute with others.

*Security ties* were coded as 1 when the target states had either a defense pact or entente with another state other than challenger state (e.g., Japan-U.S security alliance may work as support for Japan in the disputes against Russia and China). Compared to the security alliance variable that questions whether there are states that are supposed to support the target state, the *common security ties* variable is about the presence of a
collective security alliance. The common security variable was coded 1 if the challenger and target states are in same collective security alliance (e.g., NATO), or they share a common foe in that they are involved in a territorial dispute with the same state (e.g., both China and India have a territorial dispute with Pakistan). *Military balance* is the ratio of the composite index of military expenditure, military personnel, and arms import. 

*Challenger’s dispute with other states* refers to the number of interstate dispute with states other than the target state in a dyad.

Finally, Huth incorporated domestic politics into the conventional realist framework. State leaders have to take public opinion and support into consideration, and not just the international context (Bueno de Mesquita and Lalman, 1990). Prior militarized disputes with neighbors may make it easy for a state leader to elicit more public support for escalating a territorial dispute towards more serious stages involving political and military pressure. Also, there is a widely accepted thesis that political leaders in more democratic states are less likely to resort to the use of military solutions (Maoz and Russett, 1993). To address these issues we included two variables out of Huth’s original model. The *previous MIDs* variable means the number of MIDs between the challenger and target from 1900 to the end of the most recent previous year. *Democratic norm* was constructed from the net democracy score (democracy score minus autocracy score of POLITY II dataset) (Gurr, Jaggers and Moore, 1990). If the net score is 5 or greater it is considered a democratic regime. The final score was the total number of years as a democratic regime in the past 25 years (for details, see Huth, 1996: Appendix C).
We excluded some variables that Huth used in his analysis because they overlap conceptually with the variables included; stalemate situation in negotiations, attempt to change the status quo, and previous defeat in armed conflict. These variables were included in Huth’s original model, but we excluded them to make the model more concise, a necessity since GWR needs a huge amount of computational resources to implement and it is not recommended to include many binary variables because of local multicollinearity (Wheeler and Tiefelsdorf, 2005). The GWR3 software was used to estimate GWR parameters (Charlton, Fotheringham and Brunsdon, 2003).

The GWR method estimates local parameters for each observation by weighting near neighbors more than far neighbors, according to a spatial kernel, in the estimation process (O’Loughlin and Witmer, 2011). As with other spatial statistics using a spatial kernel, the statistics are very sensitive to the size of the kernel. There are two widely used methods in estimating kernel size in GWR. The fixed kernel method designates a size of the kernel. Alternatively the size of the kernel varies with the density of observations in the adaptive method. Although there are pros and cons in both methods we chose an adaptive kernel because we wanted to ensure a valid amount of observations in each kernel to better reflect the geographic realities caused by the variation in state size and number of neighbors across the globe. The distance of the bandwidth for the kernel was estimated by minimizing the Akaike Information Criterion (AIC) (Fotheringham, Brunsdon and Charlton, 2002). The adaptive kernel size estimated in our study was set to include at least eighty-four observations in the kernel. With approximately six observations stacked on one set of coordinates, approximately the closest fourteen territorial claims are included in
a kernel to estimate our regression model. The weights \( W_{ij} \) for each observation in the kernel are then calculated as

\[
W_{ij} = \begin{cases} 
1 - \left( \frac{d_{ij}}{d_{ik}} \right)^2 & \text{if } d_{ij} \leq d_{ik} \\
0 & \text{if } d_{ij} > d_{ik}
\end{cases}
\]

Where \( d_{ij} \) is the distance between observation \( i \) and \( j \), and \( d_{ik} \) represents the distance to the \( k \)th nearest neighbor to observation \( i \).

While local parameters, such as local goodness of fit, local intercepts, and pseudo local coefficients, estimated by GWR are useful indicators to identify and interpret the spatial heterogeneity of the processes behind territorial disputes, cluster analysis is a useful further step to illustrate the spatial groupings, if any, of the parameters. For example, if there is a region where a specific set of variables has a different impact on the escalation of territorial dispute, the cluster analysis would identify the cluster from other cases. A \( k \)-means cluster analysis was implemented to put territorial disputes into several groups, using pseudo local coefficients (\( t \)-values) from the GWR analysis (Windle et al., 2009). The \( k \)-means cluster analysis is a useful and appropriate classification method in that a researcher can examine the division of observations by increasing the number of clusters. The \( k \)-means cluster analysis creates sub-groups using an algorithm of minimizing the maximum distance of a case from the center of its cluster (Kaufman and Rousseeuw, 2005). We examined the classification of zones by increasing the number of clusters from two to
five. The most dissimilar zone would be firstly separated from the entire set of territorial disputes, and progressively more refined clustering identified further sub-groups of cases based upon similar relationships in the GWR.

RESULTS

The results of our GWR, in comparison to Huth’s global model result and OLS regression, are shown in Table 3.1. We included the predicted relationship, from Huth’s analysis, in the second column. The coefficients of our OLS model produced similar results to those of Huth’s ordered probit model. Both the AIC and R-square statistics show that the GWR outperformed OLS, in terms of goodness-of-fit. The R-square values increased from 0.276 to 0.602, and this improvement is statistically significant ($F$-test: 5.36, significant at 0.001 level). Hence it can be said that greater explanatory power was gained by implementing a regression technique that takes into account the geographical location of the observations. Also, there is an implication that the relationships explaining territorial disputes show a high level of regional similarity, and thus a model including regional heterogeneity provides better results than a universal model. The performance of GWR, however, should be interpreted with some caution since it is generally expected that GWR produces better goodness of fit by estimating parameters with similar cases (O’Loughlin and Witmer, 2011). The caution, however, does not impair the justification of employing GWR because the very fact that the better explanatory power comes from using “similar cases” is evidence that there is a considerable level of spatial heterogeneity in the process of territorial disputes.
There is greater substantive value in focusing on the spatial variation of local coefficients rather than general model precision. The last column of Table 3.1 displays the results of the Monte Carlo test of local coefficients, which shows that the spatial variation of local coefficients was significantly different from variation that occurred by chance (Charlton and Fotheringham, 2009). The Monte Carlo test of the local P-values does show significant spatial variations in all variables, including the local intercepts. In other words, the explanatory power of variables varied significantly over space. For instance, the economic value of territory may be an important driving force behind the escalation of territorial disputes in one region but not in others. The statistical results provide strong evidence for our argument that the explanation of territorial disputes requires a regional level of analysis, rather than a universal model. However, despite this insightful implication of GWR, it is not easy to summarize the GWR statistical results to allow for meaningful interpretation since regression parameters are estimated at every single location. To put it bluntly, GWR gives strong evidence for a regional pattern without providing many clues to what that pattern may be. Hence, we tried to understand the spatial variation of the regression parameters using visualization techniques.

Local R-square values and intercepts are mapped in Figure 3-3. The regional pattern of the local R-square statistic (map (a)) shows generally high values in East Asia and the Middle East, and the lowest values in Central America and West Africa. Although the differences among regions are not large, the map shows heterogeneity in the processes driving the escalation of territorial conflicts. The accepted explanation of territorial
conflict that identifies issues at stake and the international and domestic context works well in conflicts in East Asia and the Middle East but does not provide a satisfactory result in other parts of the world. In other words, a universal approach is inadequate. The local intercepts (map (b)) shows regional pattern in the probability of escalation when we controlled for all the independent variables. The values of intercepts are generally high in the conflicts involving Israel and East Asia but low in Central America and Africa. This regional pattern leads to the interpretation that territorial conflicts were more likely to escalate to more serious political and military conflict in conflicts involving Israel, in East Asia, and to some degree Europe. If we remind ourselves that the intensity of territorial conflicts between Israel and its neighbors is not so surprising, and a large proportion of territorial conflict in Europe occurred right after the World War II and has been resolved, it suggests that future scholastic attention be focused upon East Asia.

The local coefficients pertaining to what have been classified as the issues of territorial disputes are mapped in Figure 3.4. Map (a) show the local coefficients of ties to minority ethnic group in a neighboring state (e.g., the U.K. and Ireland). As seen in the map, the variable of ties to minority ethnic group is statistically significant except in Europe and the West Saharan region. The ties to an ethnic minority in bordering states in other regions are more likely to lead states to escalate territorial disputes. The explanatory power of the variable is positively significant in Far East Asia but not significant in Europe. The difference between two regions can be attributed to the fact that some escalated disputes in Europe did not have a minority issue (e.g., East-West Germany), whereas some disputes having minority issues had not escalated much (e.g., Oder-Neisse line between
West Germany and Poland). While the influence of ties to a bordering minority is mixed in Europe, it has a strong positive impact on the escalation of disputes in Far East Asia. For instance, the territorial dispute over the Kuril Islands between Japan and Russia, that has been most seriously disputed during the period that our data covers, is partially driven by the presence of Japanese minorities residing under Soviet/Russian authority. Also the conflict over a small island between South Korea and Japan had not escalated until the mid-1990s and it did not involve a minority issue. Hence, despite the seeming importance of the presence of the same minority group in a neighboring state in increasing the probability of conflict escalation in general, its actual explanatory value can only be understood and evaluated in regional contexts.

In the universal models, the strategic location of territory increases the possibility of the escalation of conflict. More precisely, the strategic value of territory is a strong predictor of escalation in Central and South America but with less importance in other regions (Figure 3.4 (b)). The strategic value of territory, however, is not significant in Asia and East Africa. These findings are likely driven by proximity to an outlet to the sea being one of the most important aspects of the strategic value of territory. In Central and South America there are many conflicts over access to the sea (e.g., Panama vs. USA) or the Amazon River (e.g., Ecuador vs. Peru). The poor explanatory power of the strategic value variable in Asia can be explained by the fact that the borders that were disputed with China were not classified as strategically important territories, which raises questions about the operational definition of strategic location in the dataset. In fact, as Dodds (2003) argued, it is an elusive task to measure the strategic importance of a place since such saliency not
only comes from physical location but also from the dynamic interactions and relative relationships between states.

Second, contrary to the notion of the tangible value of territory (O’Lear et al., 2005) or the “resource curse thesis” (Lujala, Gleditsch and Gilmore, 2005), the economic value of territory only has very localized explanatory power and even, surprisingly, in some cases a negative impact on the escalation of territorial conflict (Figure 3.4 (c)). This unexpected result illustrates the complexity of territorial conflict. In other words, some territories have rarely experienced high levels of political and military conflicts even when the territory has obvious economic value (e.g., Oman vs. United Arab Emirates, Iran vs. Saudi Arabia, Saudi Arabia vs. Kuwait, Saudi Arabia vs. Iraq) while there are a few conflicts over small territories with little economic value in terms of natural resources in the Middle East (e.g., the disputes over some small islands that had little economic value between Iran vs. United Kingdom/United Arab Emirates). This result resonates with the argument that the presence of natural resources has to be understood in the context of resource dependence as well as specific historical and political contexts (Le Billion, 2001).

With regard to political unification (Figure 3.4 (d)), Far East Asia is outstanding and this is mainly because of the tensions between China-Taiwan, the two Koreas and Vietnam. Given that the operational definition of the political unification variable is whether the predominant ethnic group and their language are same across borders, there are many cases in which the ethnic composition in a challenger and a target state are almost identical (e.g., between South American states and Arab states). The political
unification variable, however, is not very influential in explaining the escalation of territorial dispute outside East Asia. The importance of the variable in East Asia is related to the legacy of the Cold War. Stubbs (2002) argued that the two major proxy wars (the Korean and Vietnam Wars) positioned East Asia in the forefront of the Cold War. Also many East Asian states have been under US influence as a part of the US global strategy to contain Communism, which maintained a deep and wide cleavage between divided states in this region (Hemmer and Katzenstein, 2002). Therefore, the explanatory power of political unification in East Asia may be a result of Cold War legacies.

The local coefficients of the variables pertaining to international context are mapped in Figure 3.5. First of all, the presence of a security alliance has a localized impact (Figure 3.5 (a)). Given that the security alliance variable was used to test the impact of external support on the target state, the significant negative coefficient on the cases around Israel comes from the unique aspect of the Israel-U.S. security relationship. Even though the US is a guardian of the security of Israel, there is no official US-Israel security alliance. Therefore Israel has no alliance whereas its neighbors have external support from other Arab countries. Hence, the interpretation of the negative impact of the security alliance variable should rest upon the fact that Israel related territorial disputes show a high level of escalation while the ones between Arab-states in the Middle East are less likely to escalate. The explanatory power of security alliances, however, is very minimal in other regions. Map (b) in Figure 3.5 shows the spatial variation of the regression coefficient of the common security alliance variable. It is generally argued that states sharing a common security alliance are less likely to develop territorial conflicts to more serious stages (Huth
and Russett, 1988; Gibler, 1996). Compared to security alliances, the common security alliances variable is negatively significant in Europe and South America. The significant influence of common security alliances in those two regions can be explained by the role of the Organization of American States (OAS) in Latin America and North Atlantic Treaty Organization (NATO) in Western Europe.

The balance of conventional military capabilities variable lost its explanatory power in the GWR analysis (Figure 3.5 (c)). The variable was significant only in the Gulf region and Far East Asia, but the direction of the relationship is different. The coefficient is positive in the Gulf region and negative in Far East Asia. This means that there is more likely to be an escalation in the Gulf region when two states have a similar level of military build-up (e.g., Iran-Iraq). In East Asia, however, militarily weaker parties (e.g., Taiwan in the Taiwan-China dispute or Japan in the Japan-Russia dispute) do not, it seems, take military power into consideration when it comes to the escalation of disputes.

Challenger’s interstate conflict with states other than the target state is likely to reduce the risk of escalation of territorial conflict (Figure 3.5 (d)). The presence of conflict with other states has preventive impact in Europe and Sub-Saharan Africa. The impact is relatively weak in other regions, which means that in Europe and Sub-Saharan Africa states are more likely to be constrained (and less likely to escalate conflict) by the fact that they are involved in other territorial or non-territorial interstate conflicts. The result can be understood by reference to reputation theory (Walter, 2003 and 2006); a state may maintain a hard-line policy to send a strong signal that it will not withdraw a territorial claim when it has territorial issues with other states. For instance, China had the largest
number of territorial conflicts with nearby states: Taiwan, India, Pakistan, Vietnam, Nepal, Bhutan, and Russia. If China were to rescind one of these territorial claims its negotiation position in other disputes would be weakened, according to reputation theory. The theory works well in Chinese case in that the preventive impact of disputing with third party lost its explanatory power in Asia where majority of territorial disagreements are centered upon around China. However, an epistemological issue here is that the logic of theories must be understood within specific regional contexts, and may provide guidance at the regional scale rather than universally.

Finally, two variables pertaining to domestic context were examined. The domestic context is an important factor in that state leaders need public support to pursue conflicts and such support is created differently according to the political regime type of a state (Maoz and Russett, 1993; Huth and Allee, 2002). First, the democratic norm has a much localized influence in explaining the escalation of territorial disputes. In Figure 3.6 (a), the democracy index is only significant in East Africa, which may mislead in the interpretation of the analysis. The significant negative local coefficient in East Africa can be explained by the fact that territorial disputes in East Africa involve European colonial powers’ (with high democracy scores) claims on their former colonies in the 1950s and 1960s (e.g., Ethiopia vs. France, Ethiopia vs. U.K., Madagascar vs. France). The explanatory power of the democratic norm thesis is localized in the explanation of territorial disputes, which suggests a caveat must be applied when using the thesis in the study of territorial disputes (Senese and Vasquez, 2008).
Finally, the number of MIDs in the previous period is an informative variable (Figure 3.6 (b)). The local coefficients are not significant in the Americas and have a marginal impact in West Saharan Africa and Europe where a relatively high number of previous MIDs did not directly result in the escalation of territorial conflict (e.g., France vs. U.K., Germany vs. Poland). In other regions, however, the number of previous MIDs is more closely related to the escalation of territorial conflicts (e.g., Vietnam vs. Cambodia and India vs. China). This finding may be a reflection of the relative longevity of established borders in the Americas and Europe compared to parts of Asia, while the case of Western Saharan Africa may support Herbst’s (2000) claims regarding the lack of saliency of border disputes in Africa.

Overall the results of the GWR show ample reason to question an understanding of the causes of territorial conflicts that rests upon universal applications. To be clear, there is no reason to challenge the claims of his analysis that the variables included in his model do combine to provide an explanation of the escalation of conflict. However, the GWR shows that not all variables are relevant in all regional settings. Some variables help explain territorial conflicts in some regions but not others. By visualizing the explanatory power of each of the independent variables a story of a complexity of regional contextual effects is discovered inductively.

To make further sense of the regional complexity, and provide a basis for future theory building, a $k$-means cluster analysis was conducted to highlight the particular role of explanatory variables in particular regions (Figure 3.7). The results of the first round ($k =$
2) in map (a) show that territorial disputes (cluster A) in East Asia and Oceania are separated from others (cluster B). Cluster A is a very small regional feature including disputes between China-Russia, Japan-Russia, Japan-South Korea, the two Koreas, East Timor (between Portugal-Indonesia), New Guinea-Indonesia, and Vanuatu-France. Escalation of territorial disputes in East Asia and Oceania are driven by ties to a bordering minority, and the aim of political unification (Table 3.2). However, the means of local GWR coefficients for the variables measuring the strategic and economic values of territory are negative in East Asia and Oceania, which suggest that the territorial disputes in this region are more likely to escalate by the presence of an ethnic minority that has ties in neighboring states (e.g., Russia and Japan) and political divisions (e.g., the two Koreas) rather than the tangible value of territory. Also, in East Asia and Oceania the mean of the \( t \)-value for the balance of military power variable is negative and significantly different from those in the other cluster. In other words, the universal relationship suggesting that a larger military disparity increases the probability of escalation of territorial dispute does not hold in East Asia and Oceania.

In the second round of clustering \((k=3)\), cases in Oceania (cluster C) was separated from the East Asian cluster. The key difference between the East Asian cluster (A) and the Oceania cluster (C) is that the strategic value variable has a positive relationship with the escalation of disputes in Oceania compared to the rest of the world. This finding may be a reflection of the situation of these disputes within the Pacific Ocean. In the third round of cluster analysis \((k=4)\) the biggest cluster in the previous stages was divided into two categories. Cluster D is composed of territorial disputes in South and South East Asia and
the Gulf region while Cluster B includes ones in Americas, Europe, Africa and conflicts between Israel and its neighbors. Compared to the cluster B, the conflict escalations in cluster D is positively correlated to the presence of a security alliance and negatively correlated to the strategic value of territory. The positive sign of the security alliance variable means that the security alliances of target states, especially in South East Asia, do not work very well to prevent a challenger’s intention to escalate territorial disputes. If we remind ourselves that a large proportion of territorial disputes in South East Asia is between China and South East Asian states (e.g., China vs. Vietnam and China vs. Philippines) and among South East Asian states (e.g., Thailand vs. Cambodia and Thailand vs. Laos), many of the security alliance in South East Asia (e.g., China-Cambodia, Vietnam-Russia, Thailand-U.S., Philippines-U.S., and Malaysia-U.K. security alliance) were not effective in thwarting the challengers’ intention to take more aggressive steps. Also, territorial disputes in cluster D show that the value of territory has a different influence on the escalation of territorial disputes according to regional context. Table 3.2 shows that the economic value of territory is a driving force behind the escalation of territorial disputes in the South East Asian cluster whereas strategic value of territory is correlated to escalation in cluster B.

In the last stage of clustering, the largest cluster in the previous stage is divided into two clusters. Cluster E includes territorial disputes between Israel and its neighbors and East African cases. Compared to cluster B that covers escalation in Europe, the Americas, and the Western Sahara, GWR parameters in cluster E show significant differences in the direction of the relationship with the presence of a security alliance, previous MIDs, and
the economic value of territory. The negative sign of the security alliance variable can be explained by the unique nature of the US-Israel alliance. Therefore the negative coefficients of the alliance variable in cluster E simply means that territorial disputes between Israel and its Arab neighbors are more likely escalate than those between Arab countries, such as Jordan’s claim against Saudi Arabia, because of security alliances with other Arab states. The positive impact of previous MIDs in suggests that territorial disputes in cluster E are more perennial. For example, disputes between Jordan-Israel, Syria-Israel, and Egypt-Israel have shown serious political and military confrontations over time. In addition, the negative influence of the economic value of territory shows that the general expectation that resource-rich territory is more likely to lead states into more serious territorial dispute does not work in this region, as opposed to the role of economic s in the Gulf region and South and Southeast Asia.

The result of the $k$-means cluster analysis is helpful to summarize the massive amount of information that the GWR analysis produced. The clustering technique, and the visualization of the results, provides strong evidence of the regional nature of the varying causes of territorial dispute escalation. The mapping of the cluster analysis suggests that the GWR analysis of territorial disputes is not merely a negative step that challenges the explanatory power of universal models. Instead, our analysis encourages scholars to use the information suggested in universal models to construct theories explaining the spatiality of the data that is situated within the historical processes of regional geopolitical processes.
CONCLUSION

The empirical finding of the regional variation in the explanatory value of variables commonly used to explain territorial conflict should not be seen as a simple negative or retrograde step aimed at debunking universal models of territorial conflict. Our findings confirm that the established variables correlated with territorial conflict continue to have explanatory value. However, our findings show that their explanatory value varies considerably depending upon the regional setting of the conflict. Rather than resorting to idiosyncratic and case study approaches we would suggest that our findings require a new bout of theorization that takes into account how the long-term historical processes of imperialism, colonialism, state formation, and national separatism have fused in different ways in different parts of the world to form regional contexts. These contexts are, simultaneously, the setting for and the product of different causes of territorial conflict that manifest in a spatially heterogeneous manner. Hence there is a need to theorize and model territorial conflict in a manner that is driven by an epistemology that sees regional heterogeneity as an essential component of the processes of territorial conflict.

To date, scholars in quantitative peace science have studied territorial conflicts at a global scale. Thus the determinants of territorial conflict are assumed to have universal explanatory power over space. Recent developments in spatial analysis, however, have allowed scholars to investigate civil wars at a sub-national scale instead of relying on state-level data. We build upon the contribution made by disaggregated research trend of civil wars and the spatial analysis of interstate conflicts, as well as the traditional notion of
geography focusing on spatially heterogeneous processes. Using GWR and cluster analysis we evaluated the existing explanations of territorial conflict provided by global scale analysis. Despite the disaggregating approach being conceptually appropriate, in that each territorial conflict has its own historical and state building backgrounds, it is not easy to apply the GWR method to territorial conflict. After adjusting for some methodological problems we tested Huth’s (1996) foundational work by adding a specific focus upon spatial heterogeneity. The result of our GWR shows that the escalation of territorial conflict cannot be fully explained by one global model. There is a high level of spatial variation in the regression parameters and the explanatory power of the model varies over space. Although our analysis may be preliminary, in that we used the existing dataset that was not built for sub-national spatial analysis, the result of the GWR suggests that there is a necessity and possibility to pursue the local or regional approach to the study of territorial conflict.
### Table 3.1 Parameter estimates for global and geographically weighted regression models

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>Huth’s Model</th>
<th>OLS</th>
<th>GWR</th>
<th>Median value</th>
<th>P- value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>model prediction</td>
<td>B value</td>
<td>S.E</td>
<td>P- value</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-</td>
<td>0.241</td>
<td>0.038</td>
<td>&lt;0.01</td>
<td>0.287</td>
</tr>
<tr>
<td>Ties to bordering minority</td>
<td>+</td>
<td>0.291</td>
<td>0.038</td>
<td>&lt;0.01</td>
<td>0.348</td>
</tr>
<tr>
<td>Economic value of territory</td>
<td>-</td>
<td>-0.054</td>
<td>0.032</td>
<td>0.09</td>
<td>0.000</td>
</tr>
<tr>
<td>Strategic location of territory</td>
<td>+</td>
<td>0.143</td>
<td>0.037</td>
<td>&lt;0.01</td>
<td>0.244</td>
</tr>
<tr>
<td>Political unification</td>
<td>+</td>
<td>0.264</td>
<td>0.039</td>
<td>&lt;0.01</td>
<td>0.334</td>
</tr>
<tr>
<td>Security ties</td>
<td>-</td>
<td>-0.005</td>
<td>0.035</td>
<td>0.87</td>
<td>0.000</td>
</tr>
<tr>
<td>Common security ties</td>
<td>-</td>
<td>-0.185</td>
<td>0.036</td>
<td>&lt;0.01</td>
<td>-0.168</td>
</tr>
<tr>
<td>Balance of military forces</td>
<td>+</td>
<td>0.126</td>
<td>0.064</td>
<td>0.05</td>
<td>0.094</td>
</tr>
<tr>
<td>Disputers with other states</td>
<td>-</td>
<td>-0.042</td>
<td>0.008</td>
<td>&lt;0.01</td>
<td>0.003</td>
</tr>
<tr>
<td>Democratic norms</td>
<td>-</td>
<td>0.001</td>
<td>0.002</td>
<td>0.58</td>
<td>0.000</td>
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<tr>
<td>Previous MIDs</td>
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<td>0.012</td>
<td>0.002</td>
<td>&lt;0.01</td>
<td>0.010</td>
</tr>
<tr>
<td>Akaike Information Criterion</td>
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<td>635.68</td>
<td></td>
<td></td>
<td>416.97</td>
</tr>
<tr>
<td>Adjusted R-square</td>
<td></td>
<td>0.276</td>
<td></td>
<td></td>
<td>0.602</td>
</tr>
</tbody>
</table>

---

a) In Huth model, all independent variables included here are statistically significant at 0.05 level

b) Test for spatial variability of parameters (Monte Carlo test of spatial variation)
Table 3.2 Comparison of clusters: Mean GWR parameter estimates for each group identified by the $k$-means cluster analysis

<table>
<thead>
<tr>
<th>K</th>
<th>Clusters$^1$</th>
<th>n</th>
<th>Ties to Bordering Minority</th>
<th>Strategic Value</th>
<th>Economic Value</th>
<th>Political Unification</th>
<th>Alliance</th>
<th>Common Alliance</th>
<th>Military balance</th>
<th>Challenger's Disputes</th>
<th>Democracy</th>
<th>Prior MIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>A</td>
<td>9</td>
<td>0.89</td>
<td>-0.35</td>
<td>-0.18</td>
<td>1.01</td>
<td>-0.06</td>
<td>-0.33</td>
<td>-1.04</td>
<td>-0.05</td>
<td>-0.16</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>100</td>
<td>0.34</td>
<td>0.29</td>
<td>-0.007</td>
<td>0.26</td>
<td>-0.14</td>
<td>-0.15</td>
<td>0.21</td>
<td>-0.11</td>
<td>-0.006</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>F-statistics$^2$</td>
<td></td>
<td>35.40***</td>
<td>24.81***</td>
<td>4.17**</td>
<td>46.98***</td>
<td>0.39</td>
<td>2.94*</td>
<td>90.23***</td>
<td>1.96</td>
<td>2.75</td>
<td>2.85*</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>6</td>
<td>0.71</td>
<td>-0.09</td>
<td>-0.22</td>
<td>0.88</td>
<td>-1.17</td>
<td>-0.63</td>
<td>-1.18</td>
<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>B</td>
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<td>1.26</td>
<td>-0.89</td>
<td>-0.12</td>
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<td>0.16</td>
<td>0.27</td>
<td>-0.78</td>
<td>-0.23</td>
<td>-0.03</td>
<td>0.06</td>
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<tr>
<td></td>
<td>C</td>
<td>3</td>
<td>0.34</td>
<td>0.29</td>
<td>-0.01</td>
<td>0.26</td>
<td>-0.01</td>
<td>-0.16</td>
<td>0.22</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.00</td>
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1) The clustered are keyed to Figure 3.7 by the shape of legends. Cluster A: Triangles, Cluster B: Circles, Cluster C: Pentagons, Cluster D: Squares, and Cluster E: Crosses.
2) ANOVA test was conducted to see if the difference between mean of local t-value in clusters is statistically significant.
3) * $P< .1$; **$P< .05$; ***$P< .01$
FIGURES

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Figure 3.1 Creating 5 year average variables (a hypothetical case)
Figure 3.2 Average intensity of territorial conflict
Figure 3.3 GWR: Local parameters (local R-squares and intercepts)
Figure 3.4 GWR: Local coefficients (issues at stake)
Figure 3.5 GWR: Local coefficients (international context)
Figure 3.6 GWR: Local coefficients (domestic context)
Figure 3.7 Results of k-means cluster analysis of the pseudo t-values from the GWR analysis
CHAPTER 4

CONCLUSIONS

This research has sought to advance the knowledge of international cooperation and conflict by applying geographical perspectives and spatial analytical techniques. In other words, the research question is how the conclusions drawn from previous analyses of international cooperation and conflict must change once geographical perspectives are incorporated. Especially, the dissertation has explored what kinds of new findings and implications can be made by interrogating particular expressions of cooperation and conflict through the lens of quantitative political geography. In the two separate but related analyses geographical concepts and analytic techniques were used to explore the appropriate epistemology and ontology for analyzing international politics. In particular, the common emphases in spatial analysis, such as spatial dependence and spatial heterogeneity, were used to examine the findings of existing studies. The results of each chapter suggest that the geographical perspective opens the door to providing fresh insight to previous studies and advancing our knowledge of international cooperation and conflict.

The first analysis studied UN voting alignment with the U.S. as a way to examine the process of U.S. hegemony. The trend of increased support for the U.S. in the UN after the collapse of the communist bloc followed by decreased support in 1990s, as identified in previous studies, was confirmed. Furthermore, our analysis finds that the trend of
decreased support continued into the 2000s. The general trend of declining voting alignment, however, shows significant regional variation. The regional variation was not negligible as to be set aside as a nuisance or to be controlled for by adding more variables. Also the regional variation and regional clustering has been increasing since the end of the Cold War. In previous studies the regional variations have been taken for granted or have been explained by similarities in the political and economic characteristics of neighboring states. Also, voting blocs defined by political preferences, such as the Warsaw Pact group and membership in the Non-Alignment Movement (NAM), have been believed to account for the unexplained variations in previous models based on political affinity and economic affluence. However, the visualization of the voting alignment trend and univariate spatial analysis provoked a more rigorous spatial analysis to understand the nature of the spatial clustering pattern. Given that geography has been included in many studies as a simple regional dummy variable, the spatial regression model used in this research is an attempt to include geography in a more serious manner. The result of the spatial regression model shows that voting alignment with the U.S. is to some degree a product of political regionalization: The decline of support for the U.S. in the UN is not a universal process but has different manifestations according to the region a state is situated in. Also key variables, that are identified with both realist and liberal perspectives, showed significance during different Presidential administrations, suggesting that the process of building a hegemonic consensus involves the complex exercise of hard and soft power. These findings suggest that the hegemonic power of the U.S. is being challenged through its declining ability to set a political agenda within the UN General Assembly, that building such a consensus is undertaken through the exercise of both hard and soft power, and to
some degree involves regionalization as a geographical expression of the declining ability of the U.S. to set a global political agenda.

The regional approach in this dissertation, using a spatial analytic technique, provided a contextual understanding of how U.S. hegemony is mediated in space and showed the necessity that the findings of previous non-spatial models be reexamined. Despite the achievements, however, there are some issues or limitations to be mentioned for future research. First of all, the concept of a region is not ontologically clear, including in the cases within this dissertation. In general, if we mention a region, we are more likely to imagine a distinctive group of countries, such as Western Europe and South America. In this sense, the world is composed of the mosaics of regions that are supposed to have some level of homogeneity within the regions and heterogeneity between regions. The incorporation of regional context in a spatial regression model is accomplished by the configuration of a spatial weight matrix. The spatial weight matrix, however, does not designate any distinctive and fixed region for the analysis. Rather, the concept of a region is continuous and defined as proximity between states. In other words, a region is defined as neighboring states of every single state. For instance, the neighboring states of the U.S. are Canada, Mexico, and Cuba while Mexico’s neighbors are the U.S. and many other Central American States. This approach is substantially different from the traditional configuration of regions, such as North America, Anglo America, and Central America and so forth.

The second limitation is a necessity for further research on the origin of spatial dependence. Spatial dependence was included in the model as spatial autocorrelation in
the error term, since a spatial error model was used instead of a spatial lag model that envisions direct interaction between spatial units. Thus, the spatial dependence in the politics of UN voting needs nuanced explanation. As discussed above, strong spatial dependence and a neighboring effect can be partially explained by a regionalization trend in global politics. The presence of a neighboring effect in the regions that have not gone through political or economic integration needs to be further studied. Also, there may be a benefit to case studies illustrating how and why states in a region tend to show a similar voting pattern.

Recent developments in spatial analysis and spatial data have allowed researchers to investigate various geographical factors in the quantitative analysis of conflict and war (Ward, 2002). Despite the importance of territory in interstate conflict, however, there has been a limited interest in the application of spatial analysis to the study of territorial conflict. The existing explanations of territorial conflict provided by a global scale analysis that assumes a spatial consistency in the sign and significance of the explanatory variables was critically examined by using Geographically Weighted Regression (GWR). Specifically, Paul Huth’s (1996) foundational work was revisited by using GWR to examine whether there is any change in the explanatory power of variables and whether there is evidence of spatial clustering or a spatial regime. The result of the GWR shows that the escalation of territorial conflict cannot be fully explained by one universal model. There is a significant level of spatial variation in the regression parameters, and the explanatory power of the model varies over space. A $k$-means cluster analysis was implemented for a further investigation of the regional regime of the underlying causes of
escalating territorial disputes. The result of the GWR suggests the necessity and possibility of pursuing a local or regional scale approach to the study of territorial conflict, an approach that challenges an epistemology of seeking a single explanation for the causes of conflict that neglects regional context.

While this dissertation focused on the spatial heterogeneous nature of the process of the escalation of territorial disputes, and provided empirical evidence, there are some caveats to be mentioned for the implication and future application of this study. First, this study only covers from 1950 to 1990. The time period generally overlaps the Cold War period while national self-determination was another important issue after World War II. Therefore, some territorial disputes are not only about territorial disagreements but should also be understood in the context of the Cold War. Future research using an expanded time span may be necessary to understand territorial disputes after the end of the Cold War and, to some extent, to isolate the Cold War influence on territorial disputes. Second, $k$-means cluster analysis was used to summarize the result of GWR. A cluster analysis as a summarizing technique, however, may give a false implication that the cases in the same cluster are identical, which is not often the case. The result of the cluster analysis only shows the general trend in the association of territorial disputes and independent variables.

In sum, I tried to incorporate geographical perspectives and methodologies into the study of international politics. Political geographers have examined political processes through the application of geographical concepts and quantitative methods to show how political processes have been mediated in space. Despite such achievements, the
quantitative analysis of international politics has not been a dominant research trend in political geography. In this dissertation, I tried to investigate international political issues through the application of the geographical concepts of scale and context using recent developments in spatial analysis.

The spatial analysis of the support for the hegemonic state, the U.S., in the UN general assembly and the regional scale analysis of the escalation of territorial disputes show that the application of geographical perspectives can provide a better understanding of international politics. In particular, the support for the U.S. hegemony in the UN general assembly should be examined at a regional scale because of the increasing regionalization pattern in global politics. In other words, the existing explanation about the level of support for the U.S. is not satisfactory because there is a strong spatial neighborhood influence after the key explanatory variables are controlled for. Also, the analysis of the escalation of territorial disputes with a consideration of spatially heterogeneous spatial processes shows that previous explanations based on a universal model on territorial conflicts should be revisited. The explanatory power of a spatial model designed to take spatial heterogeneity into consideration outperformed the conventional non-spatial model. Moreover, the explanatory power of key independent variables significantly changed over space.

The results of both sets of analysis suggest that a contextualized understanding of the politics of international cooperation and conflicts, using different scales than the global scale, should be further pursued. A geographic ontology that emphasizes regional and
local context requires an epistemology that questions universal models and, using spatial analytical methodologies, interrogates context-sensitive approaches.
REFERENCES


Smith, N. 1989. The region is dead! Long live the region!. *Political Geography* 79(2): 141-152.


