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The Effects of Geospatial-Intelligence on United States-Mexico Border Security

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University of Southern Mississippi

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The Effects of Geospatial-Intelligence on United States-Mexico Border
Security

by

Heather R. Martin

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ABSTRACT

Following the September 11, 2001 (9/11) terror attacks on American soil,

politicians and the media drew a parallel between US-Mexican border security issues

such as illegal immigration, and terrorism, highlighting an increased need to secure our

southern border in an effort to prevent another 9/11-style terror attack (Maril 2011).

Under securitization theory, the linking of border security issues such as illegal

immigration to terrorism can be defined as a securitization act or more simply put, the

portrayal of a specific issue as a threat to national security (Balzcaq 2011). Once an issue

has been deemed a threat ("securitized"), the use of a specific securitization instrument or

tool to counter said threat can be justified (Balzcaq 2011). This dissertation assesses the

applicability of securitization theory to US-Mexico border security by studying the

effects of a particular securitization instrument and tool fielded along the US-Mexico

border, Geospatial Intelligence (GEOINT). Through the use of securitization theory, and

more specifically a comparative case study involving the use of descriptive data, content

analysis and interview data, four cases (California, Arizona, New Mexico and Texas)

were evaluated. This study considers the operational and technical aspects of GEOINT in

these states, as well as the political and symbolic characteristics of this tool and finds that

GEOINT provides critical information to border security experts and planners by

providing pattern-of-life information pertaining to high-traffic illegal border crossing

areas and, that the presence of GEOINT resources along the border plays a role in

reproducing the narrative associated with the threat of illegal immigration along the US-

Mexico border (Balzacq 2008). Further, this study finds that securitization theory is not

only applicable to the US-Mexico border security problem set but also provides a

framework for evaluating both the operational and symbolic effects of securitization

instruments.

ACKNOWLEDGMENTS

DEDICATION

This dissertation is dedicated to my family. To my husband, Carl, you have been my rock. Your love and support are the reason I have achieved this milestone in my life. I look forward to supporting you in achieving your next major life milestone. To my sons Logan and Carter, you have graciously loaned me time out of your childhood to conduct research for this dissertation, I promise to pay you back. To my parents Elaine, Dorothy and Henry, as academics and leaders in your professions, you have been amazing role models through my life. I cannot thank you enough for supporting me through this journey; I am blessed to have parents like you. To my grandmother Louise, thank you for showering my sons with attention while I conducted research for this dissertation. To my extended family, thank you for your encouragement through this very long process. Finally, this dedication would not be complete without recognizing my brother. His absence serves as a constant reminder to me about what is truly important in life.

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CHAPTER I - INTRODUCTION

Problem Statement & Background

On September 11, 2001 (9/11), members of the Al Qaeda terrorist organization hijacked four airplanes and conducted simultaneous attacks on American soil. Over 3,000 lives were lost on that September morning, during which 19 Al Qaeda operatives targeted symbols of American strength, power and identity (9/11 Memorial 2015). The attacks on the World Trade Center, the Pentagon and what would likely have been an attack on the Capitol or the White House had it not been for the heroic passengers of United Airlines Flight 93, tested America's defense capabilities as well as its resolve. In the aftermath of 9/11, politicians, the media and various interest groups were quick to draw a parallel between US-Mexican border security issues, namely illegal immigration, and terrorism, citing the potential for terrorists to enter the United States via the porous US-Mexican border (Maril 2011). As a result, a renewed focus and discussion on US-Mexican border security emerged (Longmire 2014). The tie between illegal immigration and terrorism post 9/11 can be classified as a "securitization act" or, more simply put, the portrayal of an issue as an increased security threat in order to justify a specific response to such threat (Maril 2011, Balzacq 2011). This post-9/11 securitization act, also known as a securitizing move, resulted in the employment of securitization instruments and tools along the US-Mexico border in an effort to counter said threat. This dissertation explores the use of one particular securitization instrument and tool fielded along the US-Mexico border, Geospatial Intelligence (GEOINT). Through the use of securitization theory, this study focuses on the operational and technical aspects of this securitization instrument and tool (GEOINT) as well as the political and symbolic aspects of this tool in order to

determine the role of GEOINT in reproducing the narrative associated with the threat of illegal immigration along the southern border of the United States (Balzacq 2008).

Research Questions & Central Arguments

Three research questions are presented in this dissertation in order to evaluate both the operational and symbolic aspects of GEOINT as a securitization instrument and tool:

1. To what extent does securitization theory explain the role of GEOINT, as a securitization instrument and tool, in reproducing the narrative associated with the threat of illegal immigration along the US-Mexico border?
2. To what extent has GEOINT, as a securitization instrument and tool, affected US-Mexican border security generally and, specifically, the ability of the United States to both detect and apprehend individuals who cross the border illegally?
3. To what extent has the United States been able to fully utilize the benefits that GEOINT, as a securitization instrument and tool, can offer along the border?

Five central arguments are presented in this dissertation:

1. Securitization theory illustrates that GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed.

2. An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has, in general, positively affected US-Mexican border security, by providing law enforcement and border patrol agents an increased understanding of the border, including pattern-of-life information pertaining to where illegal border crossers tend to cross.

3. An increase in GEOINT capabilities along the US-Mexican border since the 9/11 attacks has positively affected US-Mexican border security by specifically increasing America's capacity to *detect* individuals crossing the border illegally.

4. An increase in GEOINT capabilities along the US-Mexican border since 9/11 has positively affected US-Mexican border security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally.

5. The United States has been unable to fully utilize the benefits of GEOINT capabilities (such as being able to analyze and take action on all GEOINT collected) along the border due to a shortfall in analyst and agent manpower.

Literature Summary

This dissertation is grounded in existing securitization theory literature. Securitization theory is concerned with the construction of threats through the use of certain language, actions, images, tools and practices (Balzacq 2011). Securitization theorist Thierry Balzacq explains that threats come into being through a process in which political elites frame a particular issue in a way that impacts the audience (usually the

public), giving the impression of an emergency or immediate threat that requires an immediate response, typically involving the implementation of a specific policy or the use of a particular tool to combat such threat (Salter and Piche 2011, Nevins 2002).

Three levels of analysis are offered under securitization theory: Agents, Acts and Context. The Agents level of analysis is concerned with understanding the actors that seek to securitize issues and/or the actors that resist securitizing moves. The Acts level of analysis is concerned with understanding the practices of securitizing actors such as the use of certain language, narratives and framing to securitize an issue as well as outcomes of securitizing moves such as policy outcomes and the use of securitization instruments and tools. The Context level of analysis is concerned with studying the context in which securitizing moves occur. Balzacq (2011) recommends using the level of analysis that is most appropriate for the research question at hand, as opposed to using all three levels of analysis.

Most securitization studies focus on the discourse surrounding a securitization move, as opposed to focusing on security instruments, tools and the outcomes of securitizing moves. Balzacq (2008) explains "understanding the rationales behind security tools as well as their nature and effects helps to nudge securitization studies in a new direction by unearthing certain elements that might not easily surface otherwise at the level of discourse." This dissertation seeks to build on and contribute to the aforementioned new direction for securitization studies that Balzacq describes by using securitization theory's Acts level of analysis to evaluate a specific security instrument and tool, GEOINT.

Balzacq (2008) defines an instrument of securitization as something that is implemented *after* the successful securitization of an issue (after something has been deemed a threat), and more specifically, something that is implemented in response to that threat. In other words, an instrument of securitization does not create a threat, it is employed to counter the threat. Balzacq (2008) explains that it is important to look not just at the operational and technical aspects of a specific instrument but also at the symbolic aspects of the instrument. He states, "there are symbolic attributes built into policy instruments that tell the population what the [securitizing actor] is thinking and what its collective perception of problems is" (Balzacq 2008, Peters and van Nispen 1998). In the case of this dissertation, GEOINT is a securitization instrument employed in response to the initial and continued successful securitization of illegal immigration along the southern border.

According to Balzacq (2008), some instruments of securitization become securitizing tools. A securitizing tool is "an instrument which, by its very nature or by its very functioning, transforms the entity (i.e. subject or object) it processes into a threat" (Balzacq 2008). In other words, the mere use of the securitization tool further securitizes the issue. Salamon (2002) describes a securitization tool as a package consisting of four parts: "A type of good or activity (e.g. the provision of information, training, surveillance); a delivery vehicle for this good or activity (e.g. media, electronic devices); a delivery system, that is, a set of organizations that are engaged in providing the good, service or activity (e.g. an agency, air carriers, a Directorate General); and a set of rules, whether formal or informal, defining the relationship among the entities that comprise the

delivery system (e.g. the EU Directive on the retention of telecommunication data"

(Salamon 2002).

This dissertation seeks to demonstrate, using securitization theory, that GEOINT

serves not only as a securitization instrument used to combat the threat of illegal

immigration, but also a securitization tool, given its presence along the US-Mexico

border, coupled with the nature of what it collects and the availability of the data that it

collects, further securitizes illegal immigration by contributing to the existing narrative

that the border is an unsafe place, one that requires military-like policing and

reconnaissance. Further, using securitization theory, this dissertation evaluates the role of

both the public and government elites in driving and shaping the existing narrative

surrounding the illegal immigration threat along the southern border and the role of

GEOINT in combating that threat.

This dissertation is also grounded in existing US-Mexican border security

literature. Common themes throughout the literature focus on the US federal

government's inability to secure the border, its tendency to oversimplify border issues

(thus providing inadequate and simplistic solutions), multiple failed attempts at acquiring

and effectively fielding new technologies along the border, as well as a consistent

unwillingness to accept that an effective solution to border security will be one of various

elements and of complex detail, given the complexity of border issues (Longmire 2014).

Existing GEOINT literature largely consists of studies pertaining to the use of

GEOINT Information Systems, the sharing of GEOINT information across military

organizations and the tactical employment of special GEOINT sensors (Richards 2010,

Thomas 2006). The term GEOINT emerged in in literature in 2005 with the term

"IMINT", short for "imagery intelligence" being the most commonly used term prior to 2005 (GEOINT Symposium 2015). According to United States Code Title 10, §467, GEOINT is defined as the "exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the earth. Geospatial intelligence consists of imagery, imagery intelligence, and geospatial information". In terms of literature specifically addressing the use or application of GEOINT along the US-Mexican border, the existing US-Mexican border security literature only scratches the surface, largely focusing on the physical and virtual border fences but not providing detailed information pertaining to the utilization and effects of GEOINT capabilities for border security.

Existing literature on GEOINT in general is outdated and often utilizes antiquated terminology. For example, Maril (2011) offers a glimpse at the construction of both the physical and virtual (technology-based/GEOINT based) fence along the US-Mexican border. Longmire (2014) provides similar insight by offering information on how intelligence is collected along the border and distributed to fusion/operations centers along the border for action. Nevins (2002) offers a specific look at the physical and virtual fence along the California-Mexico border while also discussing the securitization and criminalization of border issues. Collectively, each of these pieces of literature offer a brief explanation of the technologies (including GEOINT technologies) utilized along the border. However, GEOINT is only briefly discussed.

This dissertation also leverages existing literature pertaining to the framing of border security issues. The successful establishment of illegal immigration as a national security threat (the securitization of illegal immigration), occurred in the late 1960s to

early 1970s. Illegal immigration was portrayed (framed) in the media in specific ways that contributed to the narrative that illegal immigration posed a security threat. These frames have been augmented and amplified over the years with the most recent amplification occurring after 9/11.

Existing literature reveals that there have been four major waves in terms of amplification or shifting of national security frames relating to border security and particularly immigration as it relates to border security since the 1970s. The first wave which occurred in the 1970s was largely a result of the Chicano rights movement that occurred in the 1960s (Nevins 2002). Due to increased awareness and media coverage of the Chicano rights movement, a growing concern over the economic effects of the influx of illegal immigrants in the United States, especially the influx into California, resulted in the construction of a "border crisis" (Nevins 2002). The second wave of amplification of security frames relating to border security occurred in the 1980s and was largely focused on the War on Drugs, with an increased framing of the drug crisis and its impacts on national security.

The third wave of amplification of security frames relating to border security occurred in the 1990s and like the first wave, was largely focused on illegal immigration as a threat to the American economy. The shift in focus and amplification of frames during this time was largely attributed to the recession that occurred in the early-mid 1990s. Under this wave, an increased linking of deteriorating socio-economic conditions to illegal immigration occurred and was frequently highlighted in the media.

The fourth amplification of security frames occurred in 2001 with the occurrence of the 9/11 attacks, which specifically drew a link between border security issues and

terrorism. As outlined by Longmire (2014), as a result of this major attack on American soil, an increased focus on border security, especially US-Mexican border security and terrorism occurred. Politicians at both the state and federal levels began to focus on the potential tie between the porous US-Mexican border and trans-national terrorism (Maril 2011). Longmire, Nevins and Maril each highlight the four-aforementioned border security framing waves that have occurred and each explain that with each wave came a new justification for a particular solution to be implemented along the border, be it a border security operation, an increase in manning, an increase in technology or all of the above.

This dissertation contributes to the field of security studies in four ways: first, it assesses the applicability of securitization theory to the US-Mexican border security situation post 9/11, particularly leveraging the "Acts" level of analysis to explain the effects of a specific securitization instrument and tool (an area often overlooked in securitization literature). Second, it assists in filling the existing gap in GEOINT-specific US-Mexican border security literature by providing detailed information on the operational and symbolic effects of GEOINT on US-Mexican border security. Third, it provides information on the role of GEOINT, as a securitization instrument and tool, in affirming narratives associated with a dangerous border (as a result of illegal immigration) and the urgency to secure it.

<center>Research Design</center>

This dissertation conducts a qualitative analysis, specifically a comparative case study using Thierry Balzacq's second level of securitization studies analysis, the "Acts"

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level of analysis. It involves four cases (California, Arizona, New Mexico and Texas) in order to study the effects of a specific securitization instrument and tool (GEOINT). This study utilizes three main techniques: analysis of descriptive statistics, content analysis and interviews. Department of Homeland Security (DHS)/US Customs and Border Protection (CBP) and state-owned GEOINT capabilities (ground and airborne full motion video, Infrared and Synthetic Aperture Radar sensors) are the focus of this study; Department of Defense (DoD)-owned GEOINT capabilities are not included in this study due to classification of DoD GEOINT missions.

Each of the four case studies include information on the use and effects of GEOINT along the border from 1996-2014. Pre-9/11 data is included in this study in order to establish a baseline of illegal border crosser detections, apprehensions and technology along the border before the 9/11 terror attacks. Post-9/11 data is included in order to evaluate the status of illegal border crosser detections and apprehensions as well as GEOINT technology fielded along the border, after the 9/11 terrorist attacks. This study utilizes illegal border crosser apprehensions and detections as a measure of border security and considers 13 factors in the analysis of border security pre and post 9/11: GEOINT sensors in operation along the border, terrain, analyst manning, agent manning, analyst training, agent training, analyst experience, agent experience, information technology reliability for analysts, information technology reliability for agents, federal funding, economic conditions in Mexico and political conditions in Mexico.

Structure of the Dissertation

This dissertation is organized into five main chapters. The first chapter provides an introduction to the dissertation. This chapter outlines the problem statement and background, specification of research questions and central arguments, a synopsis of the aspects of securitization theory and border security literature germane to the dissertation, synopsis of the research design, structure of the dissertation and the contribution to the discipline.

The second chapter provides a review of the existing relevant literature and contributions of this dissertation to that literature and is organized into six sub-sections. The first section discusses securitization theory, the theory on which this paper is grounded. This section explains the origins and uses of securitization theory and the ways it relates to this dissertation topic. Specifically, this section considers the importance of studying securitization instruments and tools in order to understand not only the operational and technical aspects and effects of these tools but also the political and symbolic effects (Balzacq 2008). This section explains the role of both political elite and public perceptions in driving the narrative surrounding the selection, employment and outcomes associated with the use of a particular securitization instrument or tool. The second section provides an overview of the relationship between securitization and critical geopolitics. The third section provides an overview of US-Mexican border security issues. The fourth section provides a review of the construction and portrayal of the US-Mexican border security threat, post 9/11. This section describes the widening and augmentation of security frames since the 9/11 attacks, as they relate to the US-

Mexican border. The fifth section provides a basic overview of the definition, nature and uses of GEOINT. The sixth section draws on elements of section five by providing a look at how GEOINT is utilized in US-Mexican border security.

The third chapter presents the methodology used. This chapter consists of three sub-sections. The first section provides a synopsis of relevant literature on the chosen methodological approach, a comparative case study analysis. The second section provides information on the preliminary procedures, specifically the research questions, central arguments, design and scope, as well as the 13 factors considered in the analysis. The final section provides a discussion of the results.

The fourth chapter provides an analysis of data and consists of two sub-sections. Section one discusses the reliability of measures; section two discusses the results in detail by specifically offering insight into the role of GEOINT, as a securitization instrument and tool, in reproducing the existing narrative surrounding illegal immigration along the southern border and, discusses the role of both the public and government elites in shaping and driving that narrative. In addition, this chapter provides insight into the operational and technical effects of GEOINT as a securitization instrument, evaluating whether the increase in GEOINT capabilities along the border post 9/11 has improved American security, detailing the ways in which GEOINT is currently being used along the border, as well as the variances in uses across states and offers recommended areas for improvement.

Chapter five provides a brief conclusion which outlines the review of findings and the importance of the study, including information on the GEOINT-Border Security

literature gap, policy recommendations for Border Security-related GEOINT, as well as future research recommendations.

Contribution to the Discipline

For academics, this dissertation assesses the applicability of securitization theory to US-Mexican border security by primarily focusing on the outcomes and effects of a particular securitization instrument and tool, as opposed to focusing solely on securitizing actors and their framing, as most securitization literature tends to do. Further, it fills a gap in the existing literature by explaining the role of GEOINT in reproducing the narrative associated with the illegal immigration threat along the US-Mexico border and, explains the role of government elites and the public in driving that narrative. This dissertation also augments existing border security literature by filling a gap in GEOINT-specific US-Mexican border security literature.

For practitioners at both the federal and state levels, this dissertation provides insight into the use of GEOINT along the US-Mexican border as well as the availability, or lack thereof, of GEOINT data and statistics for academics and defense industry partners. Finally, this dissertation offers policy recommendations and considerations for future utilization of GEOINT and the accessibility of GEOINT data for both short term and long term operational and strategic planning efforts. In terms of generalization, the results of this dissertation will not be generalizable beyond the context of the US-Mexico border.

CHAPTER II – LITERATURE REVIEW

This dissertation is grounded in existing securitization theory and US-Mexico border security literature. This chapter is organized into six sections. Section one provides an overview of securitization theory, outlining its origins, levels of analysis and applicability to border security issues. Section two provides information on the overlap and similarities between securitization theory and critical geopolitics, particularly the portrayal of borders as safe or unsafe places that require protecting. Section three outlines US-Mexico border security issues such as cross-border cartel violence, drug trafficking and illegal immigration. Section four discusses the various securitization waves that have occurred along the southern border, and specifically explains the framing of border issues from the 1970's through the 2000's. The fifth section provides a background on GEOINT to include information on the definition of GEOINT as well as the various types of GEOINT. Finally, section six provides information on how GEOINT is used along the US-Mexico border.

Securitization Theory

Securitization theory, as outlined by Balzacq (2011), is a "set of interrelated practices and processes of their production, diffusion and reception/translation that brings threats into being." Securitization is concerned with the way in which threats are socially constructed (Guzzini 2011). The theory emerged after the publication of Buzan, Waever and Wilde's book *Security: A New Framework for Analysis* in 1998, through which securitization became one of the leading methods in security studies. Under this theory, the manner in which threats are constructed and portrayed is studied in detail. This theory

is concerned with understanding who securitizes issues and why, what issues become securitized, for whom issues become securitized, under what conditions issues become securitized and the outcomes of securitization, particularly, the effects of policy instruments and tools (also referred to as "securitization instruments and tools") that are implemented to counter a particular threat (Buzan, Waever, Wilde 1998, Balzacq 2011).

Securitization theory draws on constructivism and critical theory, offering an alternative to realist arguments that tend to overlook the construction and manner in which threats emerge or are perceived (Buzan 1998). There are two sides to securitization theory: philosophical and sociological. The philosophical is largely concerned with the role of the speech act and the framing of a particular issue, whereas the sociological approach argues that securitization is best understood as a strategic process, which considers not just the role of the speech act but also other factors such as context and outcomes (Balzacq 2011). In both, the role of the audience is important; however, under the philosophical approach, the audience is formal, whereas under the sociological approach, there are "mutual constitutions of securitizing actors and audiences" (Balzacq 2011). Despite these differences, there are three key (shared) assumptions that are of importance in securitization— "centrality of audience, co-dependency of agency and context and structuring force of dispositif" (Balzacq 2011).

In terms of centrality of audience, this means the audience must agree with the claims that the securitizing actor is making. Being able to persuade the public, the use of language, body gestures, and the delivery of ideas is especially important (Balzacq 2011). More pointedly, regarding co-dependency of agent and context, the semantics, and context under which issues are presented by the securitizing actor are critically important

factors to consider. In order to obtain the audience's attention and to move them toward a particular event, specific words need to be used that will resonate with the audience, generally the population or smaller subsets therein within a given country. All members of the audience are important given their buy-in is required in order for a securitization move to be successful. An example of the role of the audience can be seen with the US-Canadian border security situation. Salter and Piche (2011) explain that post-9/11 there was an increased focus on US-Canadian as well as US-Mexican border security in the media and by politicians as well. In their words, clear links were made between the porous borders and terrorism, creating the aforementioned feeling of the need to take immediate emergency action, which the audience (the public) accepted (Salter and Piche 2011). With the post-9/11 US-Canadian border problem, the response was to increase manning and technology along the US-Canadian border in order to show the public a physical change and reaction to the security problem (Salter and Piche 2011). Salter (2011) cites the Iraq War as an example of a failed securitization move. He explains that President George W. Bush's speech acts were successful in solidifying Al Qaeda as an existential threat to US security following the 9/11 terror attacks however, "…the invasion of Iraq was rejected as a solution to the problem of Al-Qaeda" (Salter 2011).

To further explain the differences between the philosophical and sociological approaches to securitization theory it is helpful to first look at the philosophical approach in detail. This approach focuses on the role of the speech act. The speech act is the act of making an issue a security issue by selecting a specific word or words to describe an issue, which will influence the audience in one way or another. The speech act aids the securitizing actor in framing or amplifying existing frames surrounding a certain issue in

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order to portray that issue as a threat to national security. For example, in the 1970's with the Chicano rights movement, there was increased focus and media coverage on border issues, particularly immigration issues. Politicians began to refer to this problem as a "border crisis" in the media. Utilizing the words "border crisis" is considered a speech act given politicians specifically used these words to influence the audience into thinking and feeling that there was an imminent security threat, a crisis along the border, that required immediate, emergency action (Salter and Piche 2011, Nevins 2002).

The sociological side of securitization theory discusses securitization in terms of practices, power relationships and contexts (Balzacq 2011). The philosophical side largely "reduces security to a conventional procedure and rides on speech act in order for the act to go through," meaning the act of speech is the central focus and determinant in whether an act will be successfully securitized however, the sociological side (used in this dissertation) offers a much broader analysis of a particular securitization move, not only considering the role of speech in securitizing an issue, but also taking the analysis one step further by looking at who securitizing actors are, the acts they perform in order to securitize a particular issue and the context in which this all occurs. It also considers the outcomes of securitization moves by studying the effects of a particular securitization instrument or tool.

Buzan, Waever, and Wilde (1998) offer three levels of analysis under securitization theory, which tend to align more to the philosophical side of securitization theory: Referent Objects (things that are threatened), Securitizing Actors (those that securitize issues) and Functional Actors (people who affect the dynamics of a sector specifically, those who inform decisions being made in the security realm) (Buzan 1998).

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Balzacq (2011) offers three alternative levels of analysis (which are used in this dissertation) which are aligned to the sociological approach and which provide for a more-in-depth analysis: Agents (people who resist or contribute to the emergence of security issues), Acts (practices and outcomes of securitization to include policy/securitization instruments and tools), and Context (context of the discourse). Balzacq (2011) suggests that the researcher focus on the level of analysis is that is be suited for the research question: "In fact, the attention of the investigator can focus on the level of analysis necessary to answering the question at hand. On the other side, there are constraints. Given the levels' constituent analytics, it is very difficult for one individual researcher to embrace all levels." For this reason, this dissertation focuses solely on the Acts level of analysis by specifically studying a particular securitization instrument and tool (GEOINT) but leverages existing research pertaining to the Agents and Context levels of analysis in order to provide context (background information) on the actors involved in securitizing illegal immigration both pre and post-9/11, the rationale behind the instrument/tool they chose to implement as well as the context in which their securitizing moves and selection of such instrument and tool occurred.

Existing securitization studies largely focus on the Agents and Context levels of analysis, specifically studying the discourse surrounding securitization moves as opposed to the outcomes and instruments and tools implemented as a result of those moves. Balzacq (2008) states, "understanding the rationales behind security tools as well as their nature and effects helps to nudge securitization studies in a new direction by unearthing certain elements that might not easily surface otherwise at the level of discourse." An instrument of securitization is defined by Balzacq (2008) as something that is

implemented *after* an issue has successfully been securitized; it is the response to a threat. Securitization tools, on the other hand, are policy instruments that also have the ability to securitize (Balzacq 2008). Balzacq (2008) explains that, "there are symbolic attributes built into policy instruments that tell the population what the [securitizing actor] is thinking and what its collective perception of problems is" (Balzacq 2008, Peters and van Nispen 1998). A securitizing tool is "an instrument which, by its very nature or by its very functioning, transforms the entity (i.e. subject or object) it processes into a threat" (Balzacq 2008). In other words, the mere use of the securitization tool further securitizes the issue. Salamon (2002) describes a securitization tool as: "A type of good or activity (e.g. the provision of information, training, surveillance); a delivery vehicle for this good or activity (e.g. media, electronic devices); a delivery system, that is, a set of organizations that are engaged in providing the good, service or activity (e.g. an agency, air carriers, a Directorate General); and a set of rules, whether formal or informal, defining the relationship among the entities that comprise the delivery system (e.g. the EU Directive on the retention of telecommunication data" (Salamon 2002). This dissertation demonstrates that GEOINT is an instrument employed in response to the initial and continued successful securitization of illegal immigration along the southern border as well as a tool, given its use along the US-Mexico border further securitizes illegal immigration, thus contributing to the existing narrative that illegal immigration along the southern border poses an urgent threat to national security, one that requires a military-like response.

In terms of methods associated with securitization theory, a case study is the primary method for securitization studies (Balzcaq 2011). Specific techniques favored

include discourse analysis, observation, interviews, process-tracing and content analysis (Balzacq 2011). That said, there is considerable disagreement within the securitization studies community on which methods and techniques are most appropriate for researchers of securitization studies (Balzcaq 2011). Balzcaq adds that some Securitization theory researchers tend to utilize methods typically more aligned with quantitative studies, such as content analysis, when conducting their case studies, and that the use of these methodologies in qualitative studies should be encouraged, as they provide for a more robust analysis (Balzcaq 2011). Methodologically, in applying Balzacq's approach to this study, interviews, descriptive statistics and content analysis are utilized as sub-sets under the case study.

In terms of criticisms of securitization theory, critics highlight the constraints that the theory places on the speech act, specifically noting that it does not capture the different forms and strategies that securitizing acts can adopt and, for its underdevelopment of the relationship between securitizing actors and the audience (Balzcaq 2011). Stritzel (2007) also criticizes the Copenhagen School (CS), which securitization theory emerged from, for focusing too much on the speech act and not enough on processes as he explains the CS "…reduces securitization to a static event of applying a (fixed) meaning (of security as exceptionality) to an issue rather than seeing it as an always (situated and iterative) process of generating meaning, i.e. as a dynamic (social and political) sequence of creating a threat text." Salter and Piche (2011) utilize securitization theory in their study of the US-Canadian border however, they cite its inability to account for the "complex changes" that they see in US-Canadian border security, and more specifically, its inability to consider the impact of multiple actors in

multiple contexts. Salter and Piche (2011) explain that for US-Canadian border security issues, there is not one securitization act that occurs but instead, a constant changing and evolution of securitization acts related to border security that occurs constantly over time with new leaders and politicians, new security issues or a renewed focus on old security issues.

Floyd (2011) also criticizes securitization theory. She offers that there are three criteria that "determine moral rightness of securitization": 1. Existence of a threat, 2. Threat is considered a true threat to the security of humanity, and 3. The security response is appropriate to answer the threat in question (Floyd 2011). She states that, "It is, however, not possible to extend the Copenhagen School's original version of securitization theory by the aforementioned three criteria, as that theory precludes objective threat assessment and the School rejects the theorization of securitizing actors' intentions" (Floyd 2011). Floyd therefore offers an alternative theory, one that builds on the original theory but that considers the intentions of those that seek to securitize issues.

Based on these critiques, specifically the concern over securitization theory's overreliance and focus on the speech act, this dissertation focuses less on the speech act and more on the role of securitization instruments and tools in securitizing issues, in addition to understanding the operational and technical effects of these tools on border security in general.

Securitization & the Construction of Borders and Threats

There is a clear link between securitization and the construction of borders and boundaries, as well as the construction of threats in specific places, which can be seen

through the lens of critical geopolitics. Critical geopolitics posits that geopolitics can be studied at three levels, the first being formal geopolitics, which is focused on the development of geopolitics within academia. The second is practical geopolitics which is focused on the geopolitical language that politicians and experts utilize to describe geographic locations and the politics behind them (examples: "iron curtain", "outposts of tyranny") (Dodds 2008). It is here that the relationship between critical geopolitics and securitization theory is most evident, as securitization theory would classify terms such as "iron curtain" as speech acts aimed at triggering a particular response from the audience or mobilizing a specific set of resources " (Dodds 2008). The third level of critical geopolitics is known as popular geopolitics, which also demonstrates a connection with securitization studies given popular geopolitics is concerned with the role of mass media in portraying certain images of international politics (Dodds 2008).

The role of the media and film industry is a central discussion within Securitization theory literature. While the *Framing of the Border Security Threat* section of this paper will provide detailed information on how the US-Mexican border security threat was constructed and amplified in the post-9/11 environment, this section provides a general understanding of literature pertaining to the construction of borders in general, as well as information on how threats in specific places come into being.

Beginning with the construction of borders, Newman and Paasi (1998) stress that "state boundaries are equally social, political and discursive constructs, not just static naturalized categories located between states." They explain that borders and boundaries are a result of a process that involves social construction of specific spaces. They also add that "security" and national identity are tied to the construction of borders (Newman and

Paasi 1998). For example, securing the US-Mexico border is critical to US national identity as not doing so would result in the United States appearing weak or incapable. Securing the border however, solidifies America's strength and power within the international system (Dodds 1993).

Agnew (2007) highlights the role of political elites in the construction of borders and territories, explaining that borders are essential to our national identity given they demonstrate power through geography but he also explains that territory is important in that it limits our reach, tells us what we're responsible for and is a key part of our national power (Agnew 2007). With elites and the media, he explains that they often construct a "them" and "us" or an "others" sentiment, (something Newman and Paasi also point out) when it comes to border issues, simply by the words (speech acts or "scripts" as Dodds refers to them) that they utilize, which the media then perpetuates (Agnew 2007). Nevins (2002) explains the role of elites in shaping the image of the border by highlighting that not just the words of elites but also the tools they choose to implement carry symbolic meaning which has the ability to shape the ways in which Americans perceive the border. He explains that with the appointment of former Marine Corps general officer, General Leonard Chapman, as the Commissioner of the Immigration and Naturalization Service (INS) many years ago, the border became more "militarized" as a result of Chapman's use of military type tools and reconnaissance resources along the border. Employing these military-type tools along the border aids the narrative and perception of a "border war" or crisis along the border.

Paasi (1996) notes that elites define and construct borders and, those borders are often times not defined at the border but instead, hundreds of miles away in the capital,

often by the academics or government officials. Agnew (2007) adds that once borders are constructed, identities are often created after, or often times morphed into something new due to "forced assimilation." This is particularly true with the US-Mexico border where there is now a borderland consisting of a mix of US and Mexican citizens living along the border as well as a new culture of Mexican citizens with US citizen children living along the border, blurring the cultural lines even further (Agnew 2007). To explain, those living in mixed communities along the border share a specific cultural identity, for some along the Texas-Mexico border for example, their cultural identity is American, for others their culture is Mexican and for many, it's a unique Mexican-American cultural identify. These cultural identities are different than the political identities associated with the physical boundaries and borders associated with Mexico and the U.S.

In terms of constructing dangerous places or threats in specific places, Dodds (2008) highlights the film industry's role in these constructions. The way in which films depict "the bad guy" or the geographical location of a dangerous event affects the way in which the general public thinks about a particular geographic area as well as a real or perceived threat. Dodds explains that due to much of the population relying on media and film to educate themselves on world events and various political issues, it has the ability to shape their perceptions and in turn, their actions. Further, Dodds highlights the long-standing relationship that film makers have had with the government which also aids the construction of real or perceived threats. He explains that in order for Hollywood to make many of the action-packed military, spy or counter-terrorism movies that they make, they must have access to military and government installations and personnel. This creates a give-and-take relationship where Hollywood may portray the US in a certain light in their

films (strong, unbeatable, and militarily superior) in return for access to military installations for filming and research (Dodds 2008). Further, Dodds explains the social construction of terrorism that occurred in the post-9/11 era specifically highlighting not only the role of filmmakers but also the language used by government leaders such as George W. Bush who often used phrases such as "axis of evil" and defined nations as either "friends" or "enemies", which the media quickly latched onto and perpetually circulated (Dodds 2008).

Elites, experts and academics play a large role in the constructions of dangerous places, though the media does often amplify these constructions. Dodds (1993) explains that military experts and academics frequently use specific words and phrases to shape a reality and essentially a particular outcome. In securitization theory terms, these experts and elites utilize speech acts or scripts, to construct a particular reality in order to obtain buy-in from the population and/or decision makers in order to justify a particular response to a specific threat. Dodds suggests that these experts are able to socially construct, often with their words and their reputations, "space" and "place" in foreign policy (Dodds 1993). Like O'Tuathail and Agnew (1992), Dodds claims that "the practice of foreign policy is inherently geopolitical because it involves the construction of meaning and values of spaces and places?" (Dodds 1993). In terms of national borders and boundaries, speech acts or "scripts", essentially help construct the idea of borders, boundaries and spaces making geography not just the "backdrop of an event" but instead "a crucial element in the construction of 'worlds'" (Dodds 1993).

Balzacq (2011) explains that media content and context help to frame specific issues and "illuminates the social and cultural conditions under which securitization is

introduced, amplified or played down". This does not mean that there are no true or real threats such as terrorists aiming to harm the US, but that the media does play a role in the delivery and portrayal, or amplification, of issues and threats. Balzacq (2011) explains this more clearly by stating, "To contend that security is a social construct does not suggest there are no real threats. It suggests that the threats can be securitized only when a securitizing move is enabled by a context, a frame that selects or activates certain properties of the concept while others are concealed". The fight against Al Qaeda is often referenced as a "securitization success" while the Second Iraq War of 2003-2011 is deemed a "securitization fail", largely due to President Bush's inability to secure buy-in from the audience which includes not just the general public but also academics and some members of government (Balzcaq 2011).

US-Mexico Border Issues

US-Mexico border security is an extremely complex and contentious topic. In order to understand border security, it is essential to first understand the basics associated with the two primary border issues outlined in much of the US-Mexican border security literature: illegal narcotics and immigration. Though these complex topics merit separate studies of their own, this dissertation aims to simply provide a basic understanding of these issues in order to provide a foundation on which this study is built.

Regarding border violence, much of the violence occurring in Mexico, to include spill-over violence from Mexico to the United States, is attributed to the drug trade, specifically the cartels (Payan 2006, United States Committee on Homeland Security 2012). Drug smuggling began in Mexico after Chinese railroad workers brought opium to

Mexico in the 1860s (Longmire 2014). From there, the drug trade began to flourish. By the 1920s, drug cartels within Mexico began to cater to "American tastes" for drugs (Longmire 2014). Moving into the 1960s, the Sinaloa Cartel emerged, dealing opium and marijuana.

Starting in the early 1970s, drug lords within Mexico began to emerge with subsequent "turf-wars" kicking off shortly thereafter (Longmire 2014). As cartels emerged, so did the rules of the proverbial game. "Old School" cartels typically operated on the premise of "business is business," with a majority of their employees being friends or family (Longmire 2014). These cartels stayed under the radar and specifically did not target women or children; much of their model was based on a crime model (Longmire 2014). Examples of these "old school" cartels included the Tijuana Cartel, Juarez Cartel, Sinaloa Federation and Gulf Cartel. Additionally, differences in cartels in terms of size and make-up is important, as smaller cartels tend to have less violent episodes and large cartels tend to be run like multi-million dollar corporations (highly organized, strong intelligence networks) (Payan 2006, Martin 2013).

The rules associated with "old school" cartels changed in the 1990s when Osiel Cardenas Guillen took control of the Gulf Cartel by killing the group's then leader, Salvador Gomez (Longmire 2014). Cardenas then hired Los Zetas, a group of former Mexican military/special forces known for kidnappings, torture, and executions, to protect him. Cardenas even successfully ran the cartel from prison when he was arrested in 2003 (Longmire 2014). Los Zetas eventually splintered off (circa 2010) and developed new tactics, techniques and procedures (TTPs) not seen or used before (and not previously condoned) in the drug cartel business, to include beheadings and

dismemberments; as these TTPs spread to other cartels, this largely marked the escalation in overall cartel TTPs and violence (Longmire 2014).

At the height of the cartel-related violence, border security experts adopted a "Prevention Through Deterrence" strategy in 1994 (Haddal 2010). This strategy resulted in an increase in funding and manpower (nearly tripling the resources for border security) in order to increase the US's ability to detect and deter illegal border crossers (Haddal 2010). That said, after implementation, it was quickly realized that due to geographic, political and cultural differences between the northern and southern US borders, a different approach would be needed. The deterrence approach simply re-routed illegal border crossers from one area to another, with most attempting to cross in more remote areas along the US-Mexican border (Haddal 2010). Not only would 85% of assets be deployed to the southern border (due to 98% of illegal border crosser apprehensions occurring at the southern border), a shift from deterrence to one of risk-based assessments would eventually occur specifically as a result of emerging and shifting turf wars and TTPs being used by and between cartels moving into 2006 and beyond (Haddal 2010).

In 2006 "La Familia Michoacano" (LFM) emerged as a major rival cartel while Cardenas (los Zetas) was imprisoned. Though LFM followed many "old school" rules such as no killing for money and no targeting of women and children, they often behead those unable to pay a debt or those that have wronged the cartel in some way; a method for instilling fear and exercising power over those working for them (Longmire 2014). Most of LFM has splintered off, forming alliances between other cartels and against the larger, more powerful cartels (Longmire 2014).

According to Joseph Arabit, Special Agent in Charge (Houston Division) of the

Drug Enforcement Administration (DEA), the Sinaloa Cartel is currently the most

prominent cartel in terms of drug and money smuggling (Arabit 2016), though Arabit

adds that the new up-and-coming cartel to watch will be the Cartel Jalisco Nuevo

Generación. The Gulf Cartel and Los Zetas continue to have cartel members that reside in

Houston (a cartel hub), well beyond the US-Mexican border, and currently serve as the

leading cartels for the Houston area. Some members are US citizens; others cross into the

US illegally before joining a hub. That said, Arabit explains that current intra-cartel

violence has significantly affected their operations putting them in a state of flux, with

the Sinaloa Cartel being more stable and consistent in its operations. The below visual,

released by the Drug Enforcement Administration in 2015, shows the cartel hubs in

Texas and other areas in the US:
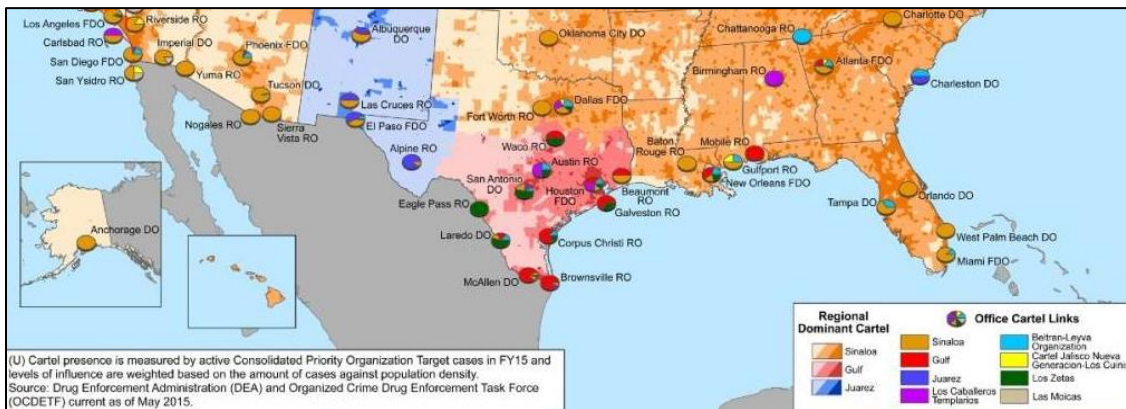
Figure 1. Cartel Hubs in Texas.

Source: DEA 2015.

Technology and improved information sharing between cartels and other

organized crime groups over the past decade has made cartels more lethal, effective and

powerful over the past decade (Ganster 2007, Martin 2013). Technology has allowed

cartels to change TTPs (adopting terrorist-like TTPs) and operations on the fly, often

putting them one-step ahead of American government officials (Payan 2006, Campbell

2009, Vitiello 2016). Cartel use of social media and other technologies as well as the fact

that "narco-culture" is engrained in the culture and societies within major cartel-infested

cities makes countering the effects of cartels extremely difficult (Campbell 2009).

Manuel Padilla, Jr., Commander for the South Texas Corridor, Joint Task Force-West,

explains that the increased use of technology by cartel members means a decrease in what

they call "pocket trash"; physical clues that border crossers often carry on themselves that

can lead police and border patrol agents to illegal border crossers and cartel members

(Padilla 2016). Padilla explains that border crossers no longer carry phone numbers of

their points of contact in the US, instead they carry this information in their iPhones.

Likewise, many no longer rely on "coyotes" (guides) to smuggle them across the border,

instead they rely on their iPhone maps to help navigate them across the US border

(Padilla 2016).

Overall, cartel violence and particularly violent TTPs have increased over the past

decade among cartels attempting to protect their turf against rivals; this increase is noted

by the beheadings, killings of US local and federal law enforcement (though Mexican

police claim these were cases of bad intel or mistaken identity on the part of the cartel)

(Maril 2011, Longmire 2014). Recent federal agent deaths and shootings include the

killing of one DEA agent (Kiki Camerena), the 2009 ambush of a United States Border

Patrol Agent Robert W. Rosas, Jr., the 2011 Los Zetas attack on two ICE agents in

Mexico (one agent was killed), and the 2012 shooting of two CIA agents assigned to the United States Embassy in Mexico City (resulting in injuries, but no deaths).

There are four primary drugs smuggled across the US-Mexican border today: cocaine, marijuana, heroin and methamphetamines (meth) (DHS 2014). Marijuana is the most prevalent drug smuggled across the border. Cocaine and meth are the two biggest money makers for cartels, which is why cartels go to great lengths to conceal these drugs in cars, trucks, goods and even people, as they make their way across the US-Mexican border (DHS 2014). Though Marijuana continues to be a highly trafficked drug, meth and heroin are becoming a bigger issue, largely given the new cartel TTP of hiding meth in certain liquid substances which prevents law enforcement from effectively being able to detect the drug as it moves across the border (Arabit 2016).

Complicating these issues is the way in which the cartels are utilizing pre-positioned family members to move drugs and large amounts of drug money across the border and into the US (Arabit 2016). Often times these cartels have extensive family and friend networks within the US which facilitate the movement of cartel goods. Further, cartel use of technology such as smart phones, has given them the upper hand in many instances given their ability to communicate without being detected/intercepted (Arabit 2016).

Joseph Nimmich, Deputy Administrator for the Federal Emergency Management Agency (FEMA) and retired Commander of Joint Task Force-South, notes that there has been not just a rise in meth and heroin trafficking but more specially, a significant increase in cocaine seizures, stating that 2016 will be a record year for cocaine seizures along the border (Nimmich 2016). Both Nimmich and Arabit explain that an increase in

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prescription drug use within the US has resulted in an increase in heroin, cocaine and meth use because prescription drugs serve as a gateway to these more lethal drugs. Given drugs such as heroin are cheaper to acquire than prescription drugs, addicts often transition to drugs like heroin which are more readily available (Arabit 2016). Further, cartel smugglers still rely on the aforementioned traditional methods of moving drugs across the border however, DHS has noted an 80% increase in tunnel use for drug movement since 2008, with over 140 tunnels discovered by law enforcement since 1990 (DHS Office of the Inspector General 2012).

Like the drug issue, immigration is an extremely complex topic and is significantly debated in border security literature. Prior to the 1970s, America's policies on immigration were fairly liberal (Nivens 2002). Workers from Mexico were free to move across the border for work with little hesitation or restriction. Migration of Mexican workers to the United States began in the late 1800s with the influx of Mexicans to the United States for work on railroads and ranches (Longmire 2014). Migration of Mexican workers to the United States continued through the 1900s with much of the American labor force being augmented by Mexican nationals during times of war. As a result of the influx of Mexican nationals, the United States Border Patrol was established in 1924 and the first emergence of the term "illegal immigrant" was used (Longmire 2014).

Though Mexican nationals continued to work and migrate into the United States through World War I (WWI) and World War II (WWII), typically under legal work contracts/programs such as the guest-worker program called the Bracero Program which operated during WWII, at the end of WWII, these individuals were forced to vacate jobs so that those American military members returning from war could regain their civilian

employment (Longmire 2014, Shroeder 2012). As a result, many of these displaced

Mexican workers sought out illegal jobs in the US, thus increasing the number of illegal

aliens within the United States.

Recent shifts in immigration policy and law, coupled with advances in technology

have impacted modern day immigration patterns. Joseph Nimmich explains that the

information age has enlightened people around the world about better ways of life,

particularly US life. As foreigners read about US economic gains and changes in social

programs and immigration policy, they take these headlines to mean that our borders are

open, thus encouraging an influx of immigrants into the US (Nimmich 2016). Nimmich

cites the 2014 policy change implemented by the Obama administration which resulted in

a huge influx of immigrants from Mexico as well as Central America into the US as one

recent policy change that impacted border activity. Further, he cites policies such as the

1995 "feet wet/feet dry" act which allows Cuban nationals to remain in the US if they are

able to reach the border by land but turned back if they are intercepted at sea (Nimmich

2016, Morley 2007). These types of initiatives incentivize those seeking to cross the

border illegally, especially those from Cuba or Central America who specifically seek to

cross via Mexico's land border instead of via water.

Bringing the foundations of these two major border issues together, drugs and

immigration, security can now be brought into the discussion. As Payan, Longmire and

Meril point out, much of the existing border security literature tends to overlook the

complexities of border security and therefore, oversimplifies the problem as well as the

solutions to US-Mexican border security. Before discussing past and present border

security initiatives and solutions, it is important to first note the existing debate within

security studies and particularly border security studies in terms of the definition of "border security" and what a "secure" border means.

Across border security literature there is no commonly accepted definition of "border security". This lack of definition can largely be attributed to the lack of government-identified/measurable milestones and metrics to be used for measuring border security successes and failures (GAO Report 2010). Ronald Vitiello, Acting Chief, US Border Patrol, explains that today, "security" and assessing the level of security at the border involves a multi-faceted/multi-layered approach in which various risks and level of risk is analyzed and considered. The US Customs and Border Protection's publication titled "Holding the Line in the 21st Century", outlines the Agency's 2012-2016 strategic approach and focus to securing our border. It outlines risk indicators aimed at quantifying security along the border. Michael Fisher, former Chief of the US Border Patrol, explains that the term "secure border" means something different to everyone and this makes it difficult to define and quantify security (Shroeder 2012). Given no amount of resources will ever guarantee a completely secure border, a "systematic risk analysis that can assist operators, policy-makers and stakeholders by identifying the probably of and degree of danger presented by threats in a specified area that can be measured against the government's ability to rapidly respond, is used to assess the successes or levels of risk along the 6,000-mile land border (Shroeder 2012). Under this approach, the US Border Patrol defines a secure border as one being of low risk, "high probability of detection with a high probability of interdiction" or more clearly, "…when it has confidence in its situational awareness of the imminent and emergent threats to border security coupled

with a confidence in U.S. Border Patrol and interagency capabilities to mitigate those

threats" (Shroeder 2012).

The following formula is used to gauge success: turn backs +

apprehensions/entries (CBP 2012). To explain, an apprehension is defined as someone

who is making an illegal entry and is taken into custody. A turn-back is someone who is

making an illegal entry and it returned to their country without being taken into custody.

The got-away is the illegal not turned back or taken into custody. Figure 2 below depicts

the formula used under the 2012-2016 strategic plan to gauge low-risk and border

security success.
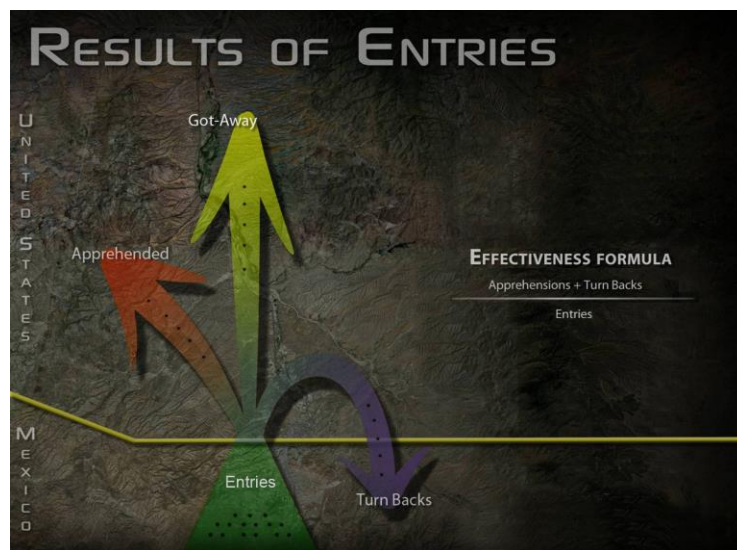
Figure 2. Border Security Effectiveness Formula.

Source: CBP 2012.

Vitiello explains that one cannot completely close down the borders, given the

need to allow free flow for those legally authorized to move across the border for

economic purposes however, we must be able to stop criminal and terrorist activity that

also seeks to move across the border daily (Vitiello 2016).

Longmire (2014) offers the following border security definition:

> Border security is the act of denying our enemies the means to enter the United States to do us harm. This is achieved by identifying and prioritizing border crossers based on the level of the threat they pose to our national security, and focusing our resources on either preventing their initial entry or apprehending them before they can commit criminal or violent acts on US soil (Longmire 2014).

Amplifying the debate over an appropriate definition of "border security" is the debate over whether the US-Mexican border is actually "secure". On one hand, several federal government officials, to include President Barak Obama and Janet Napolitano stated that the border is in fact, "secure", with Napolitano stating, "The border is better now than it ever has been" and President Obama stating that the border has never been as secure as it is today (Markon 2015, Condon 2011). That said, members of the local population, local law-enforcement and state government at times have claimed otherwise (Nevins 2002, Meril 2011, and Longmire 2014). In 2010, then U.S. Border Patrol Chief Michael J. Fisher testified that $3.5 billion had been spent on border security but that less than three percent of the border was actually "controlled" (Schroeder 2012). In a 2011 Congressional Hearing Report titled, "On the Border and in the Line of Fire: US Law Enforcement, Homeland Security, and Drug Cartel Violence", it is mentioned that former Secretary of Homeland Security, Janet Napolitano stated "The border is better today than it's ever been". Napolitano was also quoted in several media outlets delivering the same message, even claiming that spill over violence from Mexico was not occurring (Condon 2011).

Further, in 2010 Napolitano explained that "we live in a world where we cannot provide border security guarantees, something could always get through the US border,"

but Fisher adds that "what we can provide is a way to minimize the risk of dangerous goods and people crossing the border" (Schroeder 2012). In that same aforementioned congressional report, Colonel Steven McCraw, Director of Texas Department of Public Safety, stated "We are not happy with the fact that our border is not secure, because we know it can be secure, if the Federal Government commits sufficient resources to do it". Between both oral and written congressional testimony, Colonel McCraw refers to the unsecure Texas border nine times.

Meril (2011) highlights that conservative Democrats, Republicans, Minutemen, media and interest groups claim insecurity along the border, often highlighting the potential impacts to terrorism and national security. That said, Victor Rodriguez, Chief of Police for McAllen, Texas, recently stated that security along the Texas border and particularly in Texas border towns is has in fact improved of the past several years, even citing that McAllen and the other three largest border security towns (Brownsville, Laredo and El Paso) are currently ranked safer than the five largest cities in Texas, according to crime rate statistics (Rodriguez 2016). Rodriguez cites recent advances in technology, information sharing across agencies and community involvement as contributors to this change.

Meril (2011) explains that most government officials, including the DHS, prefer to use the term "operational control of the border" over "border security", given the challenges associated with defining what "border security" truly means. The term "operational control" is defined by U.S. Customs and Border Patrol (CBP) as "…the ability to detect, respond, and interdict border intrusions in areas deemed as high priority for threat potential or other national security objectives, through varied deployment

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combinations of personnel, technology, and infrastructure" (Schroeder 2012). The

emergence of "operational control" occurred with DHS's first strategic plan which was

issued in 2004.

An illustration of "operational control" can be seen in figure 3, and highlights

areas that are considered to be controlled, managed, monitored, low-level monitored or

remove/low activity areas:

Figure 3. Map of Operational Control.

Source: CBP 2012

Regarding border security initiatives and operations, beginning in the 1960s,

public concern over what was perceived as an "out of control" border situation due to the

rising number of illegal aliens in the country, fed a new wave of public focus on border

issues, namely immigration. Starting in 1973, increased media coverage on immigration

began, with words like "illegal immigration" and "border control" dominating the media

(Nevins 2002). Fluctuations in migrant traffic continued through the 1990s, resulting in various border control initiatives such as Operation Hold the Line (El Paso, Texas), Operation Gatekeeper (San Diego, California) and Operation Rio Grande (McAllen, Texas).

In each operation, Border Patrol manning was increased as well as the implementation of fences, both physical and virtual (surveillance technology to include GEOINT technologies). Further, the "Integrated Surveillance Intelligence System" (ISIS), was developed in 1998 by what was then called the United States Immigration and Naturalization Service (INS) (INS existed under the Department of Justice prior to its functions being absorbed by new organizations under the DHS). ISIS essentially integrated various border security intelligence sensors and capabilities in an effort to increase situational awareness and tipping and cueing functions (obtaining positive identification of a person upon tripping a sensor be it a GEOINT or seismic sensor). Delays in technology delivery and "cost overruns" impacted the effectiveness of ISIS (Nevins 2002).

To that point, the immigration issue had largely been focused on the economic effects of the influx of illegal aliens in terms of debates over the impact of illegal aliens "stealing" jobs from Americans and the impact of illegal aliens on healthcare systems and other social services (Hayworth and Eule 2013, Tancredo 2006). Hayworth and Eule (2013) explain that immigration issues cost taxpayers over a billion dollars a year. This focus, however, changed in response to the 9/11 terrorist attacks. In the aftermath of 9/11, connections were drawn between immigration, porous borders and terrorism. Longmire (2014) explains: "Everyone was suddenly terrified that our porous southwest border

could be used to smuggle a dirty bomb or al-Qaida operatives who wanted to conduct

another terrorist attack on United States soil. Reports started merging about the

possibility of Middle Eastern men who could pass as Latino studying Spanish in South

America, using fake identity documents to enter the United States". Andreas (2009)

refers to the increase in border policing post-9/11 as a sort of knee-jerk reaction to 9/11.

As a result, of 9/11, the Department of Homeland Security (DHS) was established in

2003 to synergize and synchronize national security efforts. DHS was charged with

securing the border without closing the doors to trade (Alden 2008).

Over the next several years, DHS implemented a series of strategic plans and

approaches to addressing border security more effectively. Overall, from 2004 to 2010

CBP experienced a significant increase in resources and manning. GEOINT technology

acquired from the U.S. military, an all-time high of CBP agents deployed along the

2,000-mile southern border (as well as an increased deployment of National Guard) and

various special operations resulted in a decrease flow of illegals and illegal activity

(Shroeder 2012). That said, the specific plans used to guide the implementation of these

resources evolved significantly over the past decade.

In 2004, CBP released its first strategic plan aimed at controlling the border

while also allowing movement across the border for economic purposes. Schroeder

(2012) explains that this was "a significant step for the agency as it endeavored to

correlate and quantify a metric that illustrated a level of control or security at specific

points along the border." The strategic plan emphasized increased information sharing

across agencies, central command of the agency with de-centralized execution at the

operational and tactical levels. Areas along the southern border were considered to be

under "operational control" when a specific amount of technology and resources were deployed to an area of high traffic, resulting in the likelihood of higher detection, apprehension or deterrence (Schroeder2012).

According to Maril (2011), the George W. Bush administration pressed full-speed ahead with border initiatives without truly evaluating why previously efforts to secure the border failed, stating, "Never looking back on these failed border strategies, the Department of Homeland Security under the Bush administration launched itself upon an identical course of deterrence after the events of 9/11". Following 9/11, multiple operations were implemented along the border in an effort to halt immigration, and specifically immigration that could be tied to terrorism. In 2004, under the new strategic plan, DHS implemented the American Shield Initiative (ASI). ISIS was assumed under the ASI program which aimed to provide a national network for communications, intelligence and information sharing capabilities that would not only increase information sharing, intelligence collection and detection capabilities along the border but also increase apprehension rates (Nevins 2002). ASI proved to have similar issues as ISIS in terms of acquisition, fielding and cost issues (Nevins 2002, GAO Report 2010).

In 2005 DHS implemented the Secure Border Initiative (SBI). This initiative took Customs and Border Protection (CBP), Immigration and Customers (ICE), United States Coast Guard (USCG) and United States Citizenship and Immigration (USCIS, formerly known as INS) to organize them under one umbrella. Under this umbrella, SBI*net* was developed to increase communication and information sharing between agencies (with the added goal of an increased apprehension timeline) (Nevins 2002). According to DHS's 2011 SBI*net* Assessment Report, SBI*net* failed to deliver, "Since its inception,

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SBI*net* has had continued and repeated technical problems, cost overruns and schedule delays, raising serious questions about the system's ability to meet the needs for technology along the border."

In fiscal year 2007, $1.5 billion was provided by congress to fund SBI programs including physical fences, GEOINT technology and supporting infrastructure; just one year later, congress had already begun to express concern about how funding was being spent (Haddal 2010). As a result, DHS eventually cancelled SBI*net* development in 2011. According to the report, the failed program cost taxpayers one billion dollars. Though many of the initiatives implemented under the 2004 strategic plan were deterrence based, after their implementation, the agency began to question whether a strategy of deterrence was adequate; eventually the answer became clear that it was not. After its implementation, officials began to realize that the 2004 plan "never addressed the adversaries' capabilities to hinder border security efforts", something the 2012-2016 plan sought to correct (Schroeder 2012).

The second border security strategic plan was published in 2012 with the CBP's "Holding the Line in the 21st Century" article, a three-part plan outlining the intended approach to border security for 2012-2016. Having taken lessons learned from the 2004 plan, the 2012-2016 plan entails securing the border via a multi-pronged, collaborative approach to border security, levering advanced technologies such as GEOINT sensors, communication systems, airborne assets, human intelligence, and various other resources, quantifying level so success and using decreases in apprehensions as an indicator for success (DHS 2016). This plan also sought to address the 2011 GAO report that cited a

need to address the root cause of illegal border crossing and illegal trafficking as well as addressing the need for risk analysis measures.

The 2012-2016 plan outlined two goals: "1) Secure the Nation's border through the application of Information, Integration and Rapid Response; and 2) Strengthen the Border Patrol through investment in the workplace and expansion of the organization's capabilities, including its personnel" (Schroeder 2012). The plan leveraged a National Aeronautics and Space Administration (NASA) risk-based strategy where areas of vulnerability and risk were identified along with avenues for mitigating those risks. Prior to this risk-based strategy, measurement of border security was measured by the number of illegals apprehended, drugs found at border checkpoints and the amount of resources deployed to a specific area. Today, CBP uses a measure of low risk to assess border security. The border is defined as low-risk when there is a high probability of detection along with a high probability of interdiction (Schroeder 2012). Under the plan, two methods are used: traditional and technological.

The traditional method entails the use of "organic" capabilities (capabilities owned by the CBP) to track smugglers in areas of high activity. The technological method for addressing security leverage GEOINT; sensors that provide situational awareness in areas where there are fewer CBP agents. These sensors act as the eyes of the CBP and may trigger a CBP agent's deployment to a specific location if needed. These sensors essentially serve as force multipliers (Schroeder 2012). The 2012-2016 plan has assisted operational planners in determining where to place and leverage intelligence sensors along the border in order to increase capability to detect and apprehend illegal border crosses.

These intelligence sensors (including GEOINT sensors) and associated technologies came with a fairly large bill, with nearly $700 million dollars of state funding for Texas alone, being spent on Texas-Mexico border security, according to Texas Representative Larry Phillips (Phillips 2016). Though costs associated with these technologies are high, the increase in technology, information sharing and manning along the border under the new plan has rendered positive results. Apprehensions have decreased by 78% percent since 2000.

Figure 4 highlights the daily apprehension rate in 2000 in comparison to the daily rate in 2012:
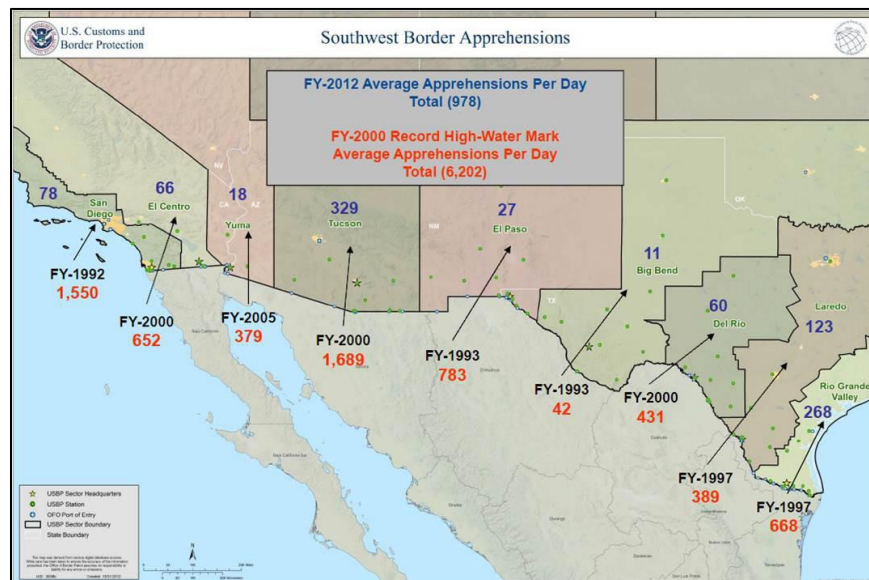
Figure 4. Average Apprehensions per Day.

Source: CBP 2012

These daily apprehension rates are general metrics used as a baseline to gauge activity in various areas along the border and assist analysts and planners in determining

where to place intelligence sensors and technology in order to maximize efficiency. For planning and operations purposes, the CBP has nine corridors with 20 sectors that span the U.S. and Puerto Rico. Of these corridors, four are within the southwest border: California, Arizona, New Mexico/West Texas and South Texas (CBP 2012). Below are additional tools (visuals) used by planners to determine high levels of illicit activity and where resources and GEOINT sensors should be placed to counter these activities (see Figure 5).

Average Yearly Apprehensions		
Sector	2003-2010	2011-2013
SDC	127,658	32,801
ELC	55,835	23,471
YUM	59,013	6,146
TCA	352,500	121,408
EPT	71,397	10,392
BBT	7,685	3,895
DRT	36,317	20,458
LRT	58,955	43,891
RGV	85,634	103,819

SDC – San Diego / ELC – El Centro / YUM – Yuma / TCA – Tucson / EPT – El Paso / BBT – Big Bend / DRT – Del Rio / LRT – Laredo / RGV – Rio Grande Valley
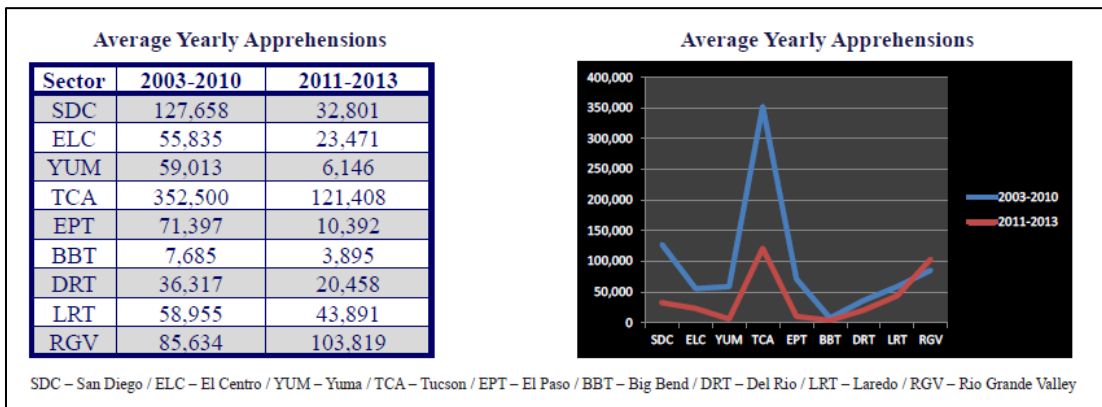
Figure 5. Southwest Border, Border Patrol Apprehensions.

Source: CBP 2012.

In addition to the CBP's 2012-2016 Strategic Plan, the "Declaration by The Government of The United States of America and The Government Of The United Mexican States Concerning Twenty-First Century Border Management" established in 2010 has assisted in improving US-Mexican border security, particularly through strengthening relations and partnership between US and Mexican law enforcement and counter-drug agencies (Schroeder 2012). Specific areas of cooperation outlined in the declaration include:

- Enhancing economic competitiveness by expediting lawful trade, while preventing the transit of illegal merchandise between their two countries,
- Facilitating lawful travel in a manner that also prevents the illegal movement of people between their two countries,
- Sharing information that enhances secure flows of goods and people, and
- Disrupting and dismantling transnational criminal organizations and punishing their members and supporters.
(21st Century Border Management Declaration 2010)

Areas of collaboration outlined in the declaration are extensive; however, the below areas highlight the clear tie to the CBPs 2012-2016 strategy, largely highlighting efforts of collaboration on pre-screening, the use of risk-management strategies, joint threat management and information/intelligence sharing, as well as increased collection and analysis along the US-Mexican border:

- Pre-screening, pre-clearance, and pre-inspection of people, goods, and products, particularly where such activities increase the Participants' abilities to intercept dangerous individuals, hazardous goods, and contraband before they cause harm and to alleviate congestion at ports of entry;
- The development of complementary risk management strategies aimed at separating high-risk and low-risk shipments, as well as high-risk and low-risk individuals, including specific procedures for repatriation of individuals with criminal records;
- Joint assessments of threats, development of a common understanding of the operating environment, and joint identification of geographic areas of focus for law enforcement operations;
- Augmentation of their collection, analysis, and sharing of information from interdictions, investigations, and prosecutions to disrupt "criminal flows" and enhance public safety
(21st Century Border Management Declaration 2010)

According to the 2013 progress report on the 21st Century Border Management Declaration, it was noted that the Cross Border Coordination Initiative (CBCI) was built as a result of the declaration and, was lauded for its successes in establishing mechanisms for information sharing between US and Mexican authorities as well as having "coordinated law enforcement patrols between the United States Border Patrol (USBP) and Mexican Federal

Police (PF) in South Texas/Coahuila, South Texas/Tamaulipas, and Arizona/Sonora" and

having synchronized strategic plans with common priorities (21st Century Border

Management Progress Report 2013). Additionally, in 2013 the US and Mexico signed an

agreement to develop the "Cross Border Security Communications Network" (CBSCN)

which will enhance information sharing and communication between US and Mexican law

enforcement officials (21st Century Border Management Progress Report 2013).

As the end of the 2012-2016 strategic plan nears, border security experts highlight

the successes achieved under the existing plan, noting just over the past three years, CBP

has discovered and interdicted 74% more illegal funds coming across the border, 41%

more drugs and 159 percent more weapons. Further, there has been a decrease in crime

rates in California, Arizona, New Mexico and Texas since 2008 (DHS 2015). That said,

DHS and its agencies continue to implement new initiatives and avenues for bolstering

information sharing.

As of 2016, Nimmich (2016) explains that an increase in information sharing and

collaboration across government and state agencies is well underway with plans to

expand these initiatives over the coming years. Nimmich notes that the Joint Inter-

Agency Task Force (JIATF-South) now consists of a compilation of "three-letter" (DHS,

DEA, FBI, etc.) agency's' best and brightest agents and analysts co-located, working

together to solve our most complicated border security issues.

Padilla (2016) explains that joint task forces, such as Joint Task Force-West,

which focuses on the Rio Grande Valley of Texas (the most active sector along the US-

Mexico border for illegal immigration and smuggling) bring best practices from across

various government organizations in order to tackle illegal immigration and criminal

activity head-on. Padilla stresses the use of GEOINT technology such as Aerostats (blimps equipped with GEOINT technology that possess long dwell times) within the JTF-W sector. He adds that there are three major focus areas that CBP and DHS overall are focusing on in order to improve security along the border: Personnel, Technology and Infrastructure (Padilla 2016). Robertson (2016) explains that Border Information Centers (BICs) which are interagency centers, provide an additional avenue for increased collaboration and, adds that Texas is unique in its approach to border security given its establishment of six joint intelligence operation centers which are co-located with the border patrols BICs.

Nelson Balido, Former Director of the Private Sector Division of FEMA and member of the DHS Homeland Security Advisory Council outlines the new $800-million dollar bill, to be spent over a two year period that congress passed in 2015 which will enhance border security initiatives across the state of Texas (Weber 2015). The bill, according to Larry Phillips, Texas State Representative and Chair, Homeland Security and Public Safety Committee, is a response to the increased traffic and violence along the US-Mexico border over the past four years. Phillips explains that the bill allows for plus-ups in border patrol agents and state troopers (~250 personnel), equipment, training, technology 50-hour work weeks for some DPS Troopers and, will fund the construction of the new Transnational Intelligence Center in McAllen, Texas.

Most of the focus for the coming years will be on the lower Rio Grande Valley in Texas given its high operations tempo, though an expansion of focus and capabilities to other areas of the border will occur in the future. Training initiatives will involve revamping the way in which State Troopers are trained and deployed to the border,

specifically, the two week increments of deployments will now involve leveraging

Troopers who are already stationed in the local area (those who are already familiar with

the culture and population) and pairing them with border patrol agents (Phillips,

Robertson 2016).

Further, law enforcement is partnering with local colleges to develop curriculum

and programs aimed at training potential future law enforcement and border patrol agents

in order to front-load them with the most recent information and technology, before they

even arrive at the policy academy or border patrol training institutions. Additionally, the

$800-million dollar bill will allow for the purchase of additional Palatas reconnaissance

(GEOINT) aircraft, a new Texas Ranger Division, and the establishment of a reserve

office program (Phillips 2016).

In terms of initiatives to come in the future, Robertson explains that continued

emphasis on inter-agency collaboration, leveraging new technology and interoperability

of communications between agencies will be critical. Robertson explains that these are

all things that are occurring today however, there is still room for continued focus and

improvement in the coming years. In addition to the $800-million dollar bill, Operation

Stone Garden, a $60 million dollar program aimed at improving collaboration and

operations between law enforcement agencies for border security purposes, will also

continue to fund, via grants, various border security initiatives.

John P. Wagner, Deputy Assistant Commissioner, Office of Field Operations for

US Customs and Border Protection adds that an increase in Border Patrol Agency

(Agent) hiring in 2016 will provide increased capacity to detect and apprehend illegal

border crossers. A new initiative that the CBP has implemented is the stationing of

Agents abroad in order to screen/detect dangerous travelers before they enter the US

Wagner explains that there are CBP agents at 15 locations across six countries who work

with foreign (local) law enforcement to conduct "pre-clearance" screening in order to

prevent criminals/terrorists from reaching US soil. In 2015, 4,000 people were flagged as

potential threats and removed from flights oversees, keeping them from reaching the US

Further, for countries where the U.S does not have a CBP liaison embedded, a central

office in Virginia has been stood up which provides similar pre-clearance services in

collaboration with host-nation law enforcement, providing the same services and

preemptive measures of keeping dangerous criminals from reaching US soil.

In addition, an increased use of biometrics has greatly enhanced the US's ability

to prevent criminals from entering the US. Prior to the use of biometrics, border patrol

agents would apprehend illegal crossers with no way of knowing whether it was their first

or fifth attempt to cross the border illegally. In 2000, CBP apprehended 1.6 million

individuals but could not verify the number of times they attempted to cross illegally

(Schroeder 2012). This problem is referred to as the Recidivism Rate which is "the

annual percentage of subjects who were apprehended more than one time during the

specified time period" (Schroeder 2012). After fielding biometric readers, the CBP's

recidivism rates dropped from 29 percent in 2007 to 16 percent in 2013 (CBP 2013).

As a result, in 2015 approximately 170,000 biometric transactions occurred daily

at US entry points across the US Further, biometric/registrant programs such as "Global

Entry" can be used by professional travelers wishing to bypass long customs lines by pre-

registering their personal information and utilizing finger print scans to move through the

customs lines faster, thus allowing customs agents more time to focus on those coming

through the standard processing lines (Wagner 2016). This does not mean that those registered via this program will fly under the radar, given the system will still detect a major change in their background status. Global Entry allows for professional travelers to register and requires them to provide various pieces of personal information. This has resulted in a 40% reduction in wait time in customs lines at airports. Wagner adds that there is still a considerable amount of time spent by DHS on civil aviation to include review of manifests and link and pattern analysis of flyers. This continued focus is largely attributed to the 5.2% increase in air passengers over the past year, with a total of $1 million air travelers coming into the US daily (Wagner 2016).

Projects on the horizon include advanced biometric and technological capabilities such as iris and facial recognition readers. Iris readers are in beta-test currently with CBP (Trindade 2016). Iris and facial readers are of particular interest to border security experts given illegal border crossers along the US-Mexican border often have worn hands due to being day laborers, which interferes with fingerprint-based biometric readers (Hardin, Trindade 2016). That said, one challenge facing DHS and CBP for biometric reader proliferation is the lack of communications in remote areas of the border. Though finger print or iris scans be done at various locations, the data cannot always be sent back to operations or analysis centers in real-time due to a lack of communication architecture/infrastructure in the desert areas of the border (Nemeth 2016). DNA readers is another area that various border security agencies, such as ICE, hope to explore however, the cost associated with mobile DNA readers is considerable, with mobile readers costing ~$200,000 and each DNA test ranging from $200-$400 (Hunter 2016).

In addition to current changes in technology, manning and training for agents and officers along the southwest border, it is also important to note the recent change in demographics of border crossers. In previous years, illegal border crossers were largely made up of Mexican nationals however, today 50% of illegal border crossings coming into the US via our southern border are from Central America (Harris 2016). Nimmich (2016) as well as Daniel Ragsdale, Deputy Director of US Immigration and Customs Enforcement, explain that Mexico is changing; it no longer has the highest death rate, Guatemala does. Mexico has been working to improve its security and economic situation. This in turn has affected the type and amount of Mexican nationals coming across the US border. Nimmich explains that these types of shifts are exactly the reason why the US must increase and improve its information sharing with all mission partners, to include international partners such as Mexico and Central American nations.

As with the 2004 strategic plan, there have been lessons learned from the implementation of the 2012-2016 plan. Schroeder (2012) explains the second and third order effects of the implementation of the plan highlighting that with an increase in GEOINT resources and manning in specific high-traffic areas, this essential resulted in illegals and criminals shifting to other areas of the border that were not so closely monitored; a completely displacement of certain drug trafficking organizations to other sectors of the border was even noted. The desert regions of Arizona were noted as one of the preferred locations for smugglers to relocate their operations to. Schroeder (2012) explains that in this instance, the shift was still considered a success given Arizona's open (non-terrain masked) border region makes it easier for CBP agents to spot illegal border crossers. However, with every move that CBP made, illegal border crossers and

smuggler would counter their move by finding unique ways to cross the border to include

the use of spotters that could assist in identifying weak spots in border security coverage

and then facilitate movement across the border via those avenues. Figure 6 below, depicts

areas of deflection and displacement.
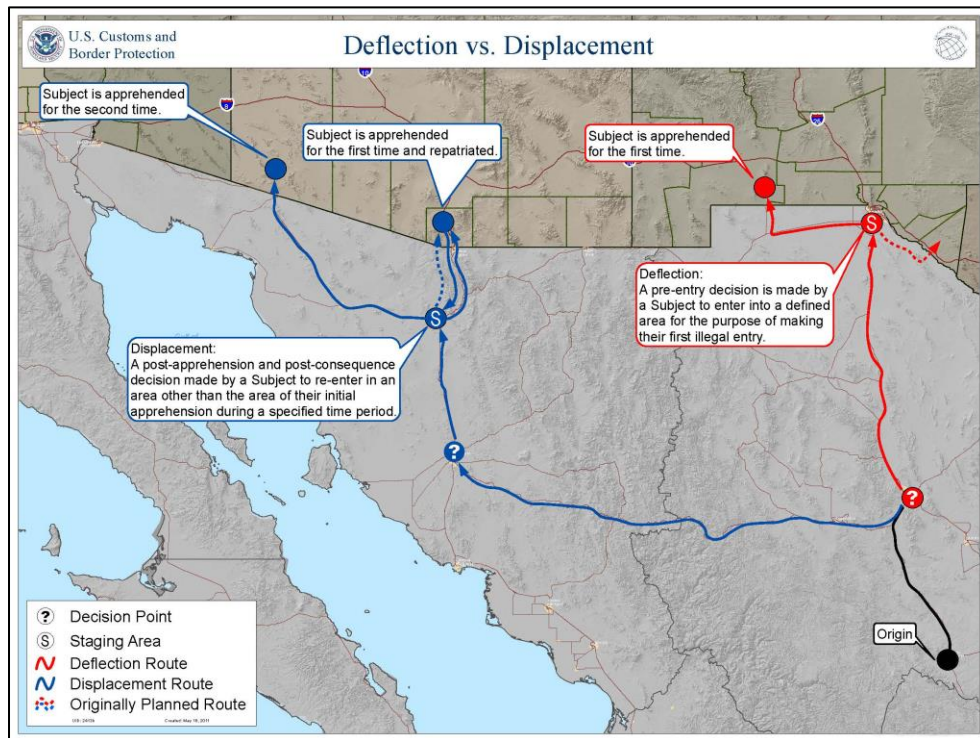
Figure 6. Deflection & Displacement.

Source: CBP 2011.

As with all approaches to border security, the challenge will continue to be

anticipation of adversary's moves and identifying their shifts in TTPs so that US border

security experts may respond proactively instead of in a reactionary way. For this reason,

CBP has included a "Black Swan" project as part of its strategic plan. This initiative is

aimed at identifying the "unknown unknowns," as former Secretary of Defense Donald

Rumsfeld would say. An initiative of this nature forces planners to think through what

they know about the enemy, what they don't know and then to think critically about what the enemy may do next. The South Texas Campaign development a unified command to collectively address intelligence and resource sharing. This group utilizes various techniques such as networking/web analytical tools to analyze adversary operations in order to anticipate their next moves.

Framing of the Border Security Threat

Since the early 1970s four major waves have occurred in terms of amplification or shifting of national security frames relating to border security and particularly immigration as it relates to border security. Of note, a common trend seen throughout all waves is the increased focus and attention on border security during both federal and state elections. Beginning in the 1970s, an increased focus on border security emerged, largely as a result of the Chicano rights movement that developed in the 1960s (Nevins 2002). Due to increased awareness and media coverage of the Chicano rights movement, a growing concern over the economic impacts of the influx of illegal immigrants in the United States, especially the influx into California, resulted in the construction of a "border crisis" (Nevins 2002). Nevins explains that a growing perception of the border being "out of control" occurred during this time. This was not to say that real threats did not exist, however, an amplification of existing issues occurred and in particular, specific words were chosen to construct the idea of an immigration "crisis" instead of an immigration "problem" (Nevins 2002, Longmire 2014). The construction of this crisis was heavily rooted in not just the media's increased focus on border issues but also politics, namely the appointment of Leonard Chapman as the Commissioner of the

Immigration and Naturalization Service (INS). Chapman was a former Marine Corps general officer who, during his time in office, was known for militarizing the border. Chapman and his counterparts often utilized the media outlets to perpetuate the perception of illegal immigrants as a threat to the United States economy and national security in general (Nevins 2002). Under securitization theory, these conscious messaging acts portraying a specific threat are referred to as speech acts, or scripts, under geopolitics. Balzacq (2011) explains that these speech acts "do more than just merely describe a given reality and, such as, cannot be judged as false or true. Instead these utterances realize a specific action; they "do" things: they are "performative" as opposed to "constatives" that simply report states of affairs and are thus subject to truth and falsity tests." Nevins (2002) highlights that starting in 1973, the media's use of particular words like "illegal immigration", "illegal aliens, and "border control" began to surface and essentially became standard references when discussing border issues in the media.

As a result of the aforementioned speech acts and subsequent constructions of the border security threat, several initiatives were put into play during the 1970's to address the alleged threat. For example, the Employer Sanctions Law was put into effect to assure United States businesses were not employing illegal immigrants. Additionally, in 1977, an immigration plan was implemented by the Carter administration, which doubled the number of border patrol agents. Further, in 1978, the United States Select Committee on Immigration and Refugee Policy was established "to study and evaluate…existing laws, policies, and procedures governing the admission of immigrants and refugees to the United States and to make such administrative and legislative recommendations to the President and to the Congress as are appropriate" (Lester and Reynolds 1983).

The second wave of amplification of security frames relating to border security occurred in the 1980s and was largely focused on the War on Drugs. Where the first wave was focused on the illegal immigration threat to the American economy, the second wave was predominately focused on drug enforcement. The militarization of border issues seen during the Ford and Carter administration continued through the Reagan and Bush administration in the 1980s. Like the previous administrations, both Reagan and Bush utilized the media to perpetuate interest in the border situation, ultimately resulting in the acquisition of 250 new border patrol agents along the US-Mexican border (Nevins 2002). In reference to Securitization theory, Buzan and Balzacq explain that the social design of a security problem provides justification for the utilization of a specific response to a particular problem. On this note, one can see how the constant referencing of the War on Drugs and particularly the use of the word "war" justified the increase in build-up of capabilities and agent manning along the border.

The third wave of amplification of security frames relating to border security occurred in the 1990s and like the first wave, was largely focused on illegal immigration as a threat to the American economy. The shift in focus and amplification of frames during this time was largely attributed to the recession that occurred in the early-mid 1990s. State government leaders, such as California Governor Pete Wilson, attempted to link the deteriorating socio-economic conditions in California to illegal immigration. Of particular note, due to it being an election year, Governor Wilson pushed for the launch of a major border security operation, Operation Gatekeeper. Applying securitization theory to this scenario, one can see where Wilson's speech acts successfully influenced

the audience in a way that allowed for the use of a particular response to the constructed/amplified border security threat (Balzacq 2011).

The fourth amplification of frames occurred in 2001 with the occurrence of the 9/11 attacks which specifically drew a link between border security issues and terrorism, resulting in a subsequent increase in technology along the southern border (Wagner 2016). As outlined by Longmire (2014), as a result of this major attack on United States soil, an increased focus on border security, especially US-Mexican border security and terrorism occurred. Politicians at both the state and federal levels began to focus on the potential tie between the porous US-Mexican border and trans-national terrorism (Maril 2011). Of note, the number of Border Patrol agents in 2001 was 9,100; today there are more than 18,500 agents along the US-Mexican border, in addition to thousands of detection sensors. Maril and Longmire posit that these increased capabilities were specifically secured as a result of the speech acts that occurred post 9/11 (White House.Gov 2015, Longmire 2014, Maril 2011).

It is also important to note that the framing and/or amplification of existing frames that surrounds a particular event or topic has the ability to change the landscape and the people inhabiting the landscape. As mentioned in the section pertaining to parallels between securitization theory and critical geopolitics, the way in which the media portrays a particular space, impacts decisions made by government officials, policy makers and others. For example, Rodriguez, the Chief of Police for Texas border town, McAllen, explains that his town is the recipient of many "tours" of government elites. These elites come to the border, often in times of election, to see the border issues first hand. These "tours" as Rodriguez calls them, impact the McAllen economy in

various ways, largely by perpetuating a narrative about the border that isn't true, one that leads inhabitants of the border region as well as visitors with an impression of lawlessness (Rodriguez 2016). Large private companies looking to hold conferences in McAllen or even church organizations considering playing host to events in McAllen question whether McAllen is safe enough for their group. This affects tourism and the overall McAllen economy. Likewise, it sends the message to the population that the city is not safe, bringing into question whether they too should flee the city (Rodriguez 2016).

Geospatial Intelligence (GEOINT) Defined

The term GEOINT emerged in 2005 and was specifically coined by now Director of National Intelligence (DNI), James Clapper. Prior to this date, the widely utilized term within the geospatial community was "IMINT", short for "imagery intelligence" (GEOINT Symposium 2015). In a 2005 memorandum, Director Clapper introduced the term GEOINT which included IMINT as a part of GEOINT. According to United States Code Title 10, §467, GEOINT is defined as the "exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the earth. Geospatial intelligence consists of imagery, imagery intelligence, and geospatial information". Broken down, imagery refers to images that provide a visual depiction of a place, thing, or an activity. Imagery intelligence differs from imagery in that imagery refers to raw intelligence (unexploited, unanalyzed imagery), whereas imagery intelligence refers to imagery that has specifically been analyzed by an individual trained to conduct imagery analysis. Geospatial information refers to information collected in conjunction with imagery, to include date,

time, and geocoordinates of the imagery collected. For something to be deemed

"GEOINT" it must possess a time and date of collection. Title 10, §467 provides the

following additional/formal definitions, which this dissertation will utilize:

> (A) The term "imagery" means, except as provided in subparagraph (B), a likeness or presentation of any natural or manmade feature or related object or activity and the positional data acquired at the same time the likeness or representation was acquired, including— (i) products produced by space-based national intelligence reconnaissance systems; and (ii) likenesses or presentations produced by satellites, airborne platforms, unmanned aerial vehicles, or other similar means. (B) Such term does not include handheld or clandestine photography taken by or on behalf of human intelligence collection organizations. (3) The term "imagery intelligence" means the technical, geographic, and intelligence information derived through the interpretation or analysis of imagery and collateral materials. (4) The term "geospatial information" means information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the earth and includes— (A) statistical data and information derived from, among other things, remote sensing, mapping, and surveying technologies; and (B) mapping, charting, geodetic data, and related products.

In terms of capabilities and platforms, GEOINT data can be collected by space

borne, airborne, ground sensors or stationary sensors. GEOINT capabilities for homeland

security largely entail airborne platforms such as fixed wing aircraft that carry GEOINT

sensors, fixed/stationary GEOINT full-motion video cameras and unmanned aerial

vehicles (UAVs), also known as Remotely Piloted Vehicles (RPAs). RPAs are the

preferred airborne platform for border surveillance due to their long-dwell times and the

fact that there is no on-board pilot (the pilot is able to fly the aircraft from a ground

station that can be located hundreds or thousands of miles away from the RPA's

operating area) (US Army War College 2011). RPAs range in size and focus with larger

RPAs such as the Predator, Reaper and Global Hawk being the platforms of choice. The

DoD Unmanned Aerial Surveillance (UAS) Roadmap states that RPAs are best suited for "dull, dirty and dangerous missions" meaning, "dull" are those that require long-dwell times of reconnaissance, "dirty" are those occurring in an access-denied environment and "dangerous" being missions where complex threats exist (DoD UAS Roadmap 2005-2030).

At the creation of DHS in 2005, the Department ordered a study to determine the feasibility of utilizing RPAs along the border. Further, it developed an RPA working group to determine what roles, mission sets and requirements RPAs would fulfill in terms of border security. After the Intelligence Reform and Terrorism Prevention Act directed DHS to present a plan for RPA use along the US-Mexican border, an increase use and reporting on this technology occurred. In 2011, CBP's RPA (Predators) fleet rose to 11 RPAs with over 3,000 flight hours, leading to over 5,000 arrests (DoD UAS Roadmap 2005-2030, Homeland Security Newswire 2011).

Sensors flown on the aforementioned airborne platforms as well as the ground-based or stationary platforms can be electro-optical (EO) sensors (which typically provide images that resemble a photo that you would take with a digital camera) or Synthetic Aperture Radar (SAR). EO sensors offer clear photos of a particular area or activity but their employment is limited by weather, haze and darkness, with optimal employment during daylight hours and a clear weather forecast. SAR sensors on the other hand offer high resolution images that may be taken at night or in cloud cover. Unlike EO sensors, SAR sensors have the ability to "see through" clouds and other obstacles. Other capabilities such as Light Detection and Ranging (LIDAR) sensors provide three dimensional (3D) images, while Hyperspectral sensors (HSI sensors) collect information

about an object's spectral "foot print" by essentially dividing an imagery scene into hundreds of bands of the electromagnetic spectrum, revealing detailed information about a particular imaged target that would otherwise be invisible to the human eye, such as information pertaining to temperatures or water vapor (Kelly 2015). While there are a variety of GEOINT capabilities utilized along the US-Mexican border, the majority of capabilities are fixed (stationary) long range thermal cameras and motion-activated full-motion video (FMV) cameras. This dissertation will specifically focus on organic (law-enforcement owned) as well as DHS-owned cameras and FMV GEOINT capabilities utilized along the US-Mexican border. Due to challenges associating with security classification issues, this dissertation will not include Department of Defense GEOINT capabilities.

The Role of Geospatial Intelligence in US-Mexican border Security

While the use of GEOINT along the US-Mexican border has existed for many years, largely in the form of full-motion video cameras, an increase in the amount of GEOINT used along the border since 9/11 has occurred (Rodriguez 2016, DHS 2015, Texas Department of Public Safety 2015). Additionally, as a result of various Department of Defense rapid acquisition projects (otherwise known as "Quick Reaction Capabilities or "QRCs") that occurred in support of United States and Coalition military operations in Iraq and Afghanistan from 2008 to 2014, a change in the nature of GEOINT capabilities utilized along the US-Mexican border also occurred post 9/11 (Longmire 2014). To explain, various GEOINT technologies were developed in support of operations in Iraq and Afghanistan, specifically, capabilities with increased resolution and range that could

be flown on UAVs/RPAs such as the MQ-9 Reaper or the MQ-1 Predator. As operations began to wind-down in Iraq and Afghanistan in 2012, increased consideration for utilizing these technologies along the US-Mexican border began to occur (Longmire 2014).

Looking at these phenomena chronologically is the easiest way to understand this evolution and change in GEOINT along the border. Beginning with Operation Hold the Line along the El Paso, Texas-Mexico border in 1993, much of the GEOINT technology utilized were fixed/stationary full motion video cameras. This operation essentially focused on utilizing human blockades (of agents) as well as vehicle blockades to deter illegal border crossers, with the role of GEOINT being augmentation to agent manning, a fairly minimal role (Nevins 2002). As a result of this operation, a 70% decrease in apprehensions occurred the following year (Shroeder 2012). One year later, Operation Gatekeeper was implemented along the San Diego, California-Mexico border. Similar to Operational Hold the Line, a mix of human and vehicle blockades coupled with GEOINT (full motion video cameras) was utilized. This operation resulted in a continued reduction in illegal entries for five years following the operation, with a 75% total decrease in entries during that timeframe (Shroeder 2012). Similar operations along other areas of the border followed, such as Operation Safeguard in Arizona. In all instances, the role of GEOINT was considered minimal and largely entailed the use of cameras.

Beginning in 2005, DHS began to push for an increased use of "smart technology", specifically the utilization of sensors, such as unique GEOINT sensors, for purposes of creating a "virtual fence" where physical fences and boundaries along the border did not exist and, to augment the planning and execution of border security

reconnaissance operations as well as border patrol operations. This push involved not only utilizing and increasing the number of fixed, full motion video cameras (as had been used in past years) but also utilizing full motion video cameras on manned aircraft (to include helicopters) as well as UAVs. Figure 7 provides a visual of GEOINT along the border at the beginning of the 2012-2016 strategic plan implementation.

Figure 7. GEOINT on the U.S.-Mexico Border.

Source: CBP 2012.

Additionally, unique GEOINT programs were implemented starting in 2012 along the Texas-Mexico border under a program called Operation Drawbridge, utilizing long range thermal cameras and motion-activated full-motion video (FMV) cameras capable of being placed in discreet or covert locations for the purposes of identifying potential illegal border crossers (Texas Department of Transportation 2015). According to J.D. Robertson, Commander, Special Operations Group, Texas Rangers/Department of Public

Safety, as of April 2016, there are 4,362 GEOINT (Draw Bridge) sensors located along the Texas/Mexico border as well as nine airborne reconnaissance aircraft, two reconnaissance/operations helicopters, and two medium altitude reconnaissance aircraft (fixed wing) operating along the border. He adds that the Department is currently seeking two additional high-altitude reconnaissance (GEOINT) aircraft for border missions (Robertson 2016). Currently, other military QRCs are being considered for border security purposes to include Wide Area Motion Imagery (city-size imagery) sensors as well as GEOINT sensors that provide long-range, persistent surveillance (long dwell times with near real time transmission of GEOINT data to analyst ground stations).

More recently, there has been an increased dialogue and collaboration between the DHS GEOINT Directorate and the larger GEOINT community. DHS GEOINT experts have participated in recent US Geospatial Intelligence Foundation (USGIF) symposiums, offering unique insight into the challenges and successes of DHS GEOINT tools, resources and initiatives used along the southern border and offering new avenues for collaboration with DoD GEOINT partners as well as national partners such as NGA. Most importantly, DHS has set up a "Homeland Security Geospatial Concept of Operations (GeoCONOPS) which provides a collaborative forum for state, federal, academic and industry GEOINT experts to collectively share information in an effort to address the challenges of GEOINT for border security (Alexander 2015). As David Alexander, Director of DHS's GEOINT Directorate more specifically explains, "GeoCONOPS is a strategic roadmap to understand, and improve, the coordination of geospatial activities across the entire spectrum of the Nation: from federal, to state, and local governments, to private sector and community organizations, academia, the

research and development industry and citizens in support of Homeland Security and

Homeland Defense (HD)".

Alexander also explains that the way in which GEOINT is utilized along the

southwest border today is not solely the traditional use that most are familiar with:

> The vast majority of geospatial information that offers value to DHS is not traditional imagery. Imagery is important -- it provides a valuable and critical data point for us understanding a situation -- but it's all the transactional data that's occurring in our ecosystem that's driving our understanding of scenarios, of actions, of players and how those relate to the security of the nation. Those could be emerging threats from outside the nation to activities that are happening within the nation," he said. "That's not traditional geospatial information that you would obtain from looking at an image." (Alexander 2015)

What Alexander highlights is the opening of the GEOINT aperture to meet the

evolving nature of the border environment. While traditional imagery is still used for

detection and surveillance, today's GEOINT assets are also used to support things like

change detection, where GEOINT collection provides analysts with a series of images

taken over a period of days, from the same angles and same times of day in order to

analyze changes in traffic patterns and the terrain used by illegal border crossers. Further

Alexander highlights the increased need for integration and synchronization between

cyber-experts and GEOINT experts in the future, noting that every cyber-event has a

physical attribute that can be collected or identified: "Everything happens in space and

time. So being able to understand where cybersecurity risks and activities are occurring,

what the cascading effects could be in terms of physical infrastructure and the systems

that rely on that is a key area of concern" (Alexander 2015). While GEOINT collection

along the southern border continues to be largely focused on tipping and queuing CBP

agents to high traffic areas for illegal border crossings, as Alexander notes, areas such as cyber will play more of role in homeland security operations in the coming years.

This dissertation contributes to existing literature in two ways. First, this dissertation fills a gap in existing securitization theory literature by demonstrating the applicability of securitization theory, more specifically the use of the Acts level of analysis, to the US-Mexico border security problem-set in order to study the operational and symbolic effects of a particular securitization instrument and tool, GEOINT. Existing securitization literature largely overlooks this aspect of securitization theory. Second, this dissertation fills a gap in GEOINT-specific US-Mexico border security literature. Existing border security literature only briefly discusses the role of GEOINT, while this dissertation offers an in-depth analysis of the uses and effects of GEOINT along the southern US border as well as insight into the role of GEOINT in reconstructing and reaffirming the existing narrative surrounding the threat of illegal immigration along the southern border.

CHAPTER III - METHODOLOGY

This dissertation conducts a comparative case study using securitization theory. Four cases are included (California, Arizona, New Mexico and Texas) in order to study the operational and symbolic effects of a specific securitization instrument and tool, GEOINT. Selection is based on the four states' shared American geographic boundary with Mexico. Water boundaries are excluded, given that GEOINT is mainly employed along shared land borders. All four states sharing a land border with Mexico are included in this study in order to provide a comprehensive study that provides detailed insight into how the federal government's approach to border security, and specifically the utilization of GEOINT in border security, is executed in each state. DHS and state-owned GEOINT capabilities (ground and airborne full motion video, IR and SAR sensors) are included in this study; however, Department of Defense (DoD)-owned GEOINT capabilities are excluded due to classification of DoD GEOINT missions.

The four case studies include information on the operational/technical and symbolic effects of GEOINT along the border from 1996-2014. Pre-9/11 data is included in order to establish a baseline of illegal border crosser detections, apprehensions and technology utilized along the border before the 9/11 terror attacks occurred. January 1996 was selected as the starting point of this study due to border security legislation passed that year, as well as availability of data from 1996 and beyond. Post-9/11 data is included in an effort to evaluate illegal border crosser detections, apprehensions and GEOINT technology fielded since Al Qaeda's terrorist attacks against the United States that day. The year 2014 was chosen as the end date for this study to ensure the most recent information on this topic is included and to allow for nearly 400 GEOINT capabilities

fielded along the border after 2010 to be considered in this study (Texas DPS 2015). As a result of lengthy government acquisition processes, the immediate fielding of new technologies is not always feasible. Therefore, selecting 2014 as the end year for the study allows the researcher to capture technology that may have been delayed after 9/11 as a result of lengthy requirements processes or, a lack of state or federal funding.

The primary research method for securitization theory is a case study with three recommended levels of analysis (Actors, Acts, Context) Balzacq (2011) recommends selecting the level of analysis that is best suited for the research question as opposed to using all levels of analysis. He states, "In fact, the attention of the investigator can focus on the level of analysis necessary to answering the question at hand. On the other side, there are constraints. Given the levels' constituent analytics, it is very difficult for one individual researcher to embrace all levels" (Balzacq 2011).

Based on Balzacq's recommendation and in order to address the three research questions presented in this dissertation, "To what extent does securitization theory explain the role of GEOINT, as a securitization instrument and tool, in reproducing the narrative associated with the threat of illegal immigration along the US-Mexico border?; "To what extent has GEOINT, as a securitization instrument and tool, affected US-Mexican border security generally and, specifically, the ability of the United States to both detect and apprehend individuals who cross the border illegally?"; and "Is the United States able to fully utilize the benefits that GEOINT, as a securitization instrument and tool, can offer along the border?", this dissertation focuses primarily on the Acts level of analysis while using existing research pertaining to the Agents and Context levels of analysis to provide background information on the securitizing actors involved in

further securitizing illegal immigration post 9/11, the rationale behind the instruments they selected and the context in which their actions occurred.

The below figure illustrates the intended application of securitization theory and particularly the use of the "Acts" level of analysis for this dissertation:
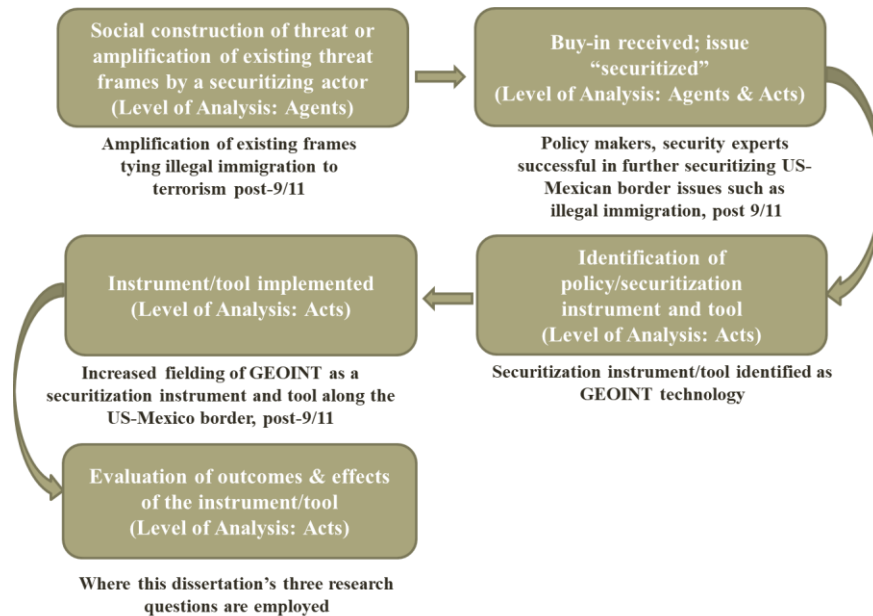
Figure 8. Application of securitization theory in this dissertation.

Note: the "context" level of analysis occurs across each step of the process.

The other two levels of analysis (Agents and Context) are not suited for this research given the Agents' level of analysis is concerned with studying the people who resist or contribute to the securitization of issues, not the outcomes or effects of specific securitization instruments and tools. Likewise, the Context level of analysis focuses on the context of the discourse, not the outcomes of a particular securitization instrument (Balzacq 2011). Three techniques are used in this study as sub-sets under the case studies: descriptive statistical analysis, content analysis, and interviews.

Descriptive statistics that are publicly available from the US Customs and Border

Protection (CBP) (a part of the Department of Homeland Security (DHS)), outlining the

number of annual detections and apprehensions of illegal border crossers will be used to

provide a baseline of border security from 1996-2014. The number of annual

apprehensions is the main measure of border security effectiveness used by DHS. Low

apprehension rates are deemed positive reflections of strong border security namely due

to DHS/CBP's belief that additional resources, technology and manning along the

southern border deters illegal border crossers. Additionally, publicly available descriptive

statistics from the Department of Homeland Security regarding training for border

security personnel, border security related manning and budget statistics for border

security will be used. Further, statistics from the World Bank pertaining to Mexico's

economic trends during the scope of the study (Gross Domestic Product (GDP) and

unemployment rates), will be included in order to understand potential economic changes

within Mexico that may have impacted illegal border crossing trends during the scope. A

content analysis will be conducted on border security-related newspaper reporting from

1996-2014 to evaluate public perceptions of border security, to include the operational

and symbolic use of GEOINT as a securitization instrument and tool. This analysis will

aid in determining the role of GEOINT in contributing to the existing narrative pertaining

to the threat of illegal immigration along the southern border.

Reporting from California, Arizona, New Mexico and Texas is included in order

to capture regional reporting, as well as one non-regional newspaper in order to capture

reporting occurring outside of the border region. State-specific papers include, for

California, *The San Diego Union Tribune.* The Tribune was selected due to its proximity

and coverage of the US-Mexican border and due to its accessible archives. For Arizona, *The Arizona Republic* was chosen given its ranking in the 100 most read newspapers in circulation as well as its archival database and coverage of border issues (Audit Bureau of Circulation 2016). For New Mexico, *The Albuquerque Journal* was selected due to its ranking on the same top 100 list of most read newspapers and its archives and coverage of border issues (Audit Bureau of Circulation 2016). For Texas, *The El Paso Times* was selected because of its regular reporting on border security, its proximity to the southern border and its archives. The *Washington Post* was selected as the non-regional paper based on being ranked one of the top newspapers (most read newspapers) within the United States (US), according to the Audit Bureau of Circulation (2016), due to its insight into media messaging and themes occurring outside the southern border region, specifically within the National Capitol Region where several border security experts, lawmakers and leaders reside.

The newspaper content analysis will be focused on identifying positive and negative themes and sentiments towards border security, including the use of GEOINT in border security, within articles. Coding content as positive, negative or neutral is frequently used in studies involving newspaper content analysis. Definitions of positive, negative and neutral are established by the researcher. An example can be seen in Tang's 2012 research paper titled "Media Discourse of Corporate Social Responsibility in China." In Tang's study, positive, negative and neutral codes are used for the coding of 814 articles pertaining to the media's reporting of social corporate responsibility. For this dissertation, positive, negative and neutral definitions are established based on existing homeland security, border security and border-related literature. Specifically, it will code

articles depending on whether the article highlights or downplays successes and failures

of border security, to include the utilization of GEOINT (often referred to in reporting as

"the virtual fence" or "the fence") in border security. Examples of key words and phrases

rendering a negative classification are as follows: border crisis, unsecure border, lack of

security, loss of operational control, porous border, increase in violence (including border

patrol officer deaths along the border) and/or discussion highlighting the failures of

border security initiatives, personnel or associated agencies. Examples of words or

themes rendering a positive classification are as follows: operational control of the

border, secure border, winning the border war, discussions praising border security

personnel, initiatives, agencies or stories pertaining to the government answering citizen

or local government requests for additional manning, money or resources. Articles that do

not lean more positively or negatively, or those that provide an overview of multiple

political candidates' border security plans are coded neutral.

     For the content analysis of newspapers, a random sample (determined by

conducting a key word search for "border security, border fence" with results posted in

order of relevance/best match, not date) of 20 articles per paper, per year of the 19-year

scope will be utilized, resulting in 100 papers analyzed per year, which amounts to a total

of 1,800 papers in the overall content analysis. Analysis will consist of a brief review of

the article title and content for key words and themes in order to classify or code the

article as positive, negative or neutral in terms of how the article portrays the status of

US-Mexican border security. Coding inputs will be inserted into a researcher-developed

spreadsheet. Each newspaper included in this analysis will have its own spreadsheet (see

Figure 9).

Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
		Articles																						
1996	(200)	P	N	NE	0																	Search: border security, border fence	
1997	( )																						
1998	( )																					Coding:	P = Positive
1999	( )																						N= Negative
2000	( )																						NE= Neutral
2001	( )																						0 = No Reporting
2002	( )																						* = Elections Noted
2003	( )																						
2004	( )																						
2005	( )																					2001 = 9/11 Terror Attacks	
2006	( )																						
2007	( )																						
2008	( )																						
2009	( )																						
2010	( )																						
2011	( )																						
2012	( )																						
2013	( )																						
2014	( )																						

Figure 9. Researcher-Developed Coding Tool for Content Analysis (Example)

As recommended in Lacy, Watson, Riffe, and Lovejoy's 2015 article on best practices for content analysis, two coders will be utilized to assure reliability (consistently) and validity in coding methodology. Both coders will utilize the same coding rules, definitions and coding spreadsheets. Coders will not have access to each other's coding results until after each coder has completed their analysis and exchanged their results. Any discrepancies between coders' results that are discovered during the final coding comparison will be flagged for follow-up coder discussion. If a discrepancy cannot be resolved between coders during the discussion, the article will be coded as neutral.

While there is no generally agreed upon recommended sample size for content analysis of newspapers noted in the literature, most researchers select at least five newspapers and 100 or more pieces of text (articles) in their content analysis, stressing the importance of "saturation" to assure reliability and validity (Elo, et al. 2014, Aust, et al. 1993). Aust, Rifle and Lacy explain in "The Effectiveness of Random, Consecutive

Day and Constructed Week Sampling in Newspaper Content Analysis" that there is no recommended standard for sample size given size is determined by nature and scope of the study. They explain that an adequate sample size is needed for validity and reliability, but that size is determined by the researcher and dependent on the nature of the study. Satu Elo, et al. (2014) recommend "saturation" in their article titled "Qualitative Content Analysis, a Focus on Trust Worthiness," but they (and Aust, et al.) do not define or quantify a standard or recommended sample size to achieve "saturation". They add that overly large samples are not always needed, citing Stemple: "He found 12 days -two constructed weeks - sufficient to represent the year, and that "increasing sample size may be a poor investment of the researcher's time." Additionally, Wang and Riffe (2010) explain in their article titled "An Exploration of Sample Sizes for Content Analysis of the New York Times Web Site," found that "Using simple random sampling, the comparisons showed that a sample size of six days was effective and efficient to represent one year of content of the New York Times Online." In Sterling, Fryer, Majeed, and Duong's (2015) study, titled "Promotion of water pipe tobacco use, its variants and accessories in young adult newspapers: a content analysis of message portrayal," six newspapers were utilized over a six-month period with a total of 87 advertisements being analyzed in the content analysis. In Tang's study (2012), titled "Media discourse of corporate social responsibility in China: a content analysis of newspapers" five newspapers were utilized (one national paper and four regional papers) resulting in 814 articles being analyzed in the content analysis. Additionally, in Chavez, Whiteford and Hoewe's 2010 article titled "Reporting on Immigration: A Content Analysis of Major US Newspapers' Coverage of Mexican Immigration", four major US

newspapers were included in the study, with an analysis focus on patterns, topics, themes and frequency of reporting. In Chavez, Whiteford and Hoewe's study, the researchers chose the *New York Times*, *Washington Post*, *Wall Street Journal*, and *USA Today* for their rankings on the top 100 most read newspapers in the US (Chavez, Whiteford and Hoewe 2010).

Though some researchers have chosen to utilize larger newspaper sample sizes in their content analysis, specifically more newspapers, each have tended to scope the period of analysis in order to assure a manageable sample size. For example, Zhang and Swanson (2006) analyzed 84 articles from January and February of 2005 that pertained to Corporate Social Responsibility; articles originated from 33 US newspapers and 18 international papers.

While the number of originating papers was significantly higher than the number used in previously referenced studies (which typically utilize five papers), the researchers scoped the period of analysis down to two months. Moriarty, Jensen and Stryker's (2009) research on cancer news coverage also utilized a larger newspaper sample size. In this study, the researchers utilized 44 major US newspapers resulting in a content analysis of 3,656 news stories. That said, the researcher's analysis specifically focused on one single year, 2003. As a result of their research, Moriarty, Jensen and Stryker (2009) determined, based on media coverage for 2003, that research institutions receive more media coverage than medical journals and pharmaceutical companies.

Given the nature of this dissertation, specifically the intent to analyze the effects of GEOINT before and after the 9/11 terror attacks (a scope spanning a 19 year period),

recent recommended guidelines for content analysis outlined by content analysis research

experts, Lacy, Watson, Riffe and Lovejoy in their article titled, "Issues and Best

Practices in Content Analysis" (2015), and based on content analysis examples such as

the aforementioned studies, this dissertation will include five newspapers and the analysis

and coding of 1,800 newspaper articles during the period of this study (1996-2014).

Table 1 provides a scope/sample size comparison of this dissertation against recent

studies that entailed the use of newspaper content analysis.

Title	Researchers	Newspapers Utilized	Scope	Documents Analyzed
"The Effects of Geospatial Intelligence on US-Mexico Border Security"	Heather R. Martin (2018)	5	19 years	1,800
"Reporting on Immigration: A Content Analysis of Major US Newspapers' Coverage of Mexican Immigration"	Chavez, Whiteford and Hoewe (2010)	4	1 year	160
"Promotion of water pipe tobacco use, its variants and accessories in young adult newspapers: a content analysis of message portrayal"	Fryer, Majeed, Duong (2015)	6	6 months	87
"Media discourse of corporate social responsibility in China: a content analysis of newspapers"	Tang (2012)	5	1 year	814
"Analysis of News Media's Representation of Corporate Social Responsibility (CSR)"	Zhang and Swanson (2006)	51	2 months	84

"Frequently cited sources in cancer news coverage: a content analysis examining the relationship between cancer news content and source citation"	Moriarty, Jensen and Stryker (2009)	44	1 year	3,656

Table 1 *Content Analysis – Scope and Sample Size Comparison*

Third, to capture elite (political/government) perceptions of border security and the role of GEOINT as a securitization instrument/tool, a content analysis will be conducted on Government Accountability Office (GAO) reports published during the period of study pertaining to border security and reports regarding GEOINT technology along the US-Mexican border. A key word search for "border" will be conducted via the GAO archive database (a preliminary search using the terms "border security/border fence" resulted in very few results therefore, "border" is used as results on this topic are best gathered via this key word). All articles pertaining to border security that come up in the key word search will be analyzed. Analysis of government reporting will be focused on positive or negative themes throughout these documents that either downplay or highlight successes or failures in border security, to include GEOINT utilization along the border. A tool similar to that used for newspaper content analysis (Figure 9) will be used by coders for the GAO content analysis. The same rules and discrepancy resolution plan used for the newspaper analysis will also be used for the GAO content analysis.

Last, interviews with border security experts who manage border security operations (which include GEOINT operations and analysis) will be conducted to obtain expert insight into the utilization of GEOINT and to gain clarification on any noted trends in the descriptive statics. Interview procedures will mirror Fink's (2003) recommended

techniques for semi-structured interviews given the techniques ability to provide a

flexible interview process. Interviews will be conducted with border security experts

(Chief Patrol Agents or their designated representatives responsible for border security

operations) in California, Arizona, New Mexico and Texas and the Texas Border Security

Operations Center, specifically the Commander of the Texas Rangers Special Operations

Group. Of note, Texas is the only state with a shared land-border with Mexico that

possesses its own border operations center therefore, an interview with the border expert

from this center will provide useful insight into how Texas is similar, and different than

its neighbors, in how it manages border security.

    According to Yin (1994), face-to-face interviews are preferred given they provide

the researcher and the interviewee the ability to view and read social queues during the

interview, and in turn adjust interview questions as needed, however, due to researcher-

specific geographic constraints, interviews will occur via phone. All interviewees will be

provided the list of questions prior to the interview to assure the interviewee has ample

time to obtain the needed information that will be requested during the interview.

Interviews will assist the researcher in identifying how GEOINT, as a securitization

instrument and tool, was utilized pre-9/11 and post-9-11, differences and similarities in

how GEOINT was/is utilized in California, Arizona, New Mexico and Texas to

understand any positive, or negative effects that GEOINT has had on US-Mexican border

security (see Appendix A for interview questions).

    Interview questions outlined in Appendix A were designed after an initial meeting

with the Director of the Texas Department of Public Safety and the Manager of the Texas

Border Security Operations Center (BSOC) in February 2015. After making initial

contact with the Department in late 2014, the Department invited the author to its

Headquarters in Austin, Texas, to discuss the intended research as well as to obtain

information on the type and availability of data that the BSOC and the Border Patrol

Centers maintain. Additionally, an initial set of draft/proposed interview questions were

reviewed with the BSOC Manager during this visit. Questions in Appendix A have been

modified and further scoped/tailored for this dissertation as a result of that initial

meeting; tailoring included removing questions from the list that did not pertain to the

research questions. Follow-up discussions were held with BSOC specialists in 2016 to

confirm availability of and access to needed data for this dissertation.

Data collected during and for the descriptive statistics analysis, content analysis of

newspaper and government reports and interviews will be organized utilizing researcher-

developed data tools (spreadsheets) given that Bloomberg and Volpe (2008), as well as

Fink and Oishi (2003) have highlighted the importance of utilizing such organizational

tools to assist in organizing dissertation data as it is collected. These tools assist the

researcher in conducting an analysis of large amounts of data. A researcher-developed

organizational tool is preferred for this study over Computer Aided Qualitative Data

Analysis Software (CAQDAS), given concerns over potential misinterpretation of data or

themes by the CAQDAS, which could result in a skewed analysis or misleading findings

(Baxter 2008, Rodik and Primorac 2015). All data (including interview data) that is

collected for this study will be stored on the researcher's computer hard drive and

properly secured. Data will be backed-up daily, automatically, to a removable hard drive

and stored in a locked desk in accordance with Institutional Review Board (IRB)

protocol. Data collected and analyzed will be used for professional and academic purposes only.

A case study is the most appropriate method of study for this dissertation due to case studies being the primary research method for securitization studies (Balzacq 2011). According to Yin (2003), case studies are fitting when " 'how' or 'why' questions are posed, when the investigator has little control over events and when the focus is on a contemporary phenomenon within some real-life context". Additionally, case studies are appropriate when researchers "seek to achieve both more complex and fuller explanations of phenomena" (De Vas (2001). A case study involving multiple cases is the most appropriate research method for this dissertation, given "how" and "why" questions are being posed and an in-depth analysis on the outcomes of a particular securitization instrument/tool (GEOINT) is being performed. Quantitative methods alone cannot appropriately evaluate this problem set (de Vaus 2001).

Performing a quantitative analysis to determine the operational and symbolic effects of GEOINT as a securitization instrument/tool would be difficult, as the researcher would be unable to know how many illegal border crossers crossed the border without being detected and a quantitative analysis would provide no insight into the way in which GEOINT may contribute to the existing narrative that illegal immigration poses a national security threat along the southern border. Maril (2011) expresses concern over the utilization of quantitative methods for border security issues for this same reason, claiming that border security statistics collected often vary depending on the criteria for collection and coding, which may change from year to year or depending on shifts in leadership within the organization collecting the data (i.e. Department of Homeland

Security). Maril (2011) adds that these statistics are often taken out of context or interpreted incorrectly by government officials which can mislead not only the government but the public as well. Longmire (2014) suggests the use of qualitative methods, and specifically thick description as opposed to quantitative analysis claiming apprehension data, tends to be misleading given its focus on events, instead of people. Longmire highlights that quantitative data does not indicate how many illegal border crossers made it through the border undetected.

Prejudices and critiques associated with utilizing case studies include concerns over potential lack of rigor or scientific method. Kennedy (1979) explains that while researchers associated with the hard sciences prefer quantitative studies, those studies often overlook or oversimplify issues, making incorrect assumptions or generalizations. This is where an in-depth case study can provide insight into certain aspects of a population that might be overlooked in a purely quantitate study. That said, Kennedy does warn against the use of a single case study for generalization purposes. Likewise, Stake (2006) stresses the challenges associated with a single case study, explaining that single case studies are not ideal for application or generalization of issues given they can be too narrowly focused. Stake, like Kennedy, stresses the use of multiple case studies, which will be utilized in this dissertation.

Sudman and Bradburn (1982) highlight the specific challenges and concerns associated with case study methods, such as those outlined by Yin, namely, challenges associated with the use of interviews. Sudman and Bradburn explain that while most researchers assume developing questions and holding conversations with interviewees is intuitive, in fact, questions not properly developed can often lead the interviewee in

certain directions, even unintentionally, which may result in bias. They stress the importance of utilizing a structured and standardized set of questions when interviewing multiple subjects within a case study, to assure consistency and reliability in data collection.

   To overcome these concerns and to avoid bias potentially associated with a solely quantitative analysis, this dissertation leverages Yin's (2003) recommendation of conducting an in-depth qualitative analysis that "relies on multiple sources of evidence, with data needing to converge in a triangulating fashion." As outlined previously, this study will utilize descriptive statistics, content analysis and interviews. While some of the factors are more quantitative in nature (e.g., numeric representations of illegal border crossing detections and apprehensions), others are more qualitative in nature, drawing out non-numeric factors that may potentially illustrate the symbolic role of GEOINT in reaffirming existing frames and narratives about illegal immigration and security. Bringing both quantitative and qualitative factors into one fused analysis will increase the reliability and validity of the study by assuring a more in-depth level of analysis is conducted. Descriptive statistics alone are not adequate to base conclusions on the effectiveness of GEOINT along the border given apprehension rates do not lend insight into how many illegal border crossers made it across the border undetected. Likewise, content analysis of papers and government reporting alone is not sufficient as news media and government reporting may demonstrate biases. Bringing the three methods (analysis of descriptive statistics, content analysis and interviews) together as sub-set of the case study will provide a deeper, more balanced analysis. Securitization theorist Thierry Balzacq explains that it is not uncommon in qualitative securitization studies to use

techniques that are more often associated with quantitative studies, such as content analysis, which may include quantifying and coding of data. He adds that the use of these techniques should not be discounted given their ability to add additional depth to the overall analysis (Balzacq 2011).

This dissertation uses illegal border crossing detections and apprehension as a measure of border security and considers the role of 13 factors that may affect detections and apprehensions along the US-Mexican border: GEOINT sensors in operation along the border, terrain, analyst manning, agent manning, analyst training, agent training, analyst experience, agent experience, information technology reliability for analysts, information technology reliability for agents, federal funding, economic conditions in Mexico and political conditions in Mexico.

GEOINT technology considers the utilization and application of GEOINT as a securitization instrument/tool (such as ground-based and airborne full-motion video cameras, IR and SAR sensors) along the US-Mexican border and includes information pertaining to the number of sensors in operation, frequency of apprehensions specifically tied to GEOINT detections and specific employment methods. Terrain considers how amenable the terrain is to the placement of (to include covert placements) or application of GEOINT sensors. It also considers terrain's effect on sensors such as how trees, brush and even wildlife may contribute to false-positives, for example. Analyst manning considers whether there are enough analysts available to analyze the vast GEOINT data being collected. Agent manning (Border Patrol Agent ("Agent")) manning, considers Agents' ability to respond or take action on GEOINT information received from analysts.

Analyst training considers the nature and amount of training that analysts receive. Likewise, Agent training considers the nature of and amount of training that Agents receive. Analyst experience takes into consideration an analyst's experience levels and expertise, specifically looking at the number of years of analytical experience, to include but not limited to, GEOINT analytical experience, prior experience as a military or intelligence community analyst, and certifications held. Agent experience considers the amount of experience and background for Agents. Information technology (IT) reliability for analysts and agents is considered in order determine if system reliability effects the role of GEOINT and the ability to use GEOINT along the border. Federal funding is evaluated to understand the role it plays in border security to include the acquisition/employment of GEOINT. Economic and political conditions in Mexico are considered in order to determine whether outside factors effect illegal immigration flow across the US-Mexico border. Economic changes consider GDP and unemployment rates while political changes consider the role of Mexican presidential elections on illegal immigration trends.

<center>Accessibility of Data and Contingency Plans</center>

Much of the data collected and analyzed in this dissertation is available via on-line/public-access databases however, for data that is not readily available, the researcher will submit a Freedom of Information Act (FOIA) request, utilize interview data and publicly available annual CBP and Congressional Research Service (CRS) border security reports. The following outlines researcher contingency plans for analysis should certain data not be available, despite researcher efforts to obtain it.

Regarding illegal border crosser apprehensions and detections, descriptive statistics are available via DHS on-line statistical archives on annual apprehension rates for the entire scope of this study. Detection rates are not readily available via the on-line archive however, they have been requested via the FOIA process. If the FOIA request is not approved and/or the data is deemed classified or non-existent, the analysis in this dissertation will focus on apprehension data and will explain in the analysis the limiting factor of not having access to the detection data.

Regarding the 13 factors considered in this study, DHS on-line databases and archives as well as GAO and CRS reporting archives provide most of the data. For the GEOINT, information pertaining to the type of GEOINT assets deployed along the southern border is evaluated. Exact numbers of all GEOINT sensors along the southern border are not readily available via the on-line archive but are requested in the FOIA request. If exact numbers of sensors are not provided via the FOIA request or deemed classified, the analysis in this dissertation will rely on inventory numbers provided via publicly available annual status of border security reports (published by DHS/CBP) and other government reporting as well as interview data. Terrain information for each State is readily available and questions pertaining to terrain impact on sensors will be requested during interviews with border security experts. General manning statistics are available via the DHS statistical database on-line; specifics on Agent versus Analyst manning will be requested through FOIA however, if the request is denied or finds this information to be non-existent, the analysis in this dissertation will rely on the general manning statistics and any clarifying reporting on agent and analyst manning noted in DHS, CRS, GAO border security status reporting and interviews. Training, experience and IT statistics for

agents and analysts are not readily available via the DHS on-line archive but will be included in the FOIA request. If the request is denied or found non-existent, information on training/experience gathered from DHS/CBP, CRS, GAO border security status reporting and information gathered during the interviews will be used.

Annual border security funding statistics are available via the DHS archive on-line. If state-specific border funding information is not available, general DHS/CBP funding statistics and information will be used in the analysis. Information pertaining to Mexico's economic changes (specifically GDP and unemployment rates) is readily available via the World Bank statistical database. Information pertaining to political conditions/changes in Mexico (election years, changes in ruling political parties, etc.) during the scope is readily available via existing literature and publicly available databases. Finally, regarding the content analysis of newspapers and government reporting, preliminary searches to test newspaper key words and availability of archives for the scope were performed and, coding rules and instructions were prepared to assure consistency between coders. If data challenges are presented during the execution of the content analysis, those challenges will be documented, addressed and explained in the analysis portion of this dissertation.

CHAPTER IV – ANALYSIS & FINDINGS

This chapter provides an analysis of the findings of this study and is organized into four main sections. Section one provides a summary of findings which includes a review of the research questions and a brief explanation as to whether the central arguments were supported, based on the available data. Section two provides information pertaining to the reliability of measures, specifically outlining the rationale for methods chosen in this study, a review of data used and factors considered in the analysis, as well as an explanation regarding data challenges and how those challenges were managed by the researcher. Section three provides a case-specific analysis which outlines the role of GEOINT along the southern borders of California, Arizona, New Mexico and Texas and also outlines the role of the other 12 factors considered in this study. Section four provides overall findings which includes a comparative analysis across all four cases as well as a detailed explanation pertaining to why some central arguments are found to be supported, while others are not. Additionally, section four provides an analysis of findings by factor.

Summary of Findings

Regarding the first research question, "To what extent does securitization theory explain the role of GEOINT, as a securitization instrument and tool, in reproducing the narrative associated with the threat of illegal immigration along the US-Mexico border?", this study finds that the first central argument, "Securitization theory illustrates that

GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed", is supported. The presence of GEOINT sensors along the border provides the perception that the border is a dangerous place and thus requires military-type reconnaissance or as Salamon (2002) explains, tools "embody a specific image of the threat and, to a large extent, what ought to be done about it". This adds to the existing narrative seen in the content analysis performed in this study where phrases such as "border war" and "border crisis" are seen.

Regarding the second research question, "To what extent has GEOINT, as a securitization instrument and tool, affected US-Mexican border security generally and, specifically, the ability of the United States to both detect and apprehend individuals who cross the border illegally?," this dissertation finds that the second central argument, "An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has in general, positively affected US-Mexican border security, by providing law enforcement and border patrol agents an increased understanding of the border, including pattern-of-life information pertaining to where illegal border crossers tend to cross", is supported. The data indicates that GEOINT does more than just detect illegal border crossers; a large part of the GEOINT mission is detecting drug and smuggling routes, providing pattern of life information for strategic and operational planners and, serving as a force multiplier in areas where agents are not present (Robertson 2017).

The third central argument, "An increase in GEOINT capabilities along the US-Mexican border since the 9/11 attacks has positively affected US-Mexican border

security by specifically increasing America's capacity to *detect* individuals crossing the border illegally", this central argument is not supported based on a lack of publicly available data on annual GEOINT detections. Annual GEOINT detection data was not publicly available for every year of the period of study, despite researcher efforts to obtain it via the Freedom of Information Act (FOIA) processes as well as interviews with CBP experts. The fourth central argument, "An increase in GEOINT capabilities along the US-Mexican border since 9/11 has positively affected US-Mexican border security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally", also cannot be supported due to a lack of available data pertaining to apprehensions specifically made as a result of a GEOINT detection.

Regarding the third research question, "Is the United States able to fully utilize the benefits that GEOINT, as a securitization instrument and tool, can offer along the border?" this dissertation finds that the fifth central argument, "The United States has been unable to fully utilize the benefits of GEOINT capabilities (such as being able to analyze and take action on all GEOINT collected) along the border due to a shortfall in analyst and agent manpower," cannot be supported due to a lack of publicly available data pertaining to analyst and agent manpower.

This dissertation assessed the applicability of securitization theory and found the theory to be useful in analyzing both the operational and symbolic effects of GEOINT as a securitization instrument and tool. The theory claims that threats are socially constructed (by using certain words, phrases and actions which frame a particular issue as a national security threat) in order to justify a particular instrument or tool to be implemented in response to such threat an (Balzacq 2011). Once an issue is successfully

securitized (deemed a national security threat), it can continue to be securitized over time, by either securitizing actors (political or security elites) or by security tools themselves. Security tools are instruments fielded to respond to a particular threat but their mere nature, existence and use further securitize the issue by contributing to the perception of the issue being a grave threat to national security (Balzacq 2008). During the content analysis of this study, certain themes, language, and wording was seen in newspaper reporting (use of "border war", "border emergency", "porous border") that further securitize border issues and thus continue to justify the physical and virtual (GEOINT) wall as well as manning and funding increases. For example, Arizona reporting in 2005 mentions an "emergency on the border" in the same article calling for additional funding.

Reliability of Measures

In order to address the three research questions presented in this dissertation, a comparative case study analysis using securitization theory, which is concerned with understanding the ways threats are socially constructed and/or amplified as well as understanding the outcomes of those amplifications, was employed (Buzan, Waever, Wilde 1998, Balzacq 2011). Balzcaq offers three levels of analysis under Securitization theory: Agents, Context and Acts but recommends using the level that is best suited for the research question, as opposed to using all three levels. The Agents level of analysis is focused on understanding the people involved in securitizing issues and their motives. The Context level of analysis focuses on the context (such as political climate and timeframe) in which the act of securitizing an issue occurs. In order to further existing research on the Acts level of analysis which is concerned with the outcomes of

securitization moves, particularly the effects of securitization instruments and tools, this dissertation used the Acts level of analysis (Balzacq 2011).

Of the three levels of analysis, the Acts level of analysis is the level most appropriate for this study given its focus on the outcomes of securitization instruments and tools (see figure 10). To explain, issues pertaining to the southwest border, such as illegal immigration, were securitized as early as the 1970s, via securitization acts (also referred to as securitization moves). These securitization moves were made by using speech acts (certain words and phrases that resonate with the audience) in order to frame these issues in the media as threats to national security (Nevins 2002). An amplification of existing illegal immigration frames occurred after Al Qaeda's terrorist attacks against the United States on 11 September 2001 in which links were drawn between terrorism and illegal immigration, resulting in the fielding of a particular securitization instrument and tool, GEOINT (Wagner 2016). This study investigates the outcomes of the post-9/11 amplification of existing security frames surrounding illegal immigration by studying the effects of a specific securitization instrument and tool (GEOINT) that was fielded after 9/11 to counter the illegal immigration threat.
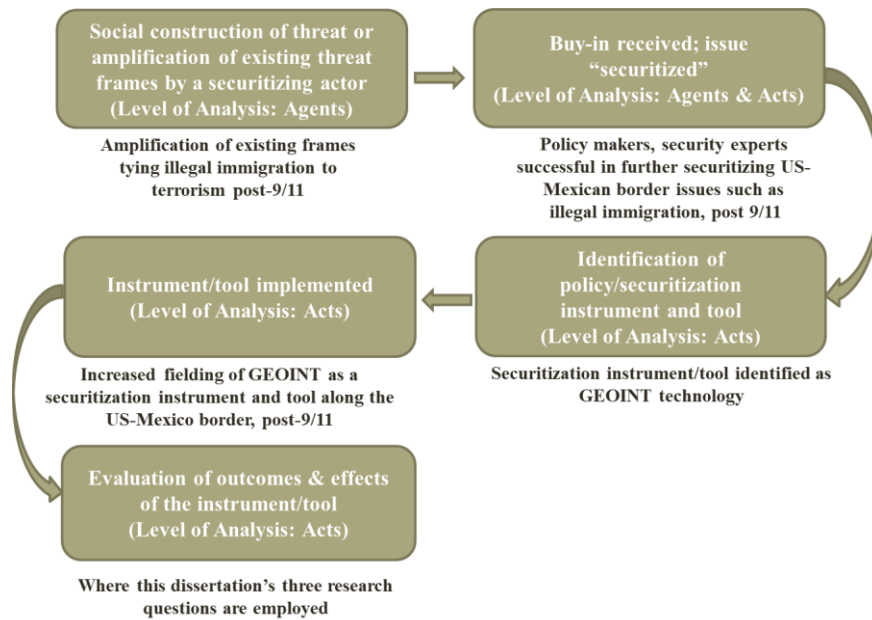
Figure 10. Application of securitization theory in this dissertation.

There are no specific methods associated with the Acts level of analysis, but Balzcaq recommends a case study utilizing various techniques such as content analysis and interviews. For this dissertation, a comparative analysis of case studies of California, Arizona, New Mexico and Texas, was accomplished with a temporal scope of 1996-2014. Three techniques were used in analyzing each case study: descriptive data analysis, content analysis, and interviews. Each case study evaluated the way in which the federal government's plan for border security (including the use of GEOINT capabilities) was implemented in that particular state and how those capabilities affected security along the state's respective US-Mexico border. Each case study considered the effects of 13 factors on annual illegal border crossing apprehensions (detection data was not available) and evaluated the way in which GEOINT was utilized along its respective portion of the US-Mexico border.

The 13 factors are as follows:

     1. GEOINT sensors in operation along the border.

     2. Terrain.

     3. Analyst manning.

     4. Agent manning.

     5. Analyst training.

     6. Agent training.

     7. Analyst experience.

     8. Agent experience.

     9. Information technology reliability for Analysts.

     10. Information technology reliability for Agents.

     11. Federal funding.

     12. Economic conditions in Mexico.

     13. Political conditions in Mexico.

A combination of sub-methods was utilized to provide a thorough analysis of how border security initiatives, including the use of GEOINT, as a securitization instrument and tool, were implemented in each state under consideration. Specifically, descriptive data from DHS were used to provide a general understanding of illegal border crossing apprehension trends over the 19-year period of study. Illegal border crossing detection rates were originally part of the research design as a measure of border security, however, given the data was not available, apprehension rates were used in the analysis and are an appropriate measure for border security given they are the current standard that DHS uses

for measuring border security and, there are no commonly accepted measurements for border security in recent border security academic studies. Available data from DHS on annual manning, funding, training, and experience rates from 1996-2014 was also utilized to evaluate whether these factors affected border security. The DHS descriptive statistics and descriptive data in annual reports are appropriate data to evaluate manning, funding, training and experience trends for the timeframe under examination given they are frequently utilized in border security reports prepared for congressional updates and congressional meetings involving border security funding requests. That said, it is important to note that US CBP funding statistics do not specifically identify how funding was spent, meaning it is possible that funds specifically allocated for "training" are also included and accounted for in the "funding" factor, thus complicating the analysis between these factors and border security. To overcome this challenge, descriptive data (non-statistical data) from CBP Annual Border Security Reports and GAO border security reports was used to identify information specifically related to training.

The Texas Border Security Operations Center (BSOC) and DHS statistics pertaining to the number and type of GEOINT sensors operating along the border were used to evaluate potential increases in sensor fielding and operations as well as information relating to information technology reliability. BSOC data pertaining to specific types of capabilities along the Texas-Mexico border augments the DHS data which provided a general estimate of the total number of sensors as well as general information regarding the types of GEOINT capabilities in operation along the southern border. Utilizing the type and number of sensors in operation is an appropriate measure for the "GEOINT" factor, given this data provides information pertaining not just to the

quantity but also the type of sensors. Including data on sensor types allows for an analysis

that considers the value of GEOINT data being collected along the southern border. This

is an important consideration given some GEOINT sensors may be better suited for the

southern border mission than others. For example, some border security reconnaissance

mission planners may prefer GEOINT data from a Tethered Aerostat Radar System

(TARS) over GEOINT data coming from an Unmanned Aircraft System (UAS) given

TARS (a blimp carrying GEOINT sensors) have the ability to remain in place collecting

GEOINT for several days, providing continuous coverage whereas UAS (drones) are

required to return to their base of origin after a set period of flight time

(CBP.Gov/Frontline).

Descriptive statistics from the World Bank were utilized to evaluate changes in

Mexico's economy, namely Gross Domestic Product (GDP) and unemployment changes

to determine how these factors affect apprehension rates during the period of study.

Unemployment rates and GDP are appropriate measures of economic change within a

country, according to the World Bank (2016). With regard to political change, while

there are various types of political changes that could be considered, this research solely

focused on the impact of Presidential Elections in Mexico and whether the occurrence of

an election or changes in the presidency itself may have affected border security. The

focus on elections in Mexico was based on descriptive data showing that the majority of

illegal border crossers entering via the southwest border across the entire period under

examination were Mexican citizens.

Election data from the International Foundation for Electoral Systems (IFES) was

used in this study and, based on existing literature, provides accurate and reliable

information for this dissertation. This dissertation defines "reliable information" as information collected by a reputable research organization or government agency and has been utilized in recent research or peer-reviewed publications. IFES is a non-profit organization funded by the US Agency for International Development (USAID). IFES data is utilized by the United Nations and has been used in recent academic publications such as Kerr's peer-reviewed journal article, "Popular evaluations of election quality in Africa: Evidence from Nigeria," (2013) and Szmolka's peer reviewed journal article, "The fifth wave of democratization? Political change without regime change in Arab countries" (2013).

Regarding the content analysis used in this study, the original research design involved the evaluation of 1,800 newspaper articles based on a random sample, determined by conducting a key word search for "border security and/or border fence" with results listed in order by best match. A total of 20 articles per paper, per year of the 19- year period under examination were to be utilized, resulting in 100 papers analyzed per year, totaling 1,800 papers. That said, only 1,043 articles were available for analysis. Lack of available articles during certain timeframes under examination were likely attributable to restrictions of the key word search. To explain, in testing keyword searches during the early phases of data collection, it was discovered that for some states and some years under examination, searching "border patrol" provided more border security related articles than the key words "border security." However, many of those articles pertained to the US-Canadian border or border issues in other countries. The term "border security" was used during the key word search for all state-specific cases to assure methodological consistency across cases. Regarding the lack of media focus on

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the US-Mexico during some periods of time (1991-2001), much of the reporting/results on "border security" pertained to ethnic conflicts being fought in Yugoslavia or border conflicts between Israel and Lebanon. For this reason, 1,043 newspaper articles pertaining to US-Mexico border security (including the use of GEOINT) were evaluated across four regional newspapers (one from California, Arizona, New Mexico and Texas) and one non-regional/national newspaper (from Washington, D.C.) for positive, negative or neutral themes pertaining to border security and more specifically the use of GEOINT along the southwest border.

The processes and coding methodology followed techniques recommended by content analysis experts Lacy, Watson, Riffe, and Lovejoy (2015). Additionally, processes followed the standard of using multiple newspapers, as well as positive, negative and neutral coding as seen in earlier studies such as Tang (2012), Fryer, Majeed, and Duong (2015), and Chavez, Whiteford and Hoewe (2010). A cursory review of all articles during data collection found no obvious duplication of articles across the various newspaper sources, for example, no re-prints of Washington Post articles in the regional papers or vice versa, however, there were less than 10 instances in which the same article surfaced twice during a key word search for the same regional paper during the same year. This was attributed to the article beginning on one page and continuing on another, resulting in the database pulling it twice. In these instances, the article was only counted and analyzed once.

A similar content analysis was used on government agency reporting obtained from the Government Accountability Office (GAO) database utilizing a key word search

for "border." A preliminary search using the terms "border security and/or border fence" resulted in very few results therefore, "border" was used as it provided more data for the analysis. All reports obtained via the key word search pertaining to US-Mexico border security (73 reports) from 1996-2014 were analyzed. Measures used to determine positive, negative and neutral coding were the same as those used for the newspaper content analysis.

Interviews were requested with CBP Chief Patrol Agents from California, Arizona, New Mexico and Texas as well as the Texas Department of Public Safety's Border Security Operations Center/Texas Rangers Special Operations Group (those responsible for border security operations, including GEOINT collection and analysis along the southern border). Due to classification concerns, CBP Chief Patrol Agents were unable to participate in interviews. That said, the Texas Department of Public Safety provided authorization for the Commander of the Texas Rangers Special Operations Group (which plans and executes border intelligence and surveillance operations) to be interviewed. Interview data was utilized to provide additional context to statistics and content analysis data specific to the state of Texas. Interview questions were crafted prior to conducting the content analysis and were reviewed after the content analysis. No adjustments were made to the interview questions post-content analysis.

Research processes and techniques utilized in this comparative case study are reliable based on Yin's definition of reliability, "demonstrating that the operations of a study-such as the data collection procedures can be repeated, with the same results" (1994). Descriptive data utilized in this dissertation was obtained from state, national (US) and international agencies that publish their methods and data for public access.

Content analysis techniques follow those recommended by experts in the field of content analysis (Lacy, Watson, Riffe, and Lovejoy 2015) and align to the techniques utilized in many recent studies (see Table 2) that involve content analysis. For example, Tang′s 2012 research paper titled "Media Discourse of Corporate Social Responsibility in China" utilizes positive, negative and neutral codes for the coding of 814 articles relating to the media′s reporting of social corporate responsibility (Tang 2012, Fryer, Majeed, and Duong 2015, Chavez, Whiteford and Hoewe, 2010).

Title	Researchers	Newspapers Utilized	Scope	Documents Analyzed
"The Effects of Geospatial Intelligence on US-Mexico Border Security"	Heather R. Martin (2018)	5	19 years	1,043
"Reporting on Immigration: A Content Analysis of Major US Newspapers' Coverage of Mexican Immigration"	Chavez, Whiteford and Hoewe (2010)	4	1 year	160
"Promotion of water pipe tobacco use, its variants and accessories in young adult newspapers: a content analysis of message portrayal"	Fryer, Majeed, Duong (2015)	6	6 months	87
"Media discourse of corporate social responsibility in China: a content analysis of newspapers"	Tang (2012)	5	1 year	814
"Analysis of News Media's Representation of Corporate Social Responsibility (CSR)"	Zhang and Swanson (2006)	51	2 months	84
"Frequently cited sources in cancer news coverage: a content analysis examining the relationship between cancer news content and source citation"	Moriarty, Jensen and Stryker (2009)	44	1 year	3,656

Table 2 *Content Analysis – Scope and Sample Size Comparison*

Interview techniques followed the semi-structured interview procedures outlined and recommended by experts Arlene Fink (2003) and Yin (1994). Interview questions were organized into three sections beginning with questions related to general border security, followed by questions pertaining to the primary research question, and finally, questions relevant to the secondary research question (see Appendix A).

The potential for researcher bias, specifically in the coding of articles as "positive," "negative" or "neutral" for the content analysis of newspapers and government reporting, was minimized by utilizing two coders. The author of this dissertation served as one coder and an undergraduate student colleague served as the second coder. Coders utilized the same agreed-upon rules for coding articles (see Appendix C) and coders did not see each other's analysis until after coding was completed. Discrepancies identified after coding, between coders, were identified and discussed between coders in order to resolve conflicting codes. In most instances, coding discrepancies were a result of coder fatigue resulting in coding errors. However, in instances where coders had opposing codes that could not be resolved, the coders agreed to utilize the "neutral" code as the default given "neutral" represents an impartial coding (not leaning more negatively or positively in one direction).

Potential for researcher bias during interpretation of descriptive statistics and the analysis of descriptive statistics was minimized by utilizing the content analysis of government reporting and interview data during the analysis in order to evaluate the data from different perspectives. Additionally, potential for researcher selection bias in

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interviews was minimized by sending a general request to CBP and the Texas

Department of Public Safety requesting interviews with those responsible for conducting

border security operations or their deputies, as delegated or specified by the agency. This

reduced researcher bias by allowing the agency (not the researcher) to pick the

interviewees.   Yet, had all agencies agreed to participate in the interviews, a lack of

consistency across interviewees (interviewees with varying levels of responsibility, for

example) could have occurred as a result of allowing each agency to select their own

interviewee. In the end, this concern was mitigated given only one agency (Texas DPS)

agreed to be interviewed.

The analysis section of this chapter is organized into three main sections. Section

one provides state-specific analysis for California, Arizona, New Mexico, and Texas and

explores how each state conducts border security. The section explores each factor and

draws on available descriptive statistics, content analysis and interview data. Section two

provides an overall assessment of border security during the period under examination,

taking all cases into account and, providing a comparison of how border security is

executed across the four-southwest border-states. Section three provides an analysis by

factor.

<div align="center">Analysis</div>

Case 1 – California

California experienced an overall decrease in apprehensions of illegal border

crossers during the timeframe under examination, as shown in figure 11. According to the

DHS 2012-2016 Strategic Plan, a decrease in apprehensions is a sign of strong border

security. Apprehensions are defined as foreign nationals who have illegally entered the

US. Specifically, DHS offers this definition in its 2011 apprehension statistics report:

"Apprehension statistics measure the number of foreign nationals who are caught in the

United States illegally. Persons apprehended are subject to removal from the United

States for violating the Immigration and Nationality Act. The vast majority of

apprehensions, occurring at or near US borders shortly after an illegal entry, are made by

the Border Patrol of US Customs and Border Protection (CBP) of DHS" (DHS/Sapp

2011).
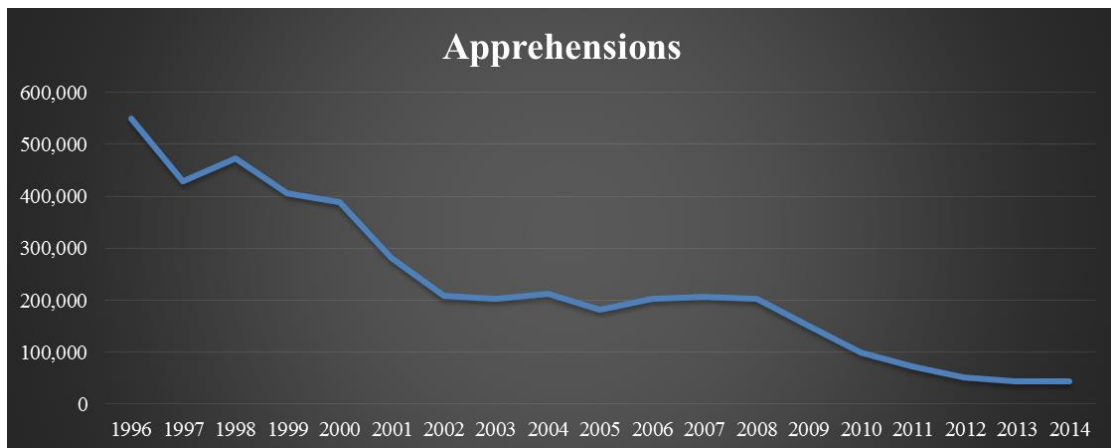
Figure 11. Annual border apprehension rates for California.

Dates: 1996-2014. Source: CBP.

The data in figure 12 suggests a relationship between increased CBP manning and

federal funding for border security and a decrease in apprehensions. According to DHS

and CBP, this relationship is attributed to deterrence. However, previous studies indicate

increased manning does not significantly affect apprehension rates, it only has short term

deterrence (not long term) effects on where and when individuals cross the border

(Robertson 2017, Cornelius & Salehyan 2007). Cornelius and Salehyan (2007) and

Espanshade, et al**.** (1997) explain that border security strategies such as increasing

manning, have *some* deterrent effects but are hard to quantify. They explain that despite

the increased probably of detection, most crossers will still cross however, they may

cross in other areas, at different times or in larger groups. A 2005 study utilizing

interview data from illegal border crossers indicated 55 of 603 interviewees were deterred

from crossing due to increased border security, which, according to Cornelius &

Salehyan (2007), was not a statistically significant number. Additionally, data from the

content analysis (2003-2004, 2006-2007, 2013) suggest crossers are using tunnels to

evade increased CBP manning on the border.
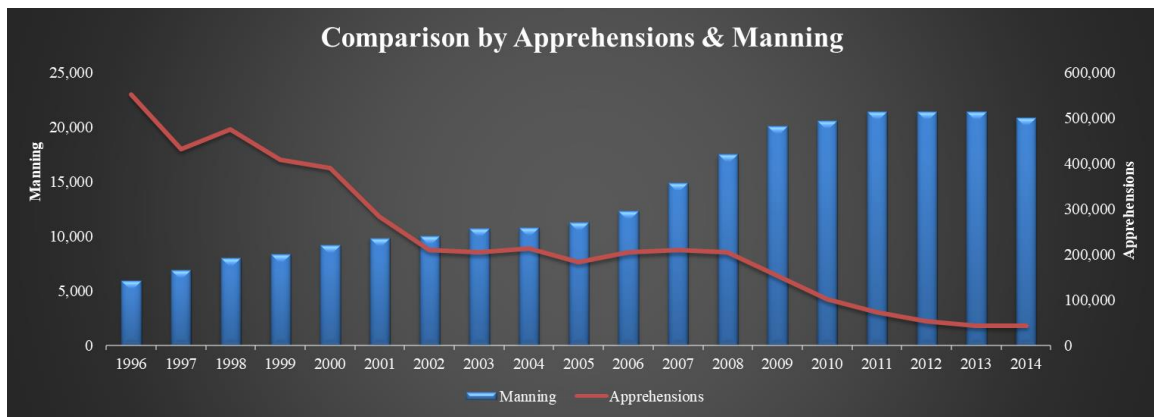
Figure 12. Annual border apprehension rates for California vs. manning.

Dates: 1996-2014. Source: CBP.
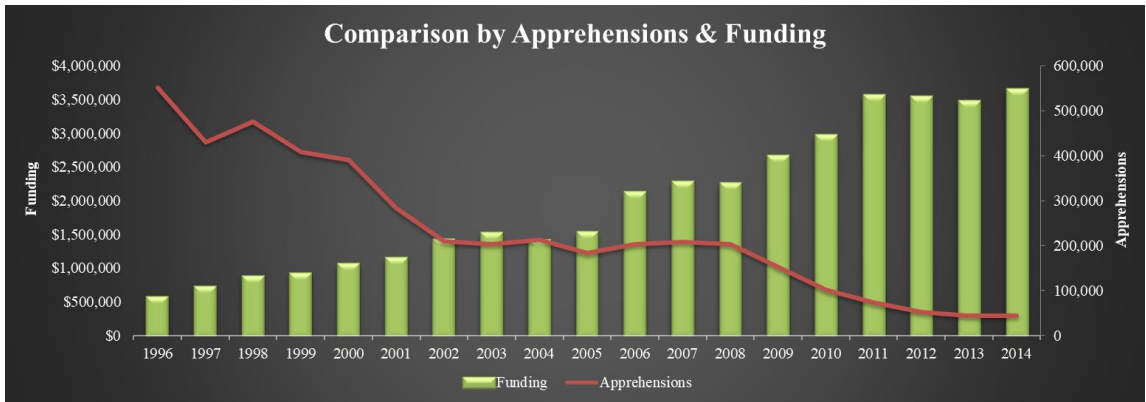
Figure 13. Annual border apprehension rates for California vs. funding.

Dates: 1996-2014. Source: CBP.

Due to a lack of available data, the researcher was unable to determine the extent to which GEOINT technology played a role in the decrease in apprehensions. Figure 14 shows the concentration of GEOINT assets along the California-Mexico border as of 2012.

Figure 14. GEOINT coverage along the California-Mexico border.

Source: CBP 2012.

It is important to note that California conducted multiple operations along its southern border in the 1990s, which included the use of GEOINT and a surge of operations in order to detect and deter illegal border crossers. Operations and initiatives that occurred in the San Diego sector of the border during the period under examination include: Border Safety Initiative (1998), creation of the Border Patrol Search, Trauma and Rescue Team (1998), creation of the Smuggling Interdiction Group (2005) and Campaign Stronghold (2009) (CBP 2016). Though these operations entailed the use of GEOINT, they were largely focused on border safety conditions and targeting criminal activity, such as drug smuggling.

CBP notes that illegal crossers have taken to using air, maritime and even tunnels to cross into the US illegally over the past decade (CBP 2016, FAIR 2016). This means that there are illegal border crossers entering the US undetected or, there may be gaps in GEOINT sensor coverage as well as CBP agent coverage in particular areas. For this reason, future studies on this topic should include information on border crossers utilizing air, maritime and tunnels as well as information pertaining to gaps in GEOINT sensor coverage.

Though not one of the 13 factors, during the course of this study it was discovered that US policy changes such as the passage of California Proposition 187, which sought to require schools and health care institutions to verify a parents and their children's citizenship for enrollment, affected apprehension rates for this state (Migration News 1994). Additionally, federal legislation passed in 1996 (Illegal Immigration Reform & Immigrant Responsibility Act, "IIRIRA") requiring employers to verify social security numbers before hiring, also affected apprehension rates given it made obtaining a job

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more difficult for illegal border crossers and, worked as a deterrent for employers who frequently used illegal immigrant laborers (FAIR 2016, Congress.gov 2016). Though California possesses only a 60-mile international land border with Mexico (the least amount of shared land border of all four cases), the state's San Diego sector of the border accounted for 40% of illegal border crosser apprehensions in the early 1990s due to the densely populated neighborhoods surrounding this border crossing point, making it easier for illegal crossers to blend in to the general population to evade detection and capture (CBP 2017).

In terms of funding, while DHS data suggests a relationship between increased CBP manning and funding and decreased apprehension rates in California, state-specific border security funding statistics were not available. However, California state annual budget statistics from 2007-2014, reveal no dedicated funds for "border security" in the budgets except for fiscal year (FY) 2008 and 2009. During this timeframe, port security grants are indicated in the amount of $41 million and $58 million, respectively, with a note that this funding would be executed over a series of fiscal years (California Governor's Office 2016). According to the research, California border security funds largely come from federal/DHS homeland and border security grants. The Operation Stonegarden grants which provide funding for border security-related initiatives were specifically noted as one of the larger grants. Statistics pertaining to the number of grants and annual amount that California has received are not available, though it was noted in a 2009 DHS press release that the state received $7,391,931 in FY 2009 under the Stonegarden grant program and, the California-Mexico Border Relations Council annual report for 2014 notes that the state received an additional $1 million in 2014 from

Stonegarden (DHS 2009, CALEPA 2014). As with the manning factor, researchers

Cornelius and Salehyan (2007) and Espanshade, et al. (1997) suggest that additional

resources (be it funding, manning or other) do not have a long-term deterrent effect on

illegal border crossers, thus, do not significantly affect apprehension rates.

The state of California has a Border Division within the California Highway

patrol, which is funded through California's annual budget. This division consists of 12

offices with five inspection sites and over 1,200 employees (900 are uniformed officers).

Additionally, the division owns 30 aircraft, many of which are equipped with GEOINT

capabilities such as full motion video cameras. The inventory consists of 15 helicopters

and 15 airplanes (California Highway Patrol, California Governor's Office 2016).

Regarding GEOINT, capabilities utilized along the California-Mexico border consist of

stationary Full Motion Video (FMV) cameras, Electro-Optical (EO)/Infrared (IR)

airborne sensors and moving target indicator sensors, and are focused on identifying

illegal border crossers, smugglers and criminal activity between ports of entry (CBP

2016, California Highway Patrol 2016).

The state's terrain is found to have some impact on GEOINT sensor placement

and utilization given the sometimes windy and mountainous terrain can impact the

effectiveness of FMV and Electro-Optical collection, according to the GAO Border

Security Status report on UAVs and GEOINT use released in 2016. In addition to the

aforementioned factors, there does not appear to be a relationship between economic

changes in Mexico, specifically unemployment and GDP, and apprehension rates given

changes in GDP (ECO/Mex) do not relate to changes in apprehensions. Unemployment

is fairly constant and does not appear to shift with apprehension rates (see figure 15).
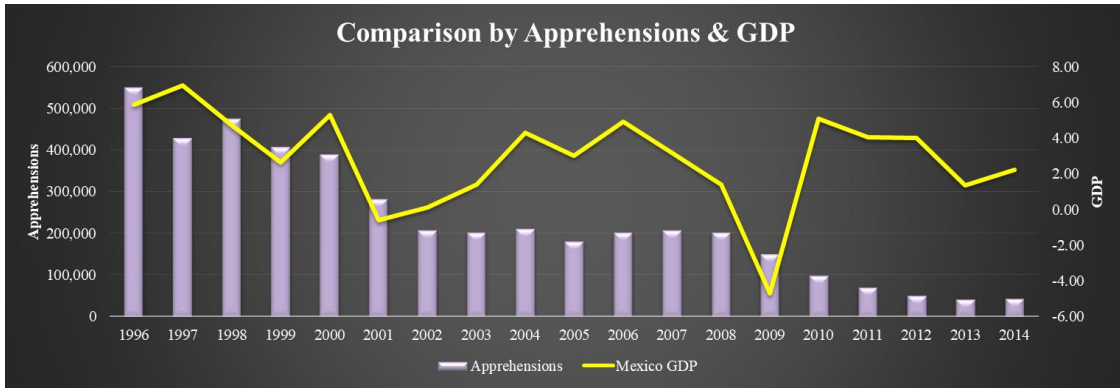
Figure 15. Apprehension rates for California vs. Mexico GDP.

There is no relationship between economic factors (Mexico's GDP), political factors (Mexico's presidential elections) and apprehension rates. Sources: CBP, World Bank, IFES.
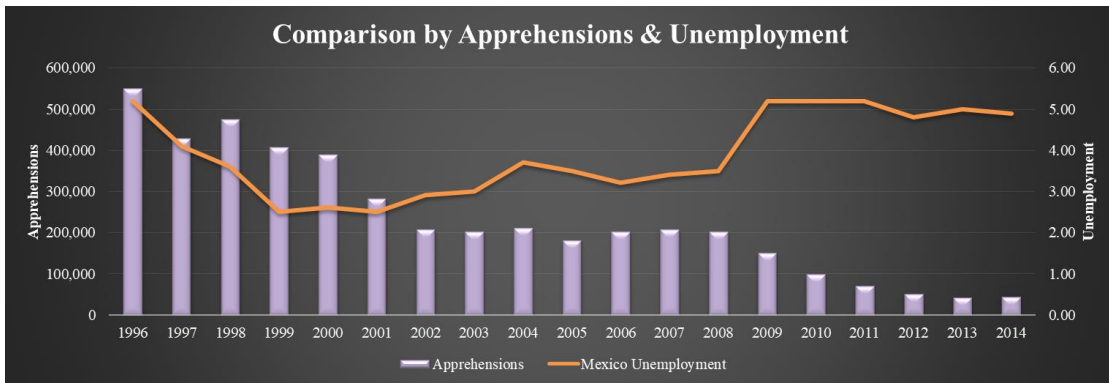
Figure 16. Apprehension rates for California vs. Mexico unemployment.

There is no relationship between economic factors (Mexico's unemployment), political factors (Mexico's presidential elections) and apprehension rates. Sources: CBP, World Bank, IFES.

Due to a lack of data pertaining to agent and analyst training and experience, a determination of relationship between these factors and apprehension rates cannot be

made. Likewise, due to a lack of information technology (IT) reliability data for

California, a determination of whether there is a relationship between IT reliability and

apprehension rates could not be made however, the following IT-related data was

obtained during the course of this study and provides insight into the general amount of

IT-related funding received during certain periods of the study. For example, figure 17

outlines CBP IT budgets from 2003-2014, and accounts for instances in which CBP IT is

not clearly specified but DHS IT is. Information prior to 2003 is sporadic in terms of IT

expenditures and much like the 2003-2014 data, it is co-mingled with other data or buried

within specific program budgets. As noted in the below table, IT expenditures for CBP

were at an all-time high in 2003, at the inception of DHS, which is when CBP became

subordinate to DHS. Since this time, IT investments have decreased, as the stand-up of

DHS and CBP as a subordinate agency have normalized. Of note, from 2007-2008 IT

expenditures rose, which coincides with border technology initiatives such as the Secure

Border Initiative Network (SBI Net).

Year	CBP Fencing, Infrastructure & Technology Budget
2003	$50 billion*
2004	$206 million*
2005	Not reported under line item**
2006	Not reported under line item***
2007	~$1.2 billion
2008	$1 billion
2009	$775 million
2010	~$779 million
2011	$424 million
2012	$385 million
2013	$399 million
2014	$351 million

*CBP budget does not specify "technology" investments for 2003/2004 in their budget but DHS budget accounts for a $50 billion request for info technology investment in 2003 and $206 million in 2004 (some likely attributed to CBP mission)

**CBP Budget has no line item for "Fencing/Infrastructure/Technology" in 2005 budget; DHS technology directorate budget $1 billion; CBP budget includes $20.6 million for staff and "technology" and $64 million for technology detection capabilities.

***CBP Fencing/Infrastructure/Technology Budget has no entry for 2006; reason unknown

Figure 17. CBP IT Expenditures.

Source: DHS Annual Budget-In-Brief Reports, 2003-2014.

With respect to political changes (the occurrence of presidential election) in Mexico, the data shows no relationship between political changes in Mexico and apprehension rates. Three Presidential elections occurred during the period under examination: the 2000 election of Vicente Fox (PAN Party), the 2006 election of Felipe Calderon (PAN Party) and the 2012 election of Enrique Nieto (PRI Party). Apprehensions were high in 2000 which was an election year, and continued to decrease during Fox's term, which may be attributed to his strong partnership with the US president during this time to combat border related violence. Apprehensions increased in 2006 which was also an election year however, 2006 is also the year that Calderon implemented Operation Michoacán, a counter-drug operation that resulted in an increase in violence across Mexico (Reed 2014). Given Calderon's political views and foreign policy (strong relationship with the US) were similar to those of his predecessor, Fox, the increase in apprehensions that year is likely more related to the drug war violence versus the change in presidents. Apprehension rates in 2012 slightly increased during that election year as well, though overall apprehensions are low which indicate that changes

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in the Mexican presidency that year had little impact on migration or at least migration along the California border.

The highest apprehension rates along the California-Mexico border during the timeframe under examination were in 1996, with 550,688 apprehensions. According to DHS and CBP, low apprehension rates, not high apprehension rates, are considered signs of positive border security. To explain, the rationale is that the more technology and agents you place along the border to protect it, the less likely illegal border crossers are to attempt crossing given the high probability of detection and/or capture (Schroeder 2012).

This rationale is not just explained in the most recent CBP Strategic Plan (2012-2016) but also as far back as 1996 GAO reporting on border security:

> Recently, INS changed the Border Patrol's enforcement strategy along the
> Southwest Border from apprehending aliens after they had illegally
> entered to deterring them from entering in the first place. According to INS
> officials, the new strategy is to concentrate agents on the border to rise
> aliens' risk of apprehension to a maximum level and thereby deter aliens
> and alien smugglers from attempting illegal entry.

The data shows that the CBP budget in 1996 was extremely low, only $568,012. The year 1996 also happened to be the lowest budget year for CBP during the entire 19-year span under examination of this study. Further, 1996 had the lowest manning numbers of the timeframe under examination: 5,942 personnel, very little GEOINT capabilities (aside from cameras used at ports of entry) and a limited portion of the border possessed a physical fence given increased physical and virtual fencing (GEOINT cameras/surveillance systems) were not fielded until after the 2006 Secure Fence Act. The aforementioned immigration policy changes in California during that year (IIRIRA) likely affected rates. To explain, IIRIRA presented multiple new immigration and border

security policy changes to include the authorization to build a border fence, setting strict rules on deportation (those found to be in the US illegally for up to 180 days faced a deportation penalty with a three-year ban on re-entry to the US) and restrictions on states' ability to offer free tuition to illegal immigrants (CRS Report 2007). Nimmich (2016) has stated that these types of policy changes, especially when highlighted in the media, have the ability to impact the flow of illegal immigrants into the country. Based on this information, it is possible that an increase in apprehensions in 1996 occurred in part as a result of the impending IIRIRA passage in late 1996 (illegal immigrants rushing to enter the US before IIRIRA-related restrictions went into effect).

The lowest apprehension rates were seen in 2013 with 43,802 apprehensions, which also happened to be a large budget year ($3,466,880). Additionally, increased GEOINT was used along the border to include the use of remotely piloted aircraft (drones) and aerostats (blimps) carrying GEOINT sensors. Further, increases in manning with 21,391 CBP personnel were seen in 2013 which supports the aforementioned relationship between manning and apprehensions (CBP 2016). Of note, government acquisition timelines can take anywhere from several months to four years, depending on the capability being acquired, and hiring timelines for CBP agents can take anywhere from two weeks to two years. Detailed information pertaining to annual acquisition and hiring timelines was not available therefore the relationship between budget, manning and apprehensions could not be fully explored (CBP Information Center 2017, CBP Federal Acquisition Manual 2000).

Regarding content analysis of media reporting, newspaper reporting from the *San Diego Union Tribune* provided 174 articles relevant to border security and the border

fence (physical and virtual). Of those articles, 68 were neutral in messaging, followed by

57 being negative towards the status of US-Mexican border security efforts and

initiatives, and 49 being positive (see figure 18).

San Diego Union Tribune - Content Analysis																							
	Articles																							
Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
1996	(18)	N	P	P	P	P	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0		
1997	(9)	N	P	P	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1998	(15)	NE	NE	NE	P	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Coding:	P = Positive
1999	(4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		N= Negative
2000	(13)	N	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		NE= Neutral
2001	(10)	N	NE	NE	P	NE	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0		0 = No Reporting
2002	(19)	P	N	N	N	N	N	NE	NE	N	P	NE	NE	0	0	0	0	0	0	0	0		
2003	(20)	N	N	N	P	P	P	N	P	N	NE	NE	0	0	0	0	0	0	0	0	0		
2004	(35)	NE	N	N	P	N	P	N	NE	NE	P	NE	N	NE	NE	P	NE	P	NE	0	0	0	2001 = 9/11 Terror Attacks
2005	(47)	P	P	P	N	N	P	P	NE	NE	P	NE	N	P	NE	N	N	N	P	NE	N		
2006	(73)	P	NE	N	P	N	N	P	P	NE	NE	NE	NE	P	P	NE	N	P	NE	N	NE		
2007	(31)	N	N	N	N	P	NE	NE	P	N	P	N	NE	NE	NE	NE	NE	0	0	0	0		
2008	(44)	NE	N	P	N	NE	NE	N	NE	P	NE	N	N	N	N	NE	NE	N	0	0	0		
2009	(24)	NE	NE	N	P	NE	N	NE	NE	NE	0	0	0	0	0	0	0	0	0	0	0		
2010	(13)	NE	NE	P	NE	NE	N	P	P	P	NE	0	0	0	0	0	0	0	0	0	0		
2011	(8)	P	NE	NE	N	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2012	(5)	NE	P	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2013	(11)	NE	NE	P	P	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2014	(9)	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Figure 18. *San Diego Union Tribune* Content Analysis, 1996-2014.

A lack of news stories on border security is seen from 1996-2001, with reporting

climbing in 2002. The dip is likely attributed to key words pertaining to border security

changing from the 1990s to the 2000s. For example, prior to the 2000s, there is little

reference in reporting to "border security" or the "virtual fence." Searches for "border

patrol" in the 1990s tend to render more results than "border security." Therefore, it is

possible that key word search limitations are responsible for the perceived lack of

reporting during these periods of time. Starting in 2009 through 2014 reporting trickles

off which is interesting given this is when apprehensions are lowest, and the budget and

manning is highest, according to the statistics.

The steady/large amount of reporting on border security from 2002-2008 is likely

attributed to the various initiatives that occurred during this timeframe: American Shield

Initiative (2003), movement of the Integrated Surveillance Intelligence System under

American Shield Initiative (2005), implementation of the Secure Border Initiative (2006)

and the signing of the Secure Fence Act (2006). Reporting from 2008 is likely attributed

to the US Presidential election of 2008 during which Presidential hopeful John McCain

spoke often about his work in lobbying for increased border security in his home state of

Arizona. Common themes noted in *The San Diego Union Tribune* reporting of border

security include: resident complaints of increased border crossing wait times following

the 9/11 terrorist attacks as a result of increased security at US-Mexican border

checkpoints, immigration reform, guest-worker programs and the environmental impacts

of the physical border fence. Reporting on GEOINT initiatives is first seen in 2006 but

not specifically mentioned again until 2010 when *The San Diego Union Tribune* reported

that the initiative did not work. This is likely in response to the failed SBI project which

was officially cancelled in 2011. Additionally, increased reporting on US-Mexican

border tunnels is noted starting in 2003 through 2013 which coincides with the significant

increase in GEOINT and other technology fielded (such as biometrics), increased

operations along the border and an increase in CBP manning. Specifically, reporting on

illegal border crossers using tunnels is first seen in 1998 and then not again until 2003.

After this, reports from 2004, 2006, 2007 and 2013 indicate that the increased technology

and manning fielded to the border was successful in deterring illegal border crossers from

crossing but, simply forced these crossers to find new methods for crossing undetected.

In terms of specific or unique wording used in The *San Diego Union Tribune* reporting,

there were no re-occurring terminology as seen with the Arizona reporting where phrases

like "border crisis" and "out of control" were used. There were also no specific themes

such as those seen in the Arizona analysis where many articles discussed opposition to certain border security initiatives such as the border fence, due to impacts to Native American territory.

For California, an interview was requested with Mr. Richard A. Barlow, Chief Patrol Agent for the San Diego Sector. However, Mr. Barlow's staff informed the researcher that he was unable to participate in an interview citing potential security classification concerns associated with the nature of the topic and the questions posed by the interviewer (see Appendix A for questions). Mr. Barlow's sector covers 56,831 miles, 60 of which are a shared land border with Mexico (CBP 2016). Additionally,, border security operations outlined in this dissertation such as Operation Gatekeeper occurred in this CBP sector in the early 1990s. Though Mr. Barlow was unable to participate in an interview, his staff recommended contacting the CBP intelligence office for further information. A Freedom of Information Act (FOIA) request was submitted to Headquarters for DHS to obtain the necessary information from the CBP intelligence office on October 6, 2016. The CBP FOIA office confirmed receipt of the FOIA request on November 2, 2016. On November 17, 2016, the researcher received written notification from the DHS FOIA Office that the DHS Office of Intelligence and Analysis (I&A) had also been provided the FOIA request. The notification stated that the I&A office received the request from the Headquarters DHS FOIA office on November 10, 2016. On this same date, a FOIA representative contacted the researcher to discuss the nature of the request given concerns over where the data may reside. The representative also stated that if the data was not available (if the Agency could not provide the researcher with the data), utilizing the publicly available annual border security reports

and figures to obtain border security information would be the agency's recommendation. During this conversation, the researcher indicated that the data may also reside with the DHS Geospatial Management Office (GMO). As a result, the FOIA office provided a written follow-up response, which stated "if such records exist, they may be under the purview of the Department of Science and Technology (S&T), as GMO is part of S&T. Therefore, I am transferring this request to the FOIA Officer for S&T, for processing and direct response to you" (Hagan/DHS 2016). During that same telephone conversation, the DHS FOIA representative informed the researcher that the information requested was likely classified and therefore may not be available however, if available, it would likely take up to six months or longer for DHS to provide a formal response to the FOIA request due to a six-month FOIA backlog at DHS. The FOIA office provided the researcher with a case number and indicated that all future correspondence (including responses) to the request would be communicated via the on-line FOIA tool (FOIAonline.regulations.gov). However, no further status updates or responses to the request were received beyond November 2016, despite researcher attempts to obtain status in February, May and August of 2017. In lieu of the requested information and at the advice of the DHS FOIA office, the researcher utilized the annual border security reports and congressional reports for the analysis of this section. The FOIA office recommended these reports to the researcher given they provide annual summaries of CBP manning, technology, GEOINT capabilities and overall border security initiatives.

Case 2 – Arizona

Illegal border crossing apprehension rates along the Arizona-Mexico border significantly decreased from 1996-2014 (see figure 19). Arizona differs from its neighboring border states in that it experienced its highest apprehension rates in 2000 (725,093 apprehensions), whereas California, New Mexico and Texas experienced their highest rates in the earlier part of the period under examination (1996-1999). According to interview data collected by Schroeder (2012), Arizona's spike just after that period is attributed to the various border operations that occurred in California and Texas in the late 1990s which shifted some illegal border crossers to the Arizona border which is less fortified in terms of detection capabilities and manning.
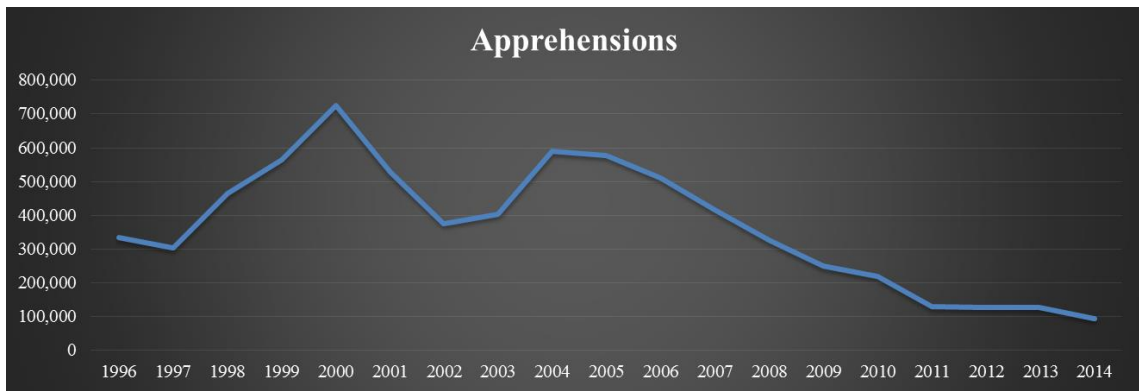
Figure 19. Annual southwest border apprehension rates for Arizona. Dates: 1996-2014. Source: CBP.
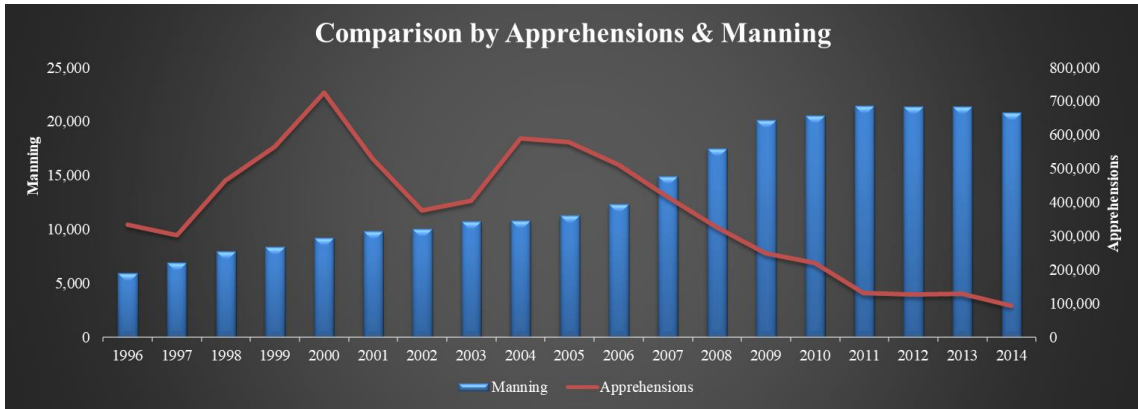
Figure 20. Annual apprehension rates for Arizona vs. manning rates.

Dates: 1996-2014. Source: CBP, IFES.
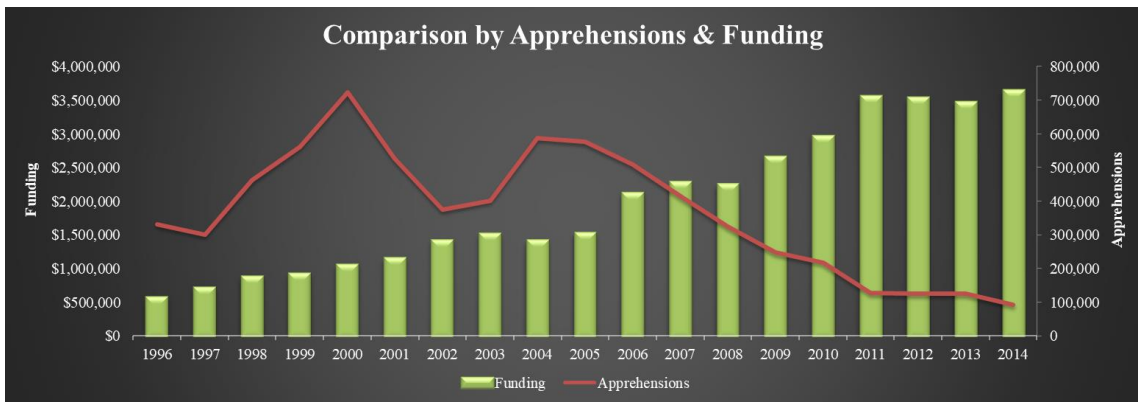
Figure 21. Annual border apprehension rates for Arizona vs. funding rates.

Dates: 1996-2014. Source: CBP, IFES.

DHS data shows an apparent relationship between increased manning and funding and decreased apprehensions (see Figures 20, 21). However, as outlined in the summary of findings, previous border security studies indicate that funding and manning alone do not impact apprehension rates and more specifically, do not have long-term deterrence effects on illegal border crossings (Cornelius and Salehyan (2007) and Espanshade, et al**.**

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1997). Due to a lack of available data, the researcher was unable to determine the extent

to which GEOINT technology played a role in the decrease in apprehensions. However,

CBP reporting indicates that a variety of assets may be employed at any given time as

reflected in figures 22 and 23, to include UAS (also called Unmanned Aerial Vehicles or

drones), cameras and aerostats (blimps).

GEOINT Platforms	Number	Sensors
American Eurocopter AS-350- helicopter	Unknown	Electro-Optical (EO)/Infared (IR) Camera
Augusta Westland AW-139-helicopter	Unknown	Cameras-Type Unknown (largely a Search & Rescue Assett)
Bell Huey UH-1-helicopter	Unknown	EO/IR
Sikorsky UH-60-helicopter	Unknown	EO/IR
P-3 AEW/LRT Orion Fixed-Wing	Unknown	EO/IR
Various Smaller Fixed-Wing (Pilatus, King Air)	Unknown	Full Motion Video (FMV)
Unmanned Aircraft System (UAS) (Predator)	9 (3 SW)	FMV/Wide Area Motion Imagery, Auto ID Syst, Radar, SIGINT, SAR imagery
Tethered Aerostat Radar System (TARS)	8 (6 SW)	FMV/Radar
Stationary Cameras	7,500 (SW and N)	FMV/IR
Drawbridge (Texas State-owned)	4,362	FMV/thermal cameras
Texas owned fixed wing/helos for border	13	FMV/EO (various)

Figure 22. GEOINT Platforms deployed to southern border.

Source: GAO Report for Congress 2016, BSS Report 2014, CBP Status Report 2016.
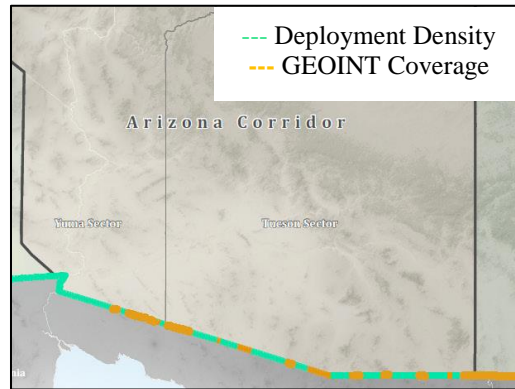
Figure 23. GEOINT coverage along the Arizona-Mexico border.

Source: CBP 2012.

The rugged terrain does play a factor in GEOINT employment in Arizona. The terrain of Arizona is largely desert with some mountains and plateaus. While employment of airborne GEOINT sensors in desert areas is acceptable and will typically result in favorable intelligence collection (if weather conditions are permitting), desert terrain is not as favorable for the placement and operation of fixed/ground-based GEOINT sensors given such sensors would benefit from having natural environment concealment (foliage/brush) to avoid being detected by illegal border crossers (BSOC 2014, GAO UAV Report 2014).

Regarding economic/political changes in Mexico, the data reveals that there is no relationship between these factors and apprehension rates in Arizona during the period under examination. Unemployment rates (ECO2/Mex) are fairly constant throughout the 19-year period. As for GDP, a dip is seen in 2009 with apprehensions being standard. Presidential elections in Mexico do not appear to impact Arizona's apprehension rates. There is a slight uptick in apprehensions in 2000 however the rates quickly decline through the Fox presidency and, apprehension rates during the 2006 and 2012 elections are constant with no significant changes. As for other factors, such as agent and analyst training, experience and IT reliability, due to a lack of data, a determination on the relationship between these factors and apprehension rates could not be made.
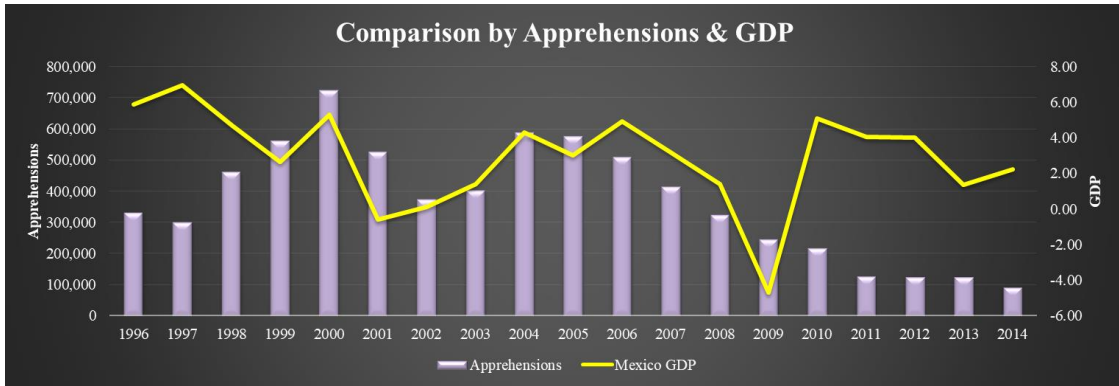
Figure 24. Arizona Apprehensions compared to Mexico's GDP.

Sources: CBP, World Bank.
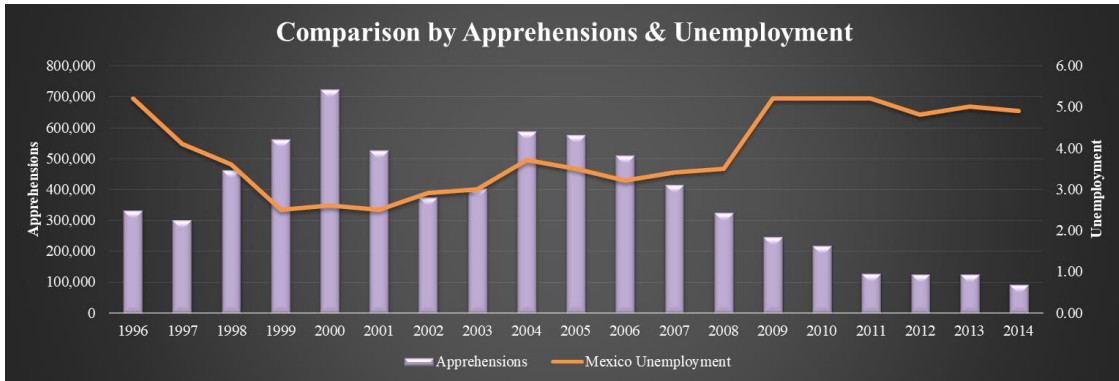
Figure 25. Arizona Apprehensions compared to Mexico's Unemployment Rates.

Sources: CBP, World Bank.

The lowest apprehension rates were seen in 2014 with 93,817 apprehensions. This was also a large budget year in 2014 ($3,364,855) and a steady manning year (20,863 personnel, one of the highest years during the period under examination). The drop-in apprehensions from 2000 until 2002 may be attributed to the fielding of the Integrated Surveillance Intelligence System. From 2005-2011 a significant drop is seen with apprehensions at 577,517 annually in 2005 to 129,118 in 2011. This timeframe also

happens to be when the Integrated Surveillance Intelligence System's movement under ASI occurs, the stand up of SBI/SBI net and the implementation of the Secure Fence Act which included the fielding of GEOINT (referred to in CBP reporting as the virtual fence) and the physical fence. Additional data is required in order to determine if there is a relationship between these events and a decrease in apprehensions.

In terms of funding, while specific statistics pertaining to the amount of federal funding that Arizona receives annually for border security is not available, the Arizona state budget does account for "homeland security" funding each year of its budget starting in 2008 through 2014 (see figure 26). That said, the budget does not specify how "homeland security" funds are disbursed, meaning it does not provide a breakdown of how much of those funds are specifically attributed to border security and specifically, manning, training or resources for security. Approximately $700 million in federal funding is mentioned in the 2007 budget as having been received for homeland security initiatives. Of note in the state budget, $486,300 is allotted for homeland security in 2008 which is specifically to stand up the new State Homeland Security Office. After this year, funding dips to just $15,419 in 2009 but then rises again in 2010 to $48,867 (see figure 26).

Year	Annual Arizona State Budget for "Homeland Security"
1999-2007	0
2008	$486,300
2009	$15,419
2010	$48,867
2011	$45,655
2012	$59,084
2013	$50,889
2014	$23,464

Figure 26. Arizona State Budget, "Homeland Security" funding in thousands.

Source: Arizona Legislature 2016.

Regarding newspaper reporting on border security and GEOINT initiatives during the period under examination, 290 articles were available for analysis; of the four regional papers, Arizona had the most number of reports on border security which may be attributed to their vocal government officials, such as Senator John McCain and DHS Secretary Janet Napolitano, who lobbied for increased border security initiatives both at home and in Washington, D.C., during the period under examination. Of the 290 articles, 111 were negative, 97 were neutral and 80 were generally positive about the status of US-Mexican border security (see Figure 27). Of note, more negative articles were seen during US presidential election years. For example, 2008 articles highlight the government "bypassing federal laws" in order to install physical and virtual fences along the border, negatively affecting communities and environmental efforts in the area (Holstege 2008). Reporting in 2010 claims "Political rhetoric ignores border realities" (Holstege 2008) and residents are "afraid of the uncontrolled border" (Beard, Wingett, Rough 2010).

The Arizona Republic Articles																					
Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1996	(431)	N	P	N	NE	N	N	NE	N	N	P	P	P	NE	N	0	0	0	0	0	0
1997	(266)	NE	P	P	P	N	P	P	N	0	0	0	0	0	0	0	0	0	0	0	0
1998	(242)	N	P	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	(300)	N	N	P	NE	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	(157)	N	NE	N	NE	P	N	N	N	NE	N	NE	NE	N	NE	NE	0	0	0	0	0
2001	(156)	N	N	NE	NE	P	NE	NE	N	NE	P	NE	NE	P	P	0	0	0	0	0	0
2002	(202)	NE	P	NE	N	P	P	N	N	N	NE	N	0	0	0	0	0	0	0	0	0
2003	(208)	N	NE	NE	N	P	N	NE	P	NE	P	N	N	N	NE	N	P	NE	0	0	0
2004	(159)	N	N	P	N	N	NE	NE	N	N	NE	N	0	0	0	0	0	0	0	0	0
2005	(230)	N	N	N	N	N	NE	N	N	N	NE	N	P	N	N	NE	NE	N	N	P	NE
2006	(379)	NE	NE	P	NE	NE	NE	P	N	NE	P	P	P	NE	P	NE	N	P	P	N	N
2007	(170)	P	P	NE	N	P	N	N	N	NE	NE	N	N	N	P	P	P	P	NE	P	N
2008	(128)	N	P	P	P	P	N	N	N	N	N	N	N	N	N	NE	NE	P	NE	P	N
2009	(74)	P	N	N	P	NE	P	P	NE	P	P	N	N	NE	P	P	NE	N	P	P	P
2010	(133)	P	N	P	N	P	P	NE	NE	N	P	P	P	N	N	P	NE	NE	N	NE	NE
2011	(145)	N	P	NE	P	NE	P	NE	N	P	N	N	N	NE	P	NE	NE	N	P	NE	NE
2012	(20)	N	NE	N	N	N	N	N	NE	NE	NE	NE	NE	0	0	0	0	0	0	0	0
2013	(66)	NE	NE	N	P	N	NE	N	NE	N	NE	P	N	P	P	NE	NE	N	NE	N	
2014	(81)	NE	NE	N	NE	N	NE	NE	N	NE	NE	N	NE	NE	NE	NE	N	N	P	NE	P

Coding: P = Positive
N = Negative
NE = Neutral
0 = No Reporting

2001 = 9/11 Terror Attacks

Figure 27. The *Arizona Republic*. Content Analysis, 1996-2014.

Similar reporting trends to California are seen in the early 1990's with sparse reporting on border security up until the 2000's. That said, a large number of reports are noted in 1996 which is likely attributed to the presidential elections as well as the after-effects of Operation Gatekeeper (San Diego, 1994) and Operation Disruption (San Diego, 1995), which are outlined in the literature review chapter of this dissertation, shifted migrant patterns from California to neighboring Arizona (Schroeder 2012). Like California, an increase in reporting occurs during the years where fielding of increased agents, technology and the building of the border fence occurred, 2005-2014. This mirrors the decrease in apprehension rates seen during this timeframe.

Though an increase in reporting was not noted during presidential election years, an increase in reporting was noted in 2005 and 2014 which coincides with the gubernatorial elections. Common themes seen in the *Arizona Republic* reporting include: ranchers requesting more security/back-up from CBP, opposition and then support for

sending the National Guard to the border, and opposition to the physical fence due to impacts on local Native American tribes and wildlife. In terms of specific verbiage and language used in the *Arizona Republic*, the paper utilized verbiage that provoked a sense of emergency along the border, using words such as "war," "crisis," "out of control". These are precisely the type of words that securitization theory categorizes as "speech acts;" specific words used to securitize or amplify existing securitized issues in order to influence an audience and/or justify a particular response to an event (Balzacq 2011).

Case 3 – New Mexico

An overall decrease in apprehensions was seen in New Mexico during the period under examination. However, given New Mexico's small shared land border with Mexico (see Table 3) and its rugged desert terrain, its annual apprehension rates tend to be lower overall in comparison to Arizona and Texas. California and New Mexico have the smallest portion of shared border with Mexico across the four cases however, though California's shared border with Mexico is smaller than New Mexico's its crossings are located in more densely populated areas (such as the San Diego sector) which make it easier for illegal border crossers to blend into the environment (CBP 2016).

State	Shared US-Mexico Border (in miles)
California	140.4
Arizona	372.5 (19 miles along Colorado River included)
New Mexico	179.5
Texas	1,241

Table 3 *Shared Border in Miles.*

Source: CRS Report for Congress, 2006.

That said, apprehensions steadily decreased starting in 2006 and through the end of the period under examination. As with the other cases, DHS data shows an apparent relationship between increased manning and funding and decreased apprehensions however, Cornelius and Salehyan (2007) and Espanshade, et al. (1997) dispute the claim that additional resources have long-term deterrence impacts on illegal immigration. Regarding GEOINT usage along the New Mexico border, data pertaining to specific assets and numbers of assets utilized for every year of the period under examination was not available however figure 28 shows GEOINT coverage along the New Mexico-Mexico border. Due to a lack of available data, a relationship between GEOINT technology along the New Mexico border and apprehension rates could not be determined.
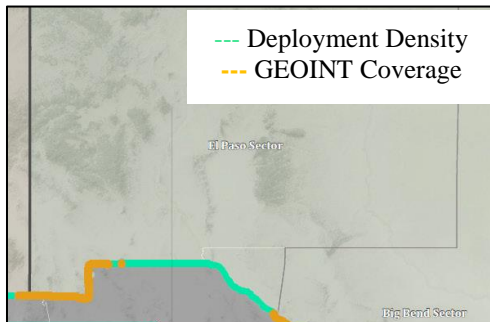
Figure 28. GEOINT coverage along the New Mexico-Mexico border.
Source: CBP 2012.
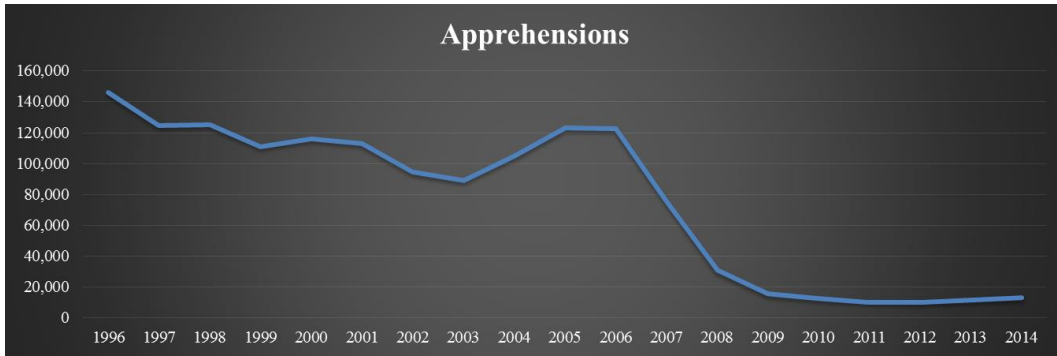
Figure 29. Annual apprehension rates for New Mexico.

Dates:1996-2014. Source: CBP.
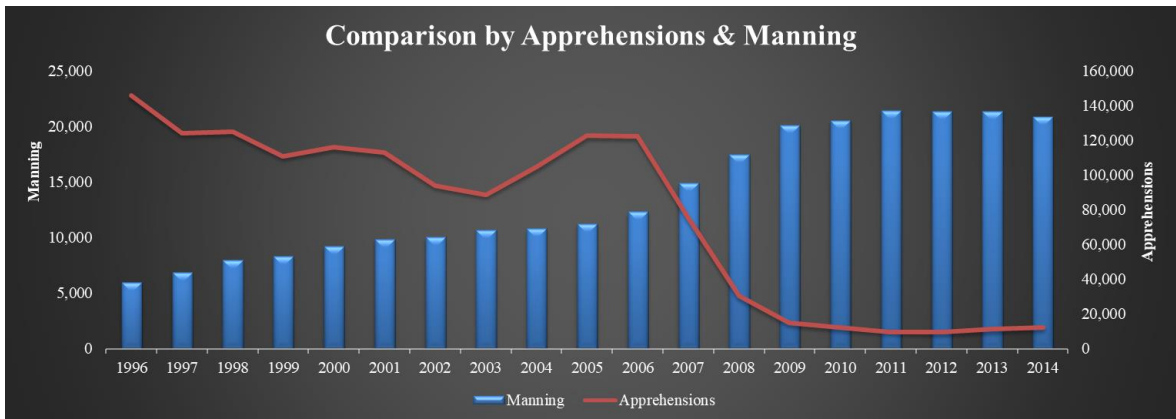
Figure 30. Annual apprehension, manning rates for New Mexico.

Dates: 1996-2014. Sources: CBP, IFES.
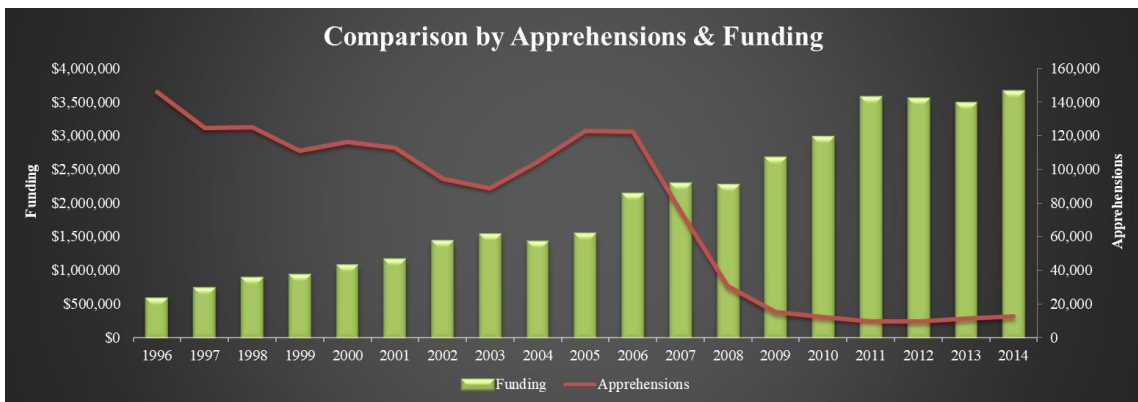
Figure 31. Annual apprehension, funding rates for New Mexico.

Dates: 1996-2014. Sources: CBP, IFES.

There is no relationship between economic/political changes in Mexico and apprehension rates. Unemployment rates (ECO2/Mex) are fairly constant throughout the 19-year period. As for GDP (ECO/Mex), a dip is seen in 2009 and, apprehension rates are extremely low for 2009, leading to the assumption that a poor Mexican economy has not caused Mexican citizens to attempt to flee to the US (or New Mexico in particular) during that timeframe and therefore there is no relationship to apprehension rates. Of note, though not part of the original study design, the role of Mexican maquiladoras (factories) along the US-Mexico border was considered in the analysis, the literature on maquiladora impacts on illegal immigration varies and therefore, a relationship between maquiladora growth and immigration or apprehension rates could be determined. According to Davila and Saenz (1990), the effect of maquiladora employment on illegal immigration from Mexico to the US is widely debated, citing two main views: "The first view argues that employment creation along the Mexican border reduces immigration to the US since Mexicans are more likely to find work in the area, thus reducing the excess supply of border workers. The second view suggests that increasing levels of employment in the maquiladoras lead to heavy internal migration from the interior of Mexico to the border region, some of which will spill into the US as some migrants are unable to find full time employment. In their study, Davila and Saenz (1990) find that there is a decrease in illegal immigration to the US when maquiladora growth is increased. Jones (2001) also finds that maquiladoras increase labor opportunities in and around the areas in which they are located along the border, thus decreasing immigration

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to the US, however, he adds that other factors also contribute to decreased immigration such as the militarization of the US-Mexico border. In comparison, Atkinson and Ibarra (2009) find that maquiladoras are largely a stopping point for those in route to the US. Likewise, Rivera-Batiz (2001) claims that maquiladoras have no major impact on immigration to the US given the dependence on the flow or influx of workers to maquiladoras. Rivera-Batiz (2001) explains that if you have a large influx of individuals seeking jobs at the maquiladoras and not enough jobs for them all, these individuals will then attempt to cross into the US illegally to seek employment (Rivera-Batiz 2001).

In terms of the political factor, apprehensions were slightly up in 2000 which is the year Vicente Fox was elected President of Mexico (a major change in the ruling party) however, there were no major changes in apprehensions for New Mexico during the 2006 election year and, the 2012 election year saw decreases in apprehension rates. As with the California and Arizona cases, specific data on New Mexico's CBP agent/analyst training, experience and IT reliability was not publicly available.
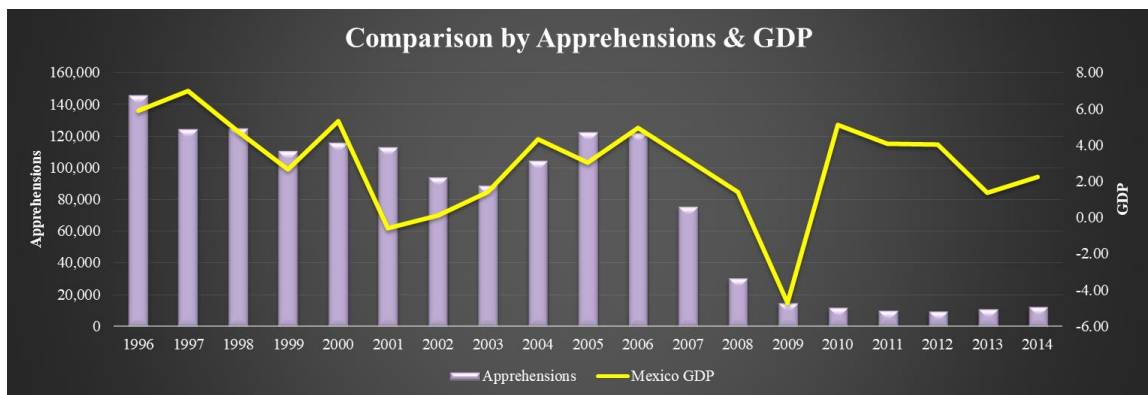
Figure 32. Annual border apprehension rates for New Mexico vs. Mexico's GDP. Dates: 1996-2014. Sources: CBP, World Bank.
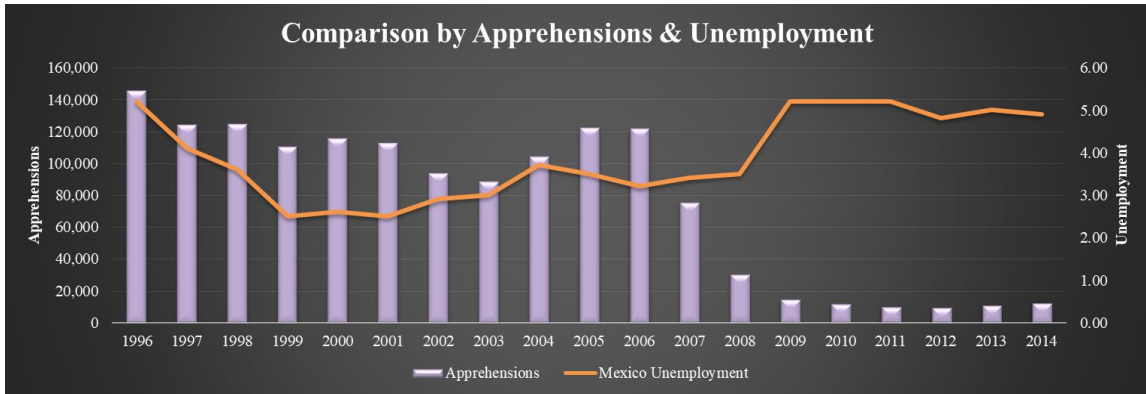
Figure 33. Annual apprehension rates for New Mexico vs. Mexico unemployment.

Dates:1996-2014. Sources: CBP, World Bank.

Of note, New Mexico border operations fall under the "El Paso" CBP sector which includes apprehension data for seven New Mexico cities/border patrol stations (Alamogordo, Albuquerque, Deming, Las Cruces, Lordsburg, Santa Teresa and Truth or Consequences) as well as four Texas cities (El Paso, Fabens, Ft. Hancock, and Ysleta). New Mexico does not have its own-dedicated sector and, CBP only provides New Mexico-specific apprehension data for 2011-2014.

In comparison, according to the data below (Table 4) approximately 67% of El Paso Sector apprehensions are specific to the New Mexico border:

Year	El Paso CBP Sector Apprehensions	New Mexico-Specific Apprehensions
2011	10,345	6,910
2012	9,678	5,661
2013	11,154	7,983
2014	12,339	8,675

Table 4 *New Mexico Specific Apprehensions.*

Though 67% of the apprehensions in the El Paso sector from 2011-2014 are specific to the New Mexico border, it is not feasible to attribute or generalize this 67% average across the rest of the period of consideration (1996-2010) given 2011-2014 data provides less than a quarter of the period under examination. For the descriptive statistics analysis, statistics for this entire sector are utilized to represent New Mexico's apprehension rates. While doing so does not provide a perfect representation of apprehensions along the New Mexico border, it is the only data available for analysis.

For New Mexico, the highest apprehension rates were seen in 1998 with 125,035 annual apprehensions and the lowest apprehension rates were seen in 2012 with 9,678 apprehensions (see figure 33). In comparison to the other cases, even New Mexico's highest apprehension rates are comparably low, which is attributed to its small shared border with Mexico and the challenging terrain that it represents for border crossers. As seen with other cases, high apprehension rates are seen in the 1990's, though New Mexico did experience a steady drop in apprehensions from 1996 until 2003. According to Schroeder (2012), this is likely a result of a border crossers crossing in Arizona during this time, instead of New Mexico, Texas or California. Apprehensions are steady (120,000 annually) from 2005-2006, followed by a significant and continuous drop in apprehensions from 2006-2009 and then an additional leveling off between 2009 and 2014.

Regarding New Mexico newspaper reporting, *The Albuquerque Journal* provided 56 relevant articles on border security. Of those articles, 26 were neutral, 18 were negative about the status of US-Mexican border security and 12 were positive (see figure 34).

| The Albuquerque Journal | | | | | | | | | | | | | | | | | | | | | |
| Articles | | | | | | | | | | | | | | | | | | | | | |
Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1996	(7)	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	(2)	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	(1)	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	(3)	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	(5)	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	(17)	P	N	P	N	NE	NE	N	P	NE	NE	0	0	0	0	0	0	0	0	0	0
2006	(24)	NE	NE	N	N	P	0	N	NE	NE	NE	NE	NE	N	N	0	0	0	0	0	0
2007	(8)	P	N	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	(15)	P	N	P	P	P	NE	P	NE	NE	N	0	0	0	0	0	0	0	0	0	0
2009	(3)	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	(2)	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	(6)	P	N	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	(2)	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	(5)	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	(2)	N		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Coding:
P = Positive
N = Negative
NE = Neutral
0 = No Reporting

2001 = 9/11 Terror Attacks

Figure 34. *The Albuquerque Journal* Content Analysis, 1996-2014.

Little to no reporting on border security/border fence was seen in the archival pull from 1996 until 2004 and again from 2009 to 2014. This shortage of articles is a result of key word search limitations. To assure consistency and repeatability in the content analysis and to ensure that articles pertaining to GEOINT (often referred to as the "virtual fence") were included in the analysis, the following key words: border security, border fence, were utilized in the key word search for all newspapers. Some papers, such as *The Albuquerque Journal* and the *El Paso Times*, have fewer "hits" with these terms as opposed to using the term "border patrol," for example. Utilizing "border patrol" as the key word search would have provided more articles, but it would have narrowed the scope of the articles to mainly border patrol initiatives, potentially excluding articles pertaining to DHS GEOINT, or other pertinent topics. For this reason, the small amount of relevant articles provided by the *Albuquerque Journal* archival database should not be considered reflective of the paper's willingness or unwillingness to report on border security topics. That said, it is important to note that New Mexico possesses the smallest

amount of shared land border with Mexico therefore, reporting in neighboring states on high immigrant traffic, plus-ups in agent manning and technology would not be seen to the same extent as they would in other states.

Like its neighbors, New Mexico's reporting on border security does increase in 2005 and 2006 which coincides with the Secure Fence Act and the fielding of new technology (including GEOINT technology) along the border. Common themes seen in New Mexico reporting include: immigration politics and opposition to the physical fence. In terms of unique or specific wording when referencing border security, the *Albuquerque Journal* used the term "state of emergency" in three different articles during 2005 reporting (out of 10 articles available for analysis in that year).

Case 4 – Texas

The Texas case shows an overall decrease in apprehensions from 1996-2010, (figure 35) with a surprising increase in apprehensions occurring in 2013 (232,396) and 2014 (328,793). As with all cases, DHS data shows an apparent relationship between increased manning and funding and decreased apprehensions from 1996-2010; however, Cornelius and Salehyan (2007) and Espanshade, et al**.** (1997) stress that additional manning and resources have only short-term deterrence effects and therefore only have minimal effects on apprehension rates.
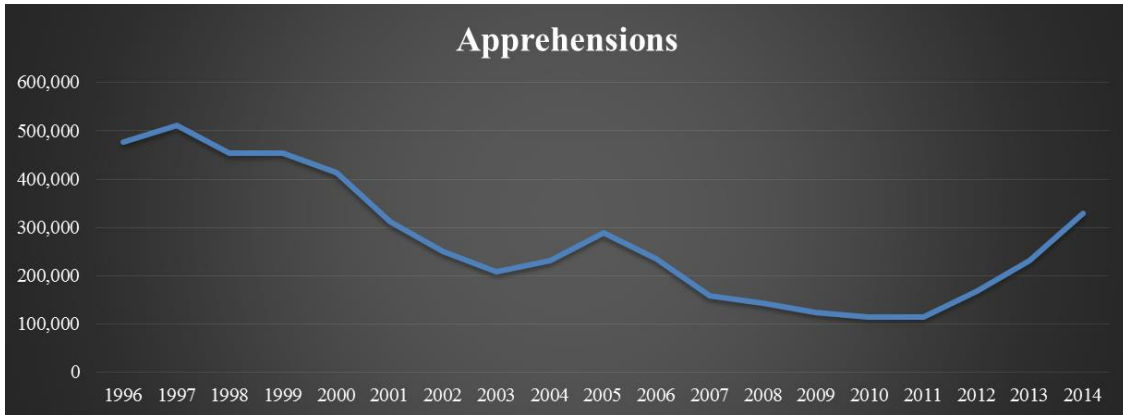
Figure 35. Annual southwest border apprehension rates for Texas.
Dates: 1996-2014. Source: CBP.

The increase in apprehensions in 2013-2014, despite additional funding, manning and GEOINT capabilities (over 4,300 deployed along the Texas border alone) is, according to Miranda (2010) and interview data, attributed to immigration and deportation policy changes in the US. President Obama's 2012 policy change where he announced via the Deferred Action on Childhood Arrivals (DACA) Program that the US would stop deporting young illegal immigrants as long as they met certain criteria such as having arrived in the US as young children and possessing a high school degree from the US is specifically cited as a cause for the increase in apprehensions in Texas (as well as California and New Mexico) during this timeframe (Miranda 2010). Additional deportation policy changes in 2014 also impacted apprehension rates, when President Obama announced the deferment of four million illegal immigrants with a concurrent plan to focus the CBP on illegal immigrant felons and gang members (Nakamura, Costa, Fahrenthold 2014).

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The Texas case is unique from all other border states given Texas operates its own Border Security Operations Center (BSOC), which its neighboring border states do not possess. Having the largest shared land border with Mexico, Texas takes responsibility for protecting the border by running the BSOC which is staffed with intelligence analysts, operators (law enforcement officials) and military personnel. The BSOC brings elements of local law enforcement, DHS (including ICE, CBP), military personnel and other agencies together in an effort to develop coordinated reconnaissance operations for the Texas-Mexico border (Roberson 2016). Aside from relying on DHS-owned GEOINT capabilities, Texas leverages the following assets which possess GEOINT capabilities (full motion video (FMV), Electro Optical (EO)/Infrared (IR) sensors) to protect the border: ~4,000 motion activated GEOINT cameras and 14 fixed/rotary wing aircraft with GEOINT sensors (Robertson 2017). Mr. J.D. Robertson, Commander of the Texas Rangers Special Operations Group was interviewed for this dissertation and notes that the department has been more proactive starting in June of 2014 in layering their GEOINT collection, using a mix of aircraft with GEOINT sensors, aerostats, cameras and even non-GEOINT sensors, such as seismic sensors, to increase detection capabilities (figure 36).
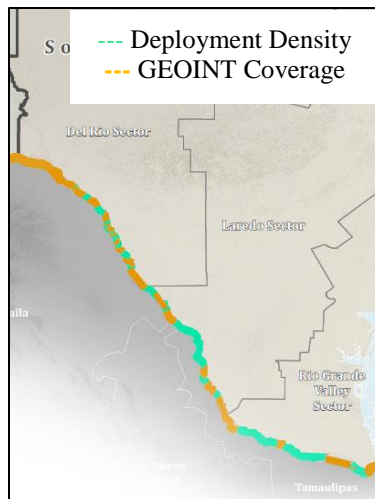
Figure 36. GEOINT coverage along the Texas-Mexico border.

Source: CBP 2012.

Of note, these capabilities are not solely for detecting illegal border crossers but also for detecting other illegal activities such as drug trafficking. Despite using a mix of intelligence capabilities such as seismic sensors and human intelligence, Mr. Robertson indicated that GEOINT is by far the most important method for detection (citing 40-50% of GEOINT detections along the Texas-Mexico border result in an interdiction/apprehension), but that layering detection capabilities is key (Robertson 2017). Though Texas has some state-owned assets, it also leverages DHS/CBP GEOINT assets previously outlined in figure 8. Based on interview data, increased GEOINT along the Texas-Mexico border has increased DPS's ability to detect illegal border crossers. That said, additional data (GEOINT detection versus apprehension data) across several years of the period of study is required to determine a relationship between GEOINT technology and detection/apprehension rates.
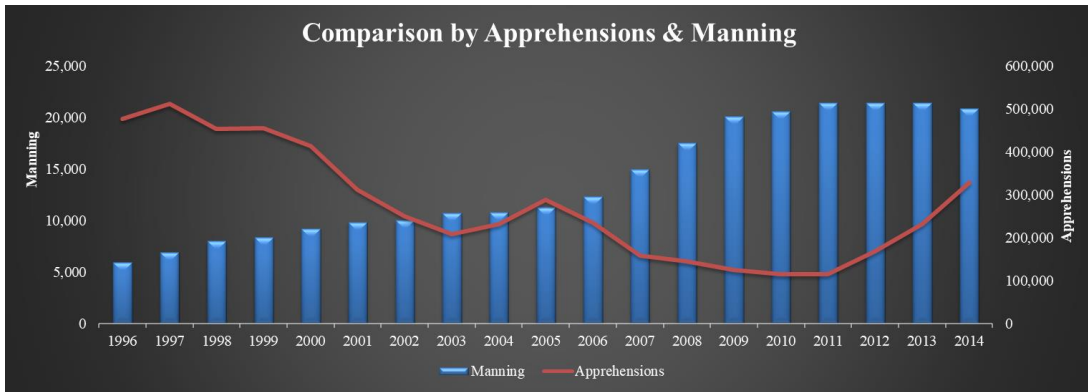
Figure 37. Texas Apprehensions vs. manning.

Source: CBP, IFES.
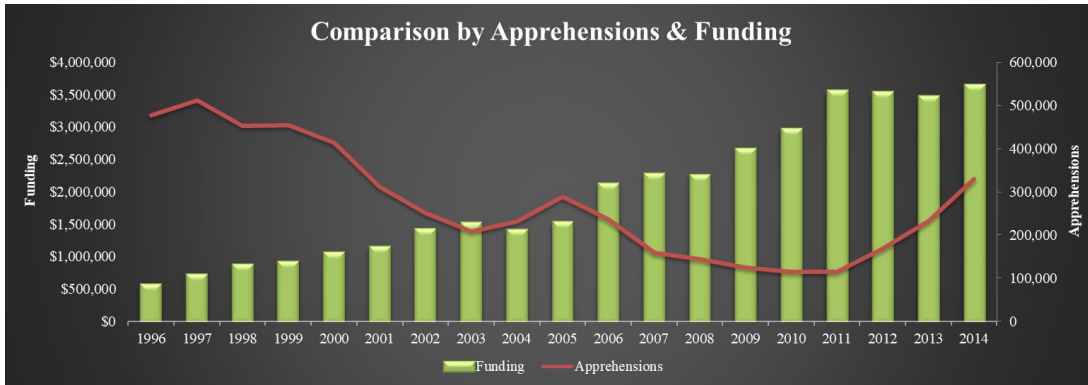
Figure 38. Texas Apprehensions compared to Funding.

Source: CBP, IFES.

The data shows that there is no relationship between economic and political changes in Mexico and apprehension rates. Of note, in 1999 and 2001 there is a dip in Mexican GDP and an increase in apprehensions in Texas (see Figure 39) however, these two years alone do not constitute a relationship. One reason that economic and political changes in Mexico may not have an effect on apprehension rates during the latter part of the period of study is that only approximately 20% of illegal border crossers coming

across the US-Mexican border during the last four years of the period of study were from

Mexico, the rest were from El Salvador, Guatemala and Honduras (Robertson 2017).
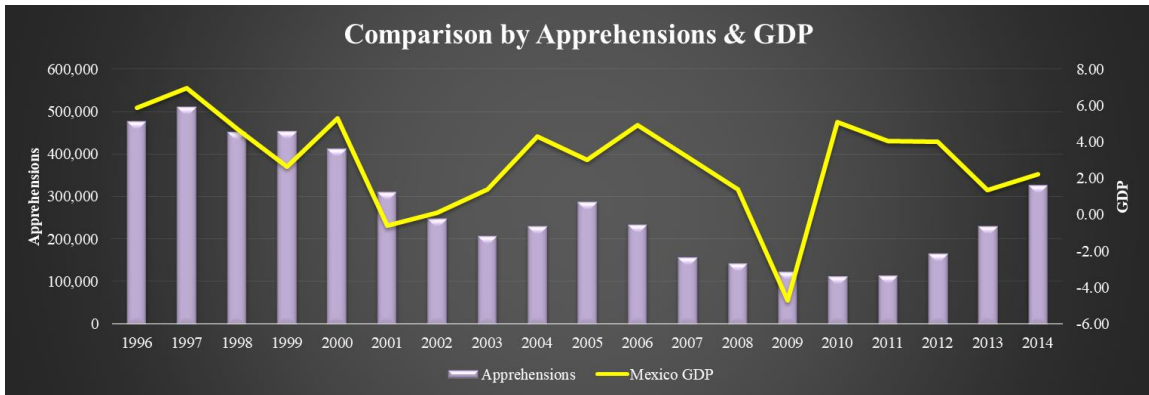
Figure 39. Annual border apprehension rates for Texas vs. Mexico's GDP.

Dates:1996-2014. Source: CBP, World Bank.
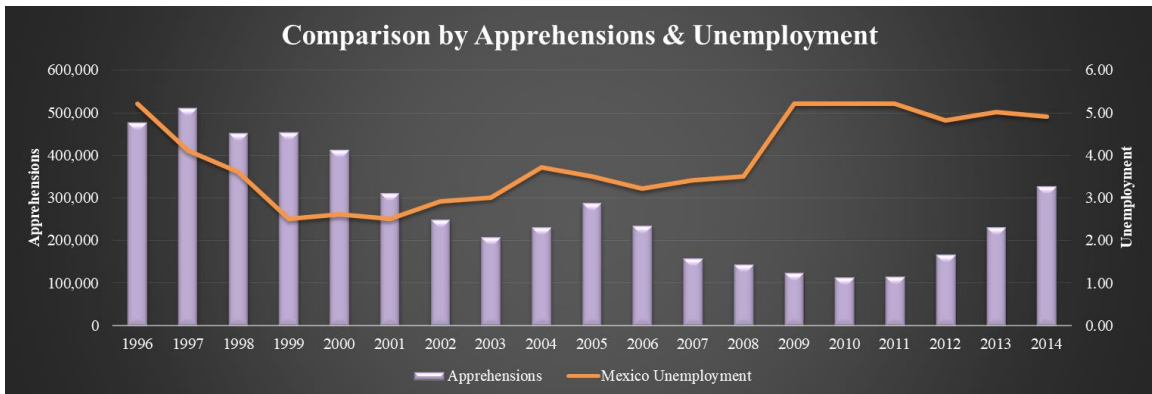
Figure 40. Annual border apprehension rates for Texas vs. Mexico unemployment.

Dates:1996-2014. Source: CBP, World Bank.

Regarding agent and analyst training and experience, statistics for these factors

were not available from CBP/DHS though interview data revealed that those working for

the Texas Border Security Operations Center and the Texas Rangers Special Operations

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Group which are responsible for planning and executing border operations along the Texas-Mexican border in conjunction with CBP, are hired for specific positions and with specific skill sets/experience (some do come with prior federal or military experience). These individuals also receive training upon hire (Robertson 2017). Mr. J.D. Robertson, noted that their intelligence analysts are able to obtain continuing education via intelligence courses offered at Texas State University. Additionally, the organization is typically able to maintain experience within the organization, as high turnover is not a challenge for the Center (Robertson 2017).

Regarding IT reliability, though specific statistics were not available from CBP regarding their IT reliability for agents, the Texas Rangers Special Operations Group Commander indicated that IT reliability for their systems, both intelligence systems and operations systems, were extremely high with systems being operational 24 hours per day to support their mission (Robertson 2017). Mr. Robertson added that IT reliability must be at 100% in order for their analysts and operators to perform their jobs.

In terms of overall apprehensions for Texas, the highest apprehensions were seen in 1997 with 511,658 which was also a low CBP budget year ($717,389) and a low manning year (6,895 personnel). The lowest apprehensions were seen in 2010 with 115,035. The high rates seen in the 1990's is similar to those seen in neighboring southwest border states. From 2005 through 2011 a significant drop is seen which coincides with increased manning and border operations during that timeframe (BSOC 2014). Starting in 2012 through 2014, an increase in apprehension rates occurred which, according to interview data and Miranda (2012), is attributed to the US policy change pertaining to young undocumented immigrants. Of note, the data does not explain the

lack of similar increases in apprehension rates in California, Arizona and New Mexico during this same timeframe.

Texas newspaper reporting is captured by an analysis of the *El Paso Times* reporting during the period under examination. A total of 144 relevant articles were provided via the archival database with 67 coded as neutral, 58 coded as negative and 19 coded positive.

The El Paso Times																							
	Articles																						
Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
1996	(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1997	(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1998	(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Coding:	P = Positive
1999	(0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		N= Negative
2000	(3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		NE= Neutral
2001	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0 = No Reporting
2002	(4)	N	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2003	(3)	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2004	(1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2001 = 9/11 Terror Attacks	
2005	(5)	NE	N	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2006	(46)	N	N	P	N	NE	N	N	N	N	NE	P	P	NE	N	NE	NE	NE	NE	N	N		
2007	(86)	P	NE	P	N	P	NE	NE	P	N	N	N	N	N	N	NE	N	N	NE	N			
2008	(209)	N	NE	NE	N	NE	N	NE	N	N	N	N	N	N	N	NE	N	NE	N	NE			
2009	(19)	NE	NE	N	NE	NE	N	NE	N	N	NE	P	NE	NE	NE	NE	0	0	0	0			
2010	(23)	N	NE	P	NE	P	P	P	NE	P	N	P	NE	N	N	N	NE	N	N	NE	N		
2011	(29)	P	N	N	NE	NE	N	NE	N	NE	NE	N	NE	NE	NE	NE	NE	NE	N				
2012	(11)	NE	NE	NE	NE	NE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2013	(16)	NE	NE	NE	N	NE	NE	N	N	NE	NE	NE	0	0	0	0	0	0	0	0	0		
2014	(11)	N	NE	P	P	NE	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Figure 41. The *El Paso Times* Content Analysis, 1996-2014.

Like New Mexico, there is a shortage of reporting noted from 1996-2005, which is attributable to the same aforementioned key word search limitations. Like California, Arizona and New Mexico, there are many reports from 2006 to 2008 which coincides with building of the virtual and physical fence as well as the 2008 presidential election. Most reporting in 2006 discusses opposition to the border fence. The increase in reporting in 2008, is of importance for Texas given that during election years it is common for candidates or congressional delegations to visit the Texas-Mexico border to gain a better understanding of the situation on the ground and to hold immigration

discussions with local leaders. The Texas-Mexico border is typically favored for politicians to visit given it has the largest amount of shared land border with Mexico and the most amount of surveillance equipment and manning (Aguilar 2010).

A significant amount of reporting was also noted in 2010 and 2011 which coincides with increased operations along the border by CBP and the Texas Rangers and, in 2011 there is specific mention of and increased discussion about GEOINT along the border. Of note, reporting goes down in 2012 which is interesting given 2012 is an election year and, the year that Operation Drawbridge (use of GEOINT/cameras along the border) went into effect. The lack of reporting on GEOINT (specifically Operation Drawbridge) in 2012 may be due to the program's infancy (little to report in terms of outcomes) in the first year of operation given there has been recent (2015) newspaper reporting on the operation.

A slight increase in reporting is seen in 2013 and is largely focused on immigration reform. Of note, the following year, a significant increase in unaccompanied child border crossers was noted due to 2013-2014 comments by Vice President Biden and other politicians regarding a path to citizenship (Greenblatt 2014). CBP and Texas DPS officials have stated that any public comment in the media that provides a perceived ease of crossing the border or a hope for staying in the US once entered (via asylum or other means) provides enough hope for individuals to cross the border illegally, resulting in increased apprehensions (Nimmich 2016, Morley 2007). Common themes in Texas reporting are as follows: contradictory articles on whether spill-over violence is occurring, contradictory articles on whether the border is "secure" (local law enforcement say it's not, but President Obama and Secretary Janet Napolitano

say in a 2011 article that the border is secure and "better than it's ever been") (Markon 2015, Condon 2011, GAO Report on Spill Over Violence 2013).

There is also considerable opposition to the fence with claims that it will not stop illegal border crossers. Articles outlining President Obama's take on border security largely focus on immigration reform. Most articles speak positively about military members (National Guard) being stationed along the border. Of note, Texas is home to over 30 military installations and is largely a conservative/republican state which tends to favor and support the military. In terms of specific language noted in this paper, there were not unique or notable language patterns observed during the analysis.

Overall Findings

Regarding the first research question, "To what extent does securitization theory explain the role of GEOINT, as a securitization instrument and tool, in reproducing the narrative associated with the threat of illegal immigration along the US-Mexico border?", this study finds that the first central argument, "Securitization theory illustrates that GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed," is supported. According to Balzacq's (2008) definition of a securitization instrument (something fielded in response to an issue that has been securitized and thus portrayed as a security threat), and his definition of a securitization tool (and instrument which, by its mere existence and functioning, further securitizes the issue it is meant to protect against), GEOINT is both a securitization instrument and securitization tool. An increase in GEOINT sensors was implemented in

response to an amplification of existing security frames pertaining to illegal immigration

along the southern border in the post-9/11 security environment. The presence of

GEOINT sensors along the border provides the perception that the border is a dangerous

place and thus requires military-type reconnaissance or as Salamon (2002) explains, tools

"embody a specific image of the threat and, to a large extent, what ought to be done about

it." This adds to the existing narrative seen in the content analysis performed in this study

where phrases such as "border war" and "border crisis" are seen. Further, information

about the type and amount of GEOINT data collected is not publicly available.

Researcher efforts to obtain the data through FOIA and interview processes were

unsuccessful with government officials stating that the data sought by the researcher were

likely classified. The lack of available data, especially for the reason cited

(classification), further contributes to the existing narrative of illegal immigration as a

threat to national security given information about the tool fielded to counter said threat

(GEOINT) is so highly sensitive, according to the officials, that it can only be made

available to those with security clearances. According to Balzacq (2008) securitization

tools, "define who is involved in the operation of public programmes, what their roles are

and how they relate to each other" (Salamon 2002). To better illustrate this point, the

below graphic highlights the lack of publicly available border security and GEOINT-

related data for this research project:

	Descriptive Statistics	Content Analysis (Newspapers)	Interview Data	Content Analysis (GAO – Not State Specific)
CA	1- No Data, 8- No Data 2- N/A, 9- No Data 3- No Data, 10- No Data 4- Data, 11- No Data 5- No Data, 12- Data 6- No Data, 13- Data 7- No Data	1- No Data, 8- No Data 2- Data, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- No Data 6- Data, 13- No Data 7- No Data	1- No Data, 8- No Data 2- No Data, 9- No Data 3- No Data, 10- No Data 4- No Data, 11- No Data 5- No Data, 12- No Data 6- No Data, 13- No Data 7- No Data	1- Data, 8- Data 2- Data, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- No Data 6- Data, 13- No Data 7- No Data
AZ	1- No Data, 8- No Data 2- N/A, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- Data 6- No Data, 13- Data 7- No Data	1- No Data, 8- No Data 2- Data, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- No Data 6- Data, 13- No Data 7- No Data	1- No Data, 8- No Data 2- No Data, 9- No Data 3- No Data, 10- No Data 4- No Data, 11- No Data 5- No Data, 12- No Data 6- No Data, 13- No Data 7- No Data	
NM	1- No Data, 8- No Data 2- N/A, 9- No Data 3- No Data, 10- No Data 4- Data, 11- No Data 5- No Data, 12- Data 6- No Data, 13- Data 7- No Data	1- No Data, 8- No Data 2- Data, 9- No Data 3- No Data, 10- No Data 4- No Data, 11- Data 5- No Data, 12- No Data 6- No Data, 13- No Data 7- No Data	1- No Data, 8- No Data 2- No Data, 9- No Data 3- No Data, 10- No Data 4- No Data, 11- No Data 5- No Data, 12- No Data 6- No Data, 13- No Data 7- No Data	
TX	1- Data, 8- No Data 2- N/A, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- Data 6- No Data, 13- Data 7- No Data	1- No Data, 8- No Data 2- Data, 9- No Data 3- No Data, 10- No Data 4- Data, 11- Data 5- No Data, 12- No Data 6- No Data, 13- No Data 7- No Data	1- Data, 8- Data 2- Data, 9- Data 3- No Data, 10- Data 4- No Data, 11- Data 5- Data, 12- No Data 6- Data, 13- Data 7- Data	

Factors
1- GEOINT (#/Use/Type)
2- Terrain
3- Analyst Manning
4- Agent Manning
5- Analyst Training
6- Agent Training
7- Analyst Experience
8- Agent Experience
9- IT Reliability/Analysts
10- IT Reliability/Agents

Data = Data available to support analysis of factor
No Data = Data not available to support analysis of factor
N/A = Not Applicable

Table 5 *Data Availability.*

GEOINT's role as both an instrument and a tool capable of further securitizing illegal immigration reaffirms the notion of a threat along the border. Content analysis of media and government reporting support this claim and indicate both public and government perceptions of the border and GEOINT's role in securing it reaffirm the narrative of illegal immigration as a threat to national security. Content analysis shows that government perceptions (as outlined in Government Accountability Office (GAO) reports) focus on accomplishments of border security initiatives to include the use of GEOINT assets, while also highlighting the needs for additional manning and resources. According to securitization theory, focusing on accomplishments of GEOINT technology

in detecting illegal border crossers further securitizes illegal immigration because it reaffirms that the threat still exists so in turn, the use of this securitization tool (GEOINT) is still required. Public perception, as highlighted in newspaper reporting, also highlights the accomplishments of border security (a lack of publicly available data on GEOINT detections resulting in apprehensions may contribute to the lack of GEOINT-specific reporting). Public perception along the border is mixed with US ranchers calling for more security due to illegal immigrants damaging their crops during attempts to cross illegally, while environmentalists and human rights activists highlight negative impacts on the environment and families, respectively in regard to increased security measures such as a physical wall.

Regarding the second research question, "To what extent has GEOINT, as a securitization instrument and tool, affected US-Mexican border security generally and, specifically, the ability of the United States to both detect and apprehend individuals who cross the border illegally?," this dissertation finds that the second central argument, "An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has in general, positively affected US-Mexican border security, by providing law enforcement and border patrol agents an increased understanding of the border, including pattern-of-life information pertaining to where illegal border crossers tend to cross," is supported. Though by-year GEOINT sensor data was not publicly available, annual border security reporting estimates over 12,000 GEOINT assets in operation along the southern border (4, 362 of those being Texas state-owned/operated sensors) as of 2014. The use of GEOINT along the southern border has increased visibility along the border, providing an increased understanding of the border

for law enforcement and border patrol agents. The data indicates that GEOINT does more

than just detect illegal border crossers; a large part of the GEOINT mission is detecting

drug and smuggling routes, providing pattern of life information for strategic and

operational planners and, serving as a force multiplier in areas where agents are not

present (Robertson 2017). Despite a lack of available detection data across all years

considered in this study, detection data for recent years (2011-2014) revealed thousands

of detections and hundreds of apprehensions specifically attributed to GEOINT

technology (DHS 2016):

- 2013-2014: 7, 616 illegal border crossers detected with GEOINT sensors carried

  on Unmanned Aircraft Systems (UAS).

- 2013: 629 apprehensions attributed to GEOINT sensors.

- 2012: 143 apprehensions attributed to GEOINT sensors.

- 2011: 467 apprehensions attributed to GEOINT sensors.

Regarding the third central argument, "An increase in GEOINT capabilities along

the US-Mexican border since the 9/11 attacks has positively affected US-Mexican border

security by specifically increasing America's capacity to *detect* individuals crossing the

border illegally," this central argument is not supported based on a lack of available data

on annual GEOINT detections. Annual GEOINT detection data was not publicly

available for every year of the period of study, despite researcher efforts to obtain it via

the Freedom of Information Act (FOIA) processes as well as interviews with CBP

experts. Likewise, the fourth central argument, "An increase in GEOINT capabilities

along the US-Mexican border since 9/11 has positively affected US-Mexican border

security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally," cannot be supported. Though apprehension data (annual apprehension rates) is available for every year during the period of examination, information pertaining to apprehensions specifically made as a result of a GEOINT detection was not available. Prior to 2015, CBP staff were not required in their reporting procedures to annotate whether the apprehension they were involved with was a result of a GEOINT detection, therefore, this data was not available for the period of examination.

Regarding the third research question, "Is the United States able to fully utilize the benefits that GEOINT, as a securitization instrument and tool, can offer along the border?," this dissertation finds that the fifth central argument, "The United States has been unable to fully utilize the benefits of GEOINT capabilities (such as being able to analyze and take action on all GEOINT collected) along the border due to a shortfall in analyst and agent manpower," cannot be supported due to a lack of publicly available data pertaining to analyst and agent manpower. DHS/CBP publish annual manning statistics however, the data does not specify between agent, analysts or administrative staff. This data was also not available via the FOIA process or interviews despite researcher efforts to obtain it.

Additional key findings of this dissertation are as follows:

- An overall decrease in apprehensions is seen across all cases during the period under examination (1996-2014); a sign of strong border security according to the Department of Homeland Security (DHS).

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- The exact cause of the decrease in apprehensions from 1996-2014 cannot be determined due to a lack of data across the period of this study however, the available data and existing literature suggests not one, but multiple factors (to include policy changes, economic push and pull factors and increased border enforcement) impact annual apprehension rates.

- DHS data suggests a positive relationship between increased Agent manning and decreased apprehensions however, based on existing literature, the role of deterrence is minimal meaning increased resources along the border results in short term deterrence only, effecting when and where people cross but not whether they cross overall (Cornelius & Salehyan 2007).

- There is no relationship between the political (occurrence of presidential elections) and economic factors (GDP and unemployment rates) in Mexico and apprehension rates. This does not mean politics and economics do not affect apprehension rates, however, it does mean that more appropriate measures for political or economic changes should be considered in future research, such as country of origin immigration policies and wage labor rates.

- Content analysis across all cases revealed most newspaper reporting as well as GAO reporting on border security was neutral to negative, with most articles focusing on the "border wall", impacts of the border wall on the environment and the cost of the "virtual wall" (GEOINT technology).

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Though annual detection data was not available for every year of the period under examination, the 2015 CBP Annual Border Security Report illustrates that GEOINT sensors carried on the TARS (reconnaissance blimps), which were fielded during the period of consideration, recorded 335 instances of illegal border crossing attempts in fiscal year 2015 (which includes October, November and December of calendar year 2014) and, GEOINT sensors carried on UAS (drones) detected 9,371 instances of illegal activity along the border in that same fiscal year, to include illegal border crossing activity. The 2014 CBP Annual Border Security Report also noted 7,616 detections of illegal activity (including illegal border crossings) in 2013-2014 which were specifically attributed to GEOINT sensors carried on UAS (CBP Border Security Report 2014). The CBP Annual Border Security report for 2013 attributes the apprehension of 629 people involved in illegal activities (including illegal border crossings) to both air (aircraft carrying GEOINT sensors) and marine operations and, the 2012 CBP Border Security Report attributes 143 apprehensions associated with illegal activity to airborne capabilities, which host GEOINT sensors (CBP Border Security Report 2012, 2013). CBP reporting from 2011 further indicates 467 apprehensions of those involved in illegal activities, including illegal border crossings, which were attributed to airborne GEOINT capabilities. Further, for the state of Texas, where a large majority of GEOINT sensors are utilized along the southwest border, GEOINT has increased the ability to interdict and apprehend illegal crossers, with the Texas border security expert interviewee citing 40-50% of GEOINT detections along the Texas-Mexico border result in an interdiction (Robertson 2017).

Currently, over 12,000 GEOINT assets (Full Motion Video Cameras, Unmanned

Aircraft Systems with Electro-Optical or Infrared sensors) are employed along the US-

Mexico border at ports of entry and between. While exact numbers of sensors in

operation are not known due to constant fielding of new sensors, especially along the

Texas-Mexico border, below is a brief summary of the existing capabilities employed

along the border:

GEOINT Platforms	Number	Sensors
American Eurocopter AS-350- helicopter	Unknown	Electro-Optical (EO)/Infared (IR) Camera
Augusta Westland AW-139-helicopter	Unknown	Cameras-Type Unknown (largely a Search & Rescue Assett)
Bell Huey UH-1-helicopter	Unknown	EO/IR
Sikorsky UH-60-helicopter	Unknown	EO/IR
P-3 AEW/LRT Orion Fixed-Wing	Unknown	EO/IR
Various Smaller Fixed-Wing (Pilatus, King Air)	Unknown	Full Motion Video (FMV)
Unmanned Aircraft System (UAS) (Predator)	9 (3 SW)	FMV/Wide Area Motion Imagery, Auto ID Syst, Radar, SIGINT, SAR imagery
Tethered Aerostat Radar System (TARS)	8 (6 SW)	FMV/Radar
Stationary Cameras	7,500 (SW and N)	FMV/IR
Drawbridge (Texas State-owned)	4,362	FMV/thermal cameras
Texas owned fixed wing/helos for border	13	FMV/EO (various)

Table 6 *GEOINT Platforms on US-Mexico border.*

Source: GAO Report for Congress 2016, BSS Report 2014, CBP Status Report 2016.
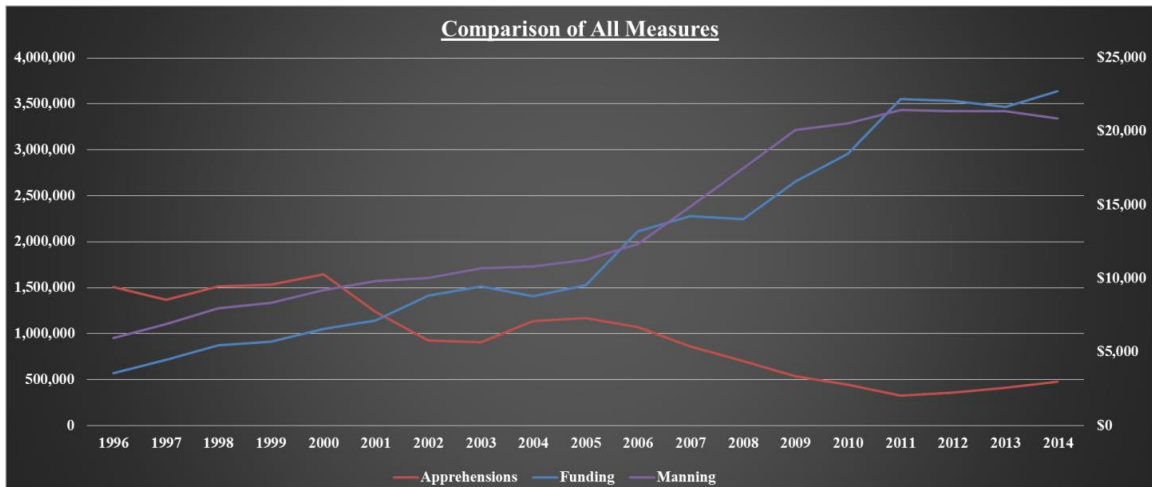
Figure 42. Apprehension, Funding and Manning Rates – Overall.

Source: CBP 2016.
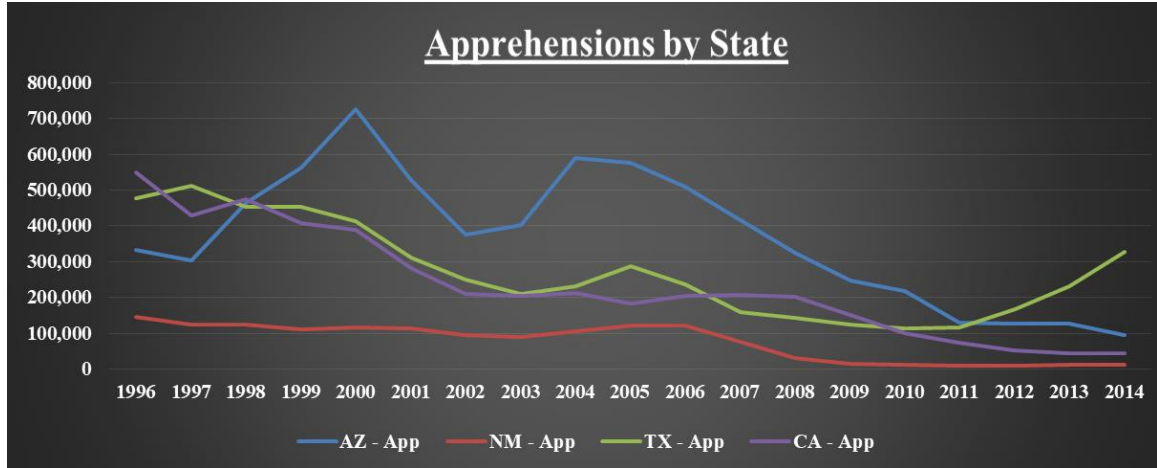
Figure 43. Apprehension Rates – State Comparison.

Source: CBP 2016.

During the period of study, the descriptive data shows that overall, apprehension rates have declined from 1996 to 2014. From 1997 to 2000 an increase in apprehensions (by 274,972) occurred (figure 43). Low GDP in Mexico in 1999 as well as Mexican Presidential elections during this timeframe (2000) occurred however, additional information would be required to determine a relationship.

The content analysis revealed an overall neutral to negative reporting (figure 38) across all cases about border security (including GEOINT). The analysis focused on identifying positive and negative themes within articles that highlight or downplay successes and failures of border security, to include the utilization of GEOINT in border security. Examples of key words and phrases rendering a negative classification include: border crisis, unsecure border, lack of security, loss of operational control, and porous border. Examples of words or themes rendering a positive classification include:

operational control of the border, secure border, and winning the border war. Of note, the number of key word search "hits" per year for "border security, border fence" does not represent the total number of US-Mexico border security articles available for analysis during that year. In many instances, the articles found under the "border security, border fence" search pertained to border security in other areas of the world such as Israel, Lebanon, and Yugoslavia. Articles that did not pertain specifically to US-Mexican border security were not included in this analysis.
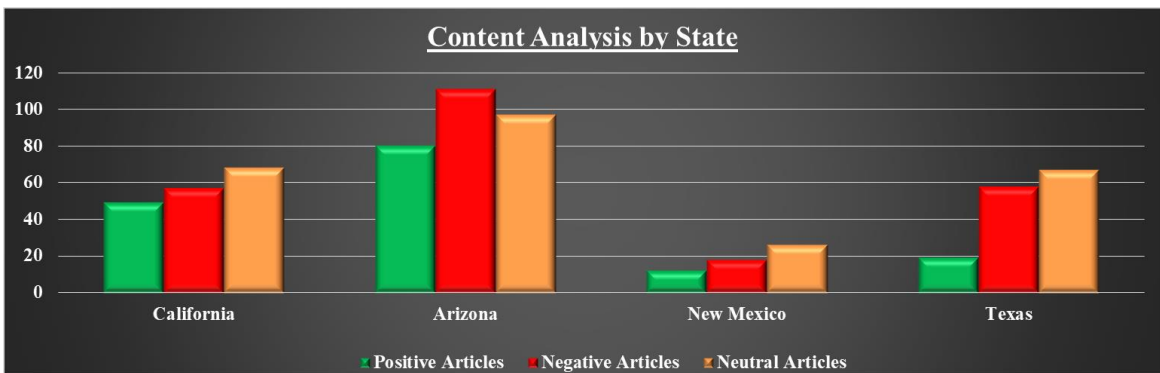
Figure 44. Content Analysis - Comparison by State.

Sources: San Diego Union Tribune, The Arizona Republic, Albuquerque Journal, El Paso Times, Washington Post.

Newspaper	Political Leaning
San Diego Union Tribune	Middle (previously Conservative)
The Arizona Republic	Conservative
Albuquerque Journal	Liberal
El Paso Times	Conservative
The Washington Post	Liberal

Table 7 *Newspaper – Political Leaning.*

Sources: Business Insider (2014/2016), Pew Research Center (2014)

It is also important to note that both liberal and conservative leaning newspapers were utilized in this analysis (see figure 44). Across the five newspapers, three of the five possessed fairly neutral reporting on the status of US-Mexican border security. Papers from California (not a liberal or conservative leaning newspaper), New Mexico (liberal leaning newspaper) and Texas (conservative leaning newspaper) reported largely neutral stories; none of them focused primarily on border security successes or highlighted failures of border security. Papers from Arizona (conservative leaning newspaper) and Washington, D.C. (liberal leaning newspaper) were largely negative, with most negative reporting centered on the physical and virtual (GEOINT) fence along the US-Mexican border, highlighting public opposition to the fences and the government failures in launching the initiatives on time and on budget. There was no relationship seen in the analysis with regard to the political leaning of the newspapers and their reporting in terms of negative, positive or neutral.

Papers from Washington, D.C., and Arizona had the most number of reports on US-Mexican border security topics. Ironically, the paper furthest from the southern border had the most number of reports on border security with 378 relevant articles on the topic during the period under examination. This is an interesting point given many of the articles from the regional papers highlighted Washington's failure to pay attention to the border and failure to provide the border with the resources it needs. The high number of reporting on this topic from the *Washington Post* is likely attributed to the paper being located in the nation's capital, which is also the workplace of those government officials that provide oversight and funding of the various border security initiatives along the southern border. The *Arizona Republic* provided the next highest number of articles with

290 relevant articles. In comparison, *The San Diego Union Tribune* provided 174 articles,

The *El Paso Times* provided 144 articles, and the *Albuquerque Journal* provided the

fewest articles, 57. Lower reporting levels in New Mexico are likely attributed to two

factors: key word search parameters within the paper's database and New Mexico

possessing the smallest portion of US-Mexican border of the 1,989 shared US-Mexican

land border.

Across all five newspapers, certain themes and trends were present. The year of

the 9/11 terrorist attacks (2001), did not mark a significant increase in border security

reporting, according to the articles and content analysis. This may be attributed to the

fact that other priorities such as the kick off to Operation Enduring Freedom in

Afghanistan and the stand-up of DHS in which multiple agencies were transitioned under

the umbrella of DHS was occurring and monopolized reporting in the year and years

immediately following the attacks. Additionally, during the period of consideration of

the study, presidential elections were held in 1996, 2000, 2004, 2008, and 2012. No

significant increase in border security-related reporting is seen in the content analysis

during these years except for in 2008 when Barak Obama and John McCain were vying

for office. The increase is likely attributed to Arizona Senator/Presidential Candidate

John McCain who often, and especially during the presidential race, discussed the

importance of border security and the need to increase efforts along the border (*Arizona

Republic* 2008). Though there were no common spikes in reporting seen during

presidential election years, common themes did surface across all papers during elections.

For example, the need for a physical barrier/fence along the border as well as increased

virtual fences (cameras, surveillance – GEOINT) were noted, as well as presentations of

"four-point plans" that address immigration, border fences, CBP manning and guest worker programs (McCain 2008, Holstege 2007). Additionally, all papers demonstrated a similar/high level of reporting on border security in 2006 which coincides with President Bush's 2006 signing of the Secure Fence Act, implementing a physical fence along the southern border and, the start of the Security Border Initiative (SBI/SBINet) aimed at increasing GEOINT along the border and providing a network capable of facilitating increased communication and information sharing between border security and intelligence agencies (GAO Report on SBI 2006). Of that reporting, papers from New Mexico, Texas, and Washington, D.C. were largely negative about the initiatives, with California and Arizona reporting being mostly positive and neutral.

Regarding the non-regional (national) paper, The *Washington Post,* 378 articles were provided via the paper's archival database. Of all five papers included in this content analysis, the *Washington Post* had the most number of relevant articles per each year of the period under examination. Of the 378, 146 were negative about the status of border security (largely highlighting opposition to the physical and virtual (GEOINT) fence, 139 were neutral and 93 were positive (see figure 45).

The Washington Post																							
Articles																							
Years	(hits)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1996	(6169)	P	N	P	P	N	P	P	N	NE	N	NE	P	P	N	NE	N	NE	N	NE	P
1997	(5087)	P	N	N	N	P	N	P	N	N	N	N	NE	P	P	N	N	N	N	P	N
1998	(7906)*	N	P	P	P	P	N	P	NE	NE	N	P	N	N	P	N	N	P	NE	0	0
1999	(8059)	NE	NE	P	N	NE	N	P	N	NE	NE	NE	P	NE	N	NE	N	NE	N	NE	NE
2000	(7961)	N	N	P	P	N	N	N	N	NE	NE	N	N	N	NE	NE	N	N	NE	NE	N	NE
2001	(10892)	N	N	P	NE	P	N	P	P	NE	NE	P	P	NE	NE	NE	NE	NE	N	N	N
2002	(11661)	P	P	NE	P	N	NE	P	NE	NE	P	NE	P	N	NE	P	N	P	N	N	P
2003	(12299)	N	N	P	P	N	P	N	N	N	NE	NE	NE	P	NE	NE	NE	N	NE	NE
2004	(11786)	N	N	NE	P	N	N	N	NE	N	NE	N	P	NE	P	NE	P	NE	P	NE	NE
2005	(11441)	N	N	P	NE	NE	N	N	N	NE	N	N	NE	NE	NE	P	N	P	NE	N	N
2006	(10959)	N	N	N	N	NE	N	P	N	NE	N	N	P	N	NE	P	NE	NE	N	NE	P
2007	(9681)	N	NE	N	N	NE	N	P	N	P	N	N	N	N	NE	N	N	NE	NE	P	P	P
2008	(8629)	NE	N	N	N	N	N	N	N	N	P	P	N	NE	NE	P	NE	P	N	N	NE	NE
2009	(7281)	N	N	N	P	P	NE	NE	NE	P	NE	NE	P	P	N	NE	N	P	P	P	NE
2010	(6933)	NE	P	N	N	N	P	N	NE	N	P	P	N	NE	N	N	P	NE	P	NE	NE
2011	(7096)	N	N	N	N	NE	P	N	N	N	P	NE	NE	N	NE	NE	NE	NE	NE	NE	NE
2012	(8312)	NE	N	N	NE	NE	NE	NE	N	NE	NE	NE	NE	NE	NE	NE
2013	(30193)	NE	NE	NE	NE	P	P	NE	N	NE	P	P	NE	NE	N	N	P	NE	N	P	P
2014	(19759)	N	NE	P	NE	N	N	N	NE	N	NE	N	NE	NE	N	NE	NE	P	N	P	NE

Coding:
P = Positive
N= Negative
NE= Neutral
0 = No Reporting

2001 = 9/11 Terror Attacks

For 1998 only 1,000 of the 7,906 results were accesible via the database.

Figure 45. The *Washington Post* Content Analysis, 1996-2014.

Of note, this paper reported on the tie between the Mexican economic recession in 1995 and the increase in illegal border crossers; the regional papers did not report on this. In 1998 reporting, Operation Gatekeeper (which occurred in 1994) was mentioned as having continued effects (positive effects) on border security. From 2002 through 2003, reports indicate a call for technology along the border, specifically in response to the 9/11 attacks and the need to secure the border. Additionally, reporting on defense contracts pick-up speed for such technology occurred in the 2003 timeframe. By 2004, reports question the effectiveness of CBP and a specific mention of a lack of training for CBP is called out.

An additional move to highlight the need to secure the border against threats like Al Qaeda is seen in 2005 reporting, which may have been used to justify the fielding of the 2006 SBI Net. A significant amount of reporting is noted in 2006 about the fielding of GEOINT along the border however, this is countered by 2007 reporting that there is a

lack of training and staff to work border security (insinuating there are not enough agents to utilize all the intelligence being collected). Starting in 2010, reporting calls for scaling back the physical and virtual fence and in 2011 the virtual fence, part of SBI/SBINet is cancelled.

In the run-up to the 2012 presidential election, reporting largely focused on the use of drones (includes GEOINT sensors on drones) being used along the border, specifically calling them ineffective due to lengthy maintenance timelines and drones being loaned to other government agencies. The largest reporting year is 2013 with a significant amount of reporting on measuring border security and the challenges that go along with it specifically, the difficultly involved in quantifying successes (Khimm 2013, Plumer 2013). In 2014, a large amount of reporting pertains to the child refugee crisis spurred by politicians in Washington, D.C., that allegedly gave the perception that as long as illegal border crossers, specifically children, made it across the US-Mexico border they may be provided asylum. This led to a significant increase (2,000 per week in some instances) of child border crossers crossing into Texas during 2014 (Caldwell 2014). Common themes noted in reporting include immigration policy, discussion of open border/guest worker programs, and concerns about measuring border security. Specific verbiage used in *Washington Post* reporting is similar to that seen in Arizona reporting and include the use of words such as: "porous border," "war," "operational control of the border," and "border crisis."

The content analysis of Government Accountability Office (GAO) reporting which entailed the analysis of all relevant (reports specifically pertaining to US-Mexico border security) GAO reporting from 1996-2014 resulted in the analysis of 73 reports

(see figure 46). Of those 73 reports, 42 reports were neutral (either provided both positive

and negative aspects of DHS/CBP border efforts or simply outlined plans), 28 were

negative (highlighted significant downfalls and challenges that CBP and/or DHS needed

to correct) and 3 were coded as positive, meaning they touted successes of CBP and/or

DHS in their border security efforts. The year 2007 was the highest reporting year for this

topic which most reports focused on the SBI Net fielding and the issues associated with

cost overruns and schedule delays. Additionally, 2010 had a high amount of reporting

and like 2007, was focused on SBI and urging DHS to re-evaluate the fielding of the

project (which as stated previously, was cancelled in 2011). Common themes in reporting

from 2010-2013 were: the need for increased training for CBP agents, the need for

increased collaboration and information sharing between DHS/CBP and other

government agencies, to include local/state government agencies.

Years	Report 1	2	3	4	5	6	7	8	9		Coding:	
1996	NE	NE	NE	0	0	0	0	0	0			
1997	NE	NE	0	0	0	0	0	0	0			
1998	NE	0	0	0	0	0	0	0	0		Coding:	P = Positive
1999	N	NE	NE	0	0	0	0	0	0			N= Negative
2000	NE	N	0	0	0	0	0	0	0			NE= Neutral
2001	N	0	0	0	0	0	0	0	0			0 = No Relevant Reporting
2002	NE	NE	0	0	0	0	0	0	0			
2003	N	NE	0	0	0	0	0	0	0			
2004	NE	N	P	N	NE	0	0	0	0			
2005	NE	N	NE	NE	NE	NE	NE	0	0			
2006	N	N	NE	0	0	0	0	0	0			
2007	N	N	P	NE	N	NE	NE	N	N			
2008	N	NE	N	N	0	0	0	0	0			
2009	N	NE	NE	N	N	NE	0	0	0			
2010	NE	NE	N	NE	N	N	N	N	0			
2011	N	NE	N	NE	NE	0	0	0	0			
2012	NE	NE	NE	0	0	0	0	0	0			
2013	P	NE	NE	NE	0	0	0	0	0			
2014	NE	NE	N	0	0	0	0	0	0			

Figure 46. GAO Content Analysis, 1996-2014.

Findings by Factor

GEOINT Sensors

As of 2016, there were nearly 12,000 GEOINT sensors operating along the southern border with additional sensors fielding each year (figure 47). Of the four southern border states, Texas possesses the highest number of sensors due to the amount of shared land border with Mexico. In addition to DHS owned sensors along the Texas border, Texas has also deployed approximately 4,000 GEOINT sensors of its own with plans to deploy more over the next five years (Texas DPS, Border Patrol Expo 2016).

Figure 47. GEOINT on the US-Mexico Border.

Source: CBP 2012.

Due to a lack of available data pertaining to GEOINT detections versus apprehensions, the relationship between GEOINT technology and apprehensions cannot be determined, though data available for the latter part of the period of study indicates

that GEOINT has been responsible for thousands of illegal border crossing detections and hundreds of apprehensions.

Terrain

The effectiveness and utility of GEOINT sensors along the southern border largely depends on terrain and whether the terrain is amendable to sensor placement. Many sensors (full-motion video cameras) along the border require foliage or brush to conceal the sensors. The data reveals that all Border States are amendable to placement of ground sensors though New Mexico does not provide the natural concealment that Texas does (BSOC 2014). That said, the terrain and weather was noted by border security experts to impact GEOINT effectiveness given tree limbs can cause a false-positive in GEOINT collection in instances of high winds, for example (DPS 2014, GAO Report on Unmanned Aerial Systems 2014). Of note, cell tower challenges were noted as the larger challenge, versus terrain, in terms of placing and employing GEOINT sensors along the border (Robertson 2017).

Manning

DHS data suggests a relationship between increased CBP manning and decreased apprehensions however, research conducted by Cornelius & Salehyan (2007), Davila, et al. (2002), and Espanshade, et al**.** (1997) show that increased manning and resources only results in short-term impacts on apprehension rates (short term deterrence). Annual border security reports and press reporting note a high-turnover for CBP staff which may impact CBP's ability to take action on every single piece of intelligence (including GEOINT) that is collected and received (Border Security Expo/Conference 2016).

Despite increases in agent manning, shown via CBP descriptive statistics, both newspaper and government reporting content analysis suggest that CBP remains undermanned which means, even when additional GEOINT sensors are fielded, there may not be enough CBP agents to take action on each piece of GEOINT received from the sensors. Interview data and CBP officials speaking at the annual Border Security Expo (2016) have indicated that agents must prioritize which pieces of GEOINT they act on.
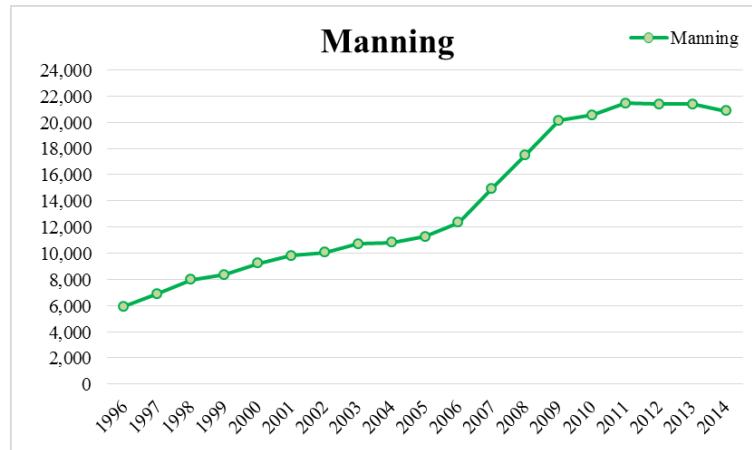

Figure 48. CBP Manning 1996-2014.

Source: CBP.

Training

Descriptive statistics and data pertaining to the amount of training that both agents and analysts received each year during the period of study was not publicly available however, both government and newspaper content analysis data suggest that CBP staff (intelligence analysts and agents) do not always receive the amount of training needed to perform their duties (GAO Report on Border Security/Training 2005, 2007, 2010, 2013).

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Upon hiring, CBP agent training consists of 19 weeks at the Border Patrol Academy; additionally, 12-16 weeks of on-the-job training will occur after the academy (CBP, CALEPA 2016). A relationship between training and apprehensions could not be determined due to a lack of available data.

Experience

Experience considers the amount of experience that CBP staff (analysts and agents) possess and whether this impacts apprehension rates as well as the employment and use of GEOINT along the southern border. Descriptive statistics were not available for every year during the period of this study therefore, a relationship between experience and apprehensions could not be determined.

Information Technology (IT) Reliability

Reliability of information technology is extremely important for those working border security operations. Analysts must have the ability to receive intelligence, specifically GEOINT data from the sensors, review it, analyze it and then quickly transmit it to the CBP agents responsible for taking action on the intelligence. Data pertaining to IT-reliability was not available despite researcher efforts to obtain it, therefore, a relationship between IT reliability and apprehensions could not be determined.

Federal Funding

Descriptive statics, content analysis and interviews reveal that federal funding for border security has continued to increase each year of the period under examination, 1996

to 2014. Increases in federal funding coincide with decreases in apprehensions. There is a relationship between increased funding and decreased apprehensions.

Economic Conditions in Mexico

The data shows no relationship between economic changes in Mexico such as low GDP rates and high unemployment, and apprehension rates. Though US unemployment rates were not considered in this study, data obtained during the course of research shows that there is a relationship between low US unemployment rates and high apprehension rates, specifically in the case of California. In California, an increase in apprehensions is seen when there are low US unemployment rates (1996-2001) and, apprehension are low when there are high US unemployment rates (2009-2014) (Massey 2016, US Bureau of Labor Statistics 2016). Additionally, though a relationship was not seen between Mexican unemployment and GDP, other economic conditions/pressures in country of origin likely affected apprehensions. To explain, Hanson, et al (2001), Wilson (1993), and Cornelius & Salehyan (2007) highlight in their research the "push" factor from the country of origin meaning in instances when wage labor rates are low in the country of origin, this pushes individuals towards the US-Mexico border. A decrease in apprehensions of Mexican illegal immigrants from 2012-2014 coincides with increased wage rates in Mexico during this timeframe. Additionally, though not part of the original research design, data suggests that an increase in apprehensions of individuals from Guatemala, El Salvador, and Honduras at US-Mexico border from 2012-2014 coincides with high unemployment in those countries. Other economic factors that may impact apprehensions include Wilson's (1993) research that suggests internal family economic

pressures due to large family constructs play a role in whether individuals decide to cross illegally into the US. In addition, Hanson, et al (2001) and Cornelius & Salehyan (2007) state in their research that "pull" factors may also impact individuals' choice to cross the border illegally, explaining that low unemployment and high wage rates in the US attract (pull) illegal border crossers to the US. For this reason, it is recommended that future research include data pertaining to US economic factors as well as other economic factors such as pull/push factors and economic factors within the country of origin.

<div align="center">Political Conditions in Mexico</div>

The data shows no relationship between political conditions (the occurrence of presidential elections) in Mexico and apprehension rates. In 2000, a spike in illegal apprehensions is seen which coincides with the 2000 Mexican presidential election in which Vicente Fox of the PAN party (the opposition party to the ruling PRI party) won the presidency however, there was not enough available data to determine a relationship. Fox largely supported US-Mexico joint efforts to control and improve security along the US-Mexico border and, he also supported guest worker programs and immigration reform. His party was described as conservative but not far right or left leaning. During his presidency, he and George W. Bush had a strong partnership aimed at tackling border issues jointly (Shirk 2005).

A slight increase in apprehensions is also seen in the data in 2005 in the run up to the 2006 Mexican Presidential election in which another PAN politician, Felipe Calderon, was elected to office. However, that data shows that there is more likely a relationship between apprehensions and Calderon's policies and counter-drug operations

during those years, rather than the mere occurrence of an election. Calderon's foreign policy and specifically his approach to US-Mexico border cooperation mirrored that of his predecessor. Apprehension rates declined from 2006 through the end of Calderon's presidency. Calderon worked with the US to implement the Merida Initiative which was aimed at combating drug cartel related violence in conjunction with the US and other Central American nations (CRS Report Merida 2016). During his time in office, the Mexican president experienced the start of increased violence across the country as a result of cartel/drug turf wars. In 2006 he held Operation Michoacán in which a state-wide exercise targeted cartel networks (Wilkinson 2015).

In 2012, a slight increase (29,296 more than the previous year) in apprehensions is seen which coincides with the 2012 Mexican Presidential election of Enrique Pena Nieto of the PRI party. This election was of note given the previous ruling party for over 7 decades (PRI) was returned to the presidency during this election. Nieto's approach to border security is largely a continuation of the work that Fox and Calderon had performed and, the president continues to work to enlarge police forces for counter-drug purposes. That said, he has minimized the amount of US involvement and work within Mexico, citing the request for the US's involvement to be more "discreet" and "centralized" (Janowitz 2016). Nieto's approval ratings have been low and, violence continues with regard to drug-related crimes. This trend is likely a contributing factor to the recent (2012-2014 and beyond) uptick of apprehensions along the border.
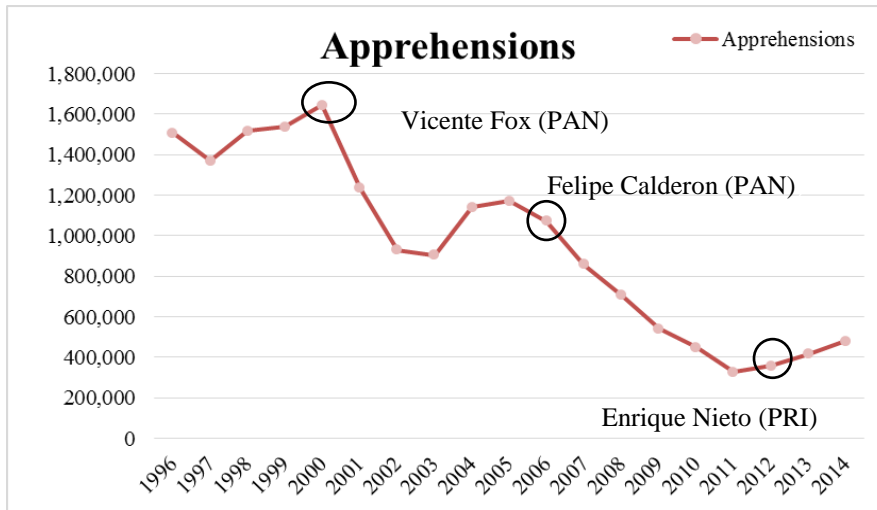
Figure 49. Mexico Election Years.

Note: Figure shows Mexico presidential elections compared to annual apprehensions of illegal border crossers along the US-Mexican border. Sources: CBP, IFES.

In summary, the first central argument presented in this dissertation, "Securitization theory illustrates that GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed" is supported, as is the second central argument, "An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has in general, positively affected US-Mexican border security, by providing law enforcement and border patrol agents an increased understanding of the border, including pattern-of-life information pertaining to where illegal border crossers tend to cross". Due to a lack of available data pertaining to illegal border crosser detections, analyst and agent training and experience, IT reliability and agent manning,

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central arguments three, four and five ("An increase in GEOINT capabilities along the US-Mexican border since the 9/11 attacks has positively affected US-Mexican border security by specifically increasing America's capacity to *detect* individuals crossing the border illegally, an increase in GEOINT capabilities along the US-Mexican border since 9/11 has positively affected US-Mexican border security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally and, the United States has been unable to fully utilize the benefits of GEOINT capabilities (such as being able to analyze and take action on all GEOINT collected) along the border due to a shortfall in analyst and agent manpower"), cannot be supported.

CHAPTER V – CONCLUSIONS

Research Summary & Findings

Immediately following Al Qaeda's 11 September 2001 terrorist attacks against the

United States, a vigorous discussion on US-Mexican border security surfaced as

politicians and leaders within the American government scrambled to secure the porous

US-Mexico border in an effort to keep potential terrorists from slipping into the United

States undetected and ultimately carrying out another 9/11-type attack (Maril 2011).

Border issues that had previously been "securitized," or in other words, categorized as

dire or grave threats to US national security (such as illegal immigration) were amplified

and further securitized after the 9/11 attacks, resulting in the fielding of specific

securitization instruments and tools, namely, GEOINT technology.

Three research questions are presented in this dissertation in order to evaluate

both the operational and symbolic aspects of GEOINT as a securitization instrument and

tool:

1. To what extent does securitization theory explain the role of GEOINT, as a
   securitization instrument and tool, in reproducing the narrative associated with the
   threat of illegal immigration along the US-Mexico border?
2. To what extent has GEOINT, as a securitization instrument and tool, affected US-
   Mexican border security generally and, specifically, the ability of the United
   States to both detect and apprehend individuals who cross the border illegally?
3. To what extent has the United States been able to fully utilize the benefits that
   GEOINT, as a securitization instrument and tool, can offer along the border?

Five central arguments are presented in this dissertation in relation to the above research questions:

1. Securitization theory illustrates that GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed.

2. An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has, in general, positively affected US-Mexican border security, by providing law enforcement and border patrol agents an increased understanding of the border, including pattern-of-life information pertaining to where illegal border crossers tend to cross.

3. An increase in GEOINT capabilities along the US-Mexican border since the 9/11 attacks has positively affected US-Mexican border security by specifically increasing America's capacity to *detect* individuals crossing the border illegally.

4. An increase in GEOINT capabilities along the US-Mexican border since 9/11 has positively affected US-Mexican border security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally.

5. The United States has been unable to fully utilize the benefits of GEOINT capabilities (such as being able to analyze and take action on all GEOINT collected) along the border due to a shortfall in analyst and agent manpower.

The findings of this dissertation are as follows:

- The first central argument, "Securitization theory illustrates that GEOINT, as a securitization instrument and tool, reproduces the narrative associated with the threat of illegal immigration, and, both public and government perceptions play a role in how that narrative is reproduced and portrayed," is supported. GEOINT is a securitization tool (a capability fielded in response to the threat of illegal immigration), but its presence along the border also gives it the ability to securitize. More pointedly, the employment of GEOINT, a military technology often used in armed conflict or war, along the southern border, reaffirms the existing narrative that the border is an unsecure, unsafe place, one that requires military-type technology to surveil and police it (Balzacq 2008, 2011). Additionally, information pertaining to the amount of GEOINT data collected annually (by state) along the border is not publicly available for every year of the period of examination (with security classification reasons being cited by the Department of Homeland Security [DHS] and Customs and Border Protection [CBP]), reinforcing the perception and existing narrative of a dire threat along the border, one only elites such as politicians and security experts are allowed to know about fully (Salamon 2002). GEOINT's ability to reconstruct the existing narrative in turn reaffirms the notion of a threat along the border. Based on content analysis of media and government reporting, both public and government elite perceptions of the border and GEOINT's role in securing it, play a role in reaffirming the narrative that the border is an unsecure, unsafe place due to the

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threat of illegal immigration. Content analysis specifically illustrates that government perceptions and messaging (illustrated by Government Accountability Office (GAO) reports) highlight the accomplishments of border security initiatives to include the use of GEOINT assets, while also highlighting the needs for additional manning and resources. According to securitization theory, highlighting accomplishments of GEOINT technology in detecting illegal border crossers (at least in the latter part of the period of examination, 2013-2014) further securitizes the illegal immigration threat by confirming that the threat still exists and therefore, the use of this securitization tool (GEOINT) is still justified. Public perception, as highlighted in newspaper reporting, also emphasizes the accomplishments of border security but says little about the accomplishments of GEOINT in particular (possibly due to the lack of publicly available data on GEOINT detections resulting in apprehensions). Public perceptions of border security are mixed and dependent on location and culture. For example, US ranchers along the border express the need to further secure the border in order to keep illegal immigrants from crossing through their land and damaging their crops (which affects their economic situation); while environmentalists and human rights activities stress the importance of open borders in order to reduce effects on the environment and families living along the border.

- The second central argument, "An increase in GEOINT capabilities along the US-Mexican border since Al Qaeda's terrorist attacks against the United States on 9/11 has, in general, positively affected US-Mexican border security, by

providing law enforcement and border patrol agents an increased understanding of

the border, including pattern-of-life information pertaining to where illegal border

crossers tend to cross," is supported. There has been an increase in GEOINT

along the border since the 9/11 attacks (DHS 2016). GEOINT has increased

visibility along the border, in particular by:

- o Providing law enforcement with an increased understanding of the border

  to include information on where and when illegal border crossers cross. In

  addition, this study finds that:

- o GEOINT does more than just detect illegal border crossers; it also aids law

  enforcement in finding drugs, smuggling routes, and provides pattern of

  life information for long-term/strategic intelligence analysis.

- o GEOINT aids law enforcement in planning border missions and general

  placement of agents.

- o Annual border security reporting estimates over 12,000 GEOINT assets

  are in operation on the southern border, with 4,362 of those being Texas

  state-owned/operated sensors.

- o From 2013-2014: 7,616 illegal border crossers were detected with

  GEOINT sensors carried on Unmanned Ariel Vehicles (UAVs).

- The third central argument, "An increase in GEOINT capabilities along the US-

  Mexican border since the 9/11 attacks has positively affected US-Mexican border

  security by specifically increasing America's capacity to *detect* individuals

  crossing the border illegally," is not supported based on a lack of publicly

  available data on annual GEOINT detections. Annual GEOINT detection data

was not publicly available for every year of the period of study, despite researcher efforts to obtain it via the Freedom of Information Act (FOIA) processes as well as interviews with CBP experts. A FOIA request was submitted to DHS Headquarters on October 6, 2016 to obtain the necessary information however, the FOIA representative informed the researcher that that data was likely classified and, due to a six month backlog in FOIA requests, it was recommended that the researcher instead use publicly available annual border security reports and figures to obtain border security information. The FOIA information (GEOINT data) was not available, despite researcher attempts to obtain status in February, May and August of 2017. Salamon (2002) explains that securitization tools (such as GEOINT) are a package consisting of four parts; two of those parts being a delivery system (an organization responsible for employing the tool) and rules that determine who is allowed to know fully (and use) such tool. Based on securitization theory and specifically Salamon's definition of a securitization tool, this research suggests that the lack of available data pertaining to GEOINT is a result of the researcher not being part of the delivery system or privy to such data under the rules associated with this particular securitization tool.

- The fourth central argument, "An increase in GEOINT capabilities along the US-Mexican border since 9/11 has positively affected US-Mexican border security, specifically by increasing America's capacity to *apprehend* individuals crossing the border illegally," is not supported. Though apprehension data (annual apprehension rates) is available for every year during the period of examination, the data does not specify the amount of apprehensions specifically made as a

result of a GEOINT detection. Prior to 2015, CBP staff were not required in their

reporting procedures to annotate whether the apprehension they were involved

with was a result of a GEOINT detection; therefore, this data was not available

for the period of examination.

- The fifth central argument, "The United States has been unable to fully utilize the

   benefits of GEOINT capabilities (such as being able to analyze and take action on

   all GEOINT collected) along the border due to a shortfall in analyst and agent

   manpower," is not supported due to a lack of publicly available data pertaining to

   analyst and agent manpower. DHS/CBP publish annual manning statistics, but

   that data does not specify between agent, analysts or administrative staff. This

   data was also not available via the FOIA process or interviews despite researcher

   efforts to obtain it.

A qualitative analysis, comparative case study, utilizing securitization theory

scholar Thierry Balzacq's second level of securitization studies analysis, the "Acts" level

of analysis, was conducted for this dissertation. This comparative case study compared

and contrasted the ways in which federal plans for border security, and specifically the

use of GEOINT, occurred in each of the four states located along the southern US border

(California, Arizona, New Mexico and Texas) from 1996-2014.

The comparative analysis entailed the use of descriptive statistics, content

analysis of newspapers, government agency reports and an interview with a southwest

border security expert in order to evaluate the operational and symbolic effects of

GEOINT on US-Mexican border security from various angles. The original research

design entailed the use of both annual illegal border crosser detections and apprehensions

as a measure of border security however, detection data was not publicly available therefore, annual illegal border crosser apprehensions were used. Thirteen factors affecting border security were considered in this study: (1) GEOINT technology, (2) terrain, (3) analyst manning, (4) agent manning, (5) analyst training, (6) agent training, (7) analyst experience, (8) agent experience, (9 and 10) information technology reliability (IT) for agents and analysts, (11) federal funding for border security, (12) economic conditions in Mexico, and (13) political conditions in Mexico.

Detailed statistics on the exact number of GEOINT sensors in operation along the southern border were not publicly available for every year of the study. However, GEOINT sensor information from DHS and GAO annual border security status reports outlines the number of sensors currently in operation (over 12,000), and, data from the latter part of the study (2011-2014) reveals thousands of GEOINT-specific detections of illegal border crossers as well as hundreds of apprehensions attributed to GEOINT technology. Numerical data pertaining specifically to agent versus analyst manning, training and experience was also not available. While some annual border security reports discuss CBP manning, the reports do not provide a specific breakout of the manning to illustrate how many personnel are performing intelligence analysis roles versus agent specific roles or administrative roles. Likewise, annual reports discuss, in general terms, training requirements and experience of analysts and agents but do not provide numerical data. Consequently, in order to accomplish the analysis, interview data and existing literature provided insight into average manning, training, IT reliability, and experience of agents and analysts working border security efforts. Though federal funding (grants for border security by state) were only available for some years of the period of study, data

pertaining to overall federal funding for border security was available and was used in the analysis for each state and augmented by state-specific information when available, from DHS and GAO reporting, via state budgets, as well as interview data. Economic and political information on Mexico was publicly available via various sources. This study evaluated DHS and state-owned GEOINT capabilities (ground and airborne full motion video, Electro-Optical, Infrared and Synthetic Aperture Radar sensors) and excluded DoD owned GEOINT capabilities due to classification of DoD GEOINT missions.

Overall, descriptive statistics from DHS provided a baseline understanding of border security, measured by apprehensions, along the southwest border. Descriptive statistics from the US Border Protection (CBP/DHS), and the Border Security Operations Center in Texas, found that overall apprehensions have decreased during the period under examination which is deemed a positive sign (a measure of strong border security) by DHS. Based on a lack of available data, it could not be determined definitively whether GEOINT played a role in the decrease in apprehensions.

The newspaper content analysis provided an understanding of media and public perceptions about border security, including the use of GEOINT along the southwest border. The content analysis was a particularly important part of this study given that securitization studies largely rely on content analysis considering the discipline's interest in the role of the media in the portrayal of threats and security challenges. For California, the *The San Diego Union Tribune* was chosen, given its proximity and coverage of the southern border. For Arizona, *The Arizona Republic* was chosen for its ranking on the top 100 most read newspapers in circulation. For New Mexico, *The Albuquerque Journal* was selected, given its ranking on the same top -100 list. For Texas, *The El Paso Times*

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was selected for its frequent reporting on border security and border issues. The *Washington Post* was selected as a non-regional paper, based on being ranked one of the top newspapers within the United States and provided insight into media messaging occurring outside the southern border region. The newspaper content analysis identified positive and negative themes within articles that either highlighted or downplayed successes and failures related to border security in general, as well as the use of GEOINT along the border. A random sample of 20 articles per paper, per year of the scope were queried. A total of 1,043 newspapers were analyzed in the content analysis. Content analysis of newspaper reporting indicated an overall neutral reporting by the media and citizens along the border in terms of the status of border security and the use of GEOINT. This means a majority of reporting provided facts and sometimes both positive and negative updates on the status of border security for the most part and did not lean more negatively or positively. That said, cases of negative reporting exceeded those of positive reporting on border security during the overall period of the study suggesting the population may not be satisfied with the government's approach to border security. The analysis illustrates that there are re-occurring themes during or around election years (but not increased reporting except in one instance, 2008) and, that states with larger shared US-Mexican border appear more focused and aggressive about obtaining additional federal resources and funding for their portion of the border.

Government reporting was analyzed to understand the government's perception of the status of border security (including the use of GEOINT along the border). GAO reports pertaining to border security and GEOINT technology along the border were analyzed for positive and negative themes using a similar methodology as the newspaper

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analysis. The government reporting seen via the content analysis shows a mostly neutral reporting across the period of examination highlighting both successes and failures of border initiatives and an overall frustration with a lack of measurable metrics for border security, despite frequent requests. Additionally, a frustration over initiatives being behind schedule and over budget is also seen in the reporting.

Interview data was limited to one interview, with the Commander of the Texas Rangers Special Operations Group, Mr. J.D. Robertson, Texas Department of Public Safety. Interviews were requested with CBP Chief Patrol Agents from California, Arizona, New Mexico and Texas however, CBP officials were unable to partake in interviews, citing classification concerns (CBP 2017). Interview data from Texas provided context and operational level insight into why statistics (apprehension rates, for example) are high or low during particular years of the scope for Texas.

<div align="center">Closing Observations</div>

Regarding the application of securitization theory to the US-Mexico border security problem set, this dissertation finds the following:

- Securitization theory is applicable to the US-Mexico border security problem set given its ability to provide a framework in which both operational and symbolic effects of securitization instruments and tools used along the southern border can be analyzed. Specifically, the theory's Acts level of analysis, which studies the outcomes of a particular securitization move, provides the researcher with the ability to uncover the effects of specific securitization instruments and tools

fielded to counter threats. According to Balzacq (2008), "understanding the rationales behind security tools as well as their nature and effects helps to nudge securitization studies in a new direction by unearthing certain elements that might not easily surface otherwise at the level of discourse."

- Securitization theory provides the ability to study policy instruments (also referred to as securitization instruments) and tools from unique angles. Instead of simply studying the operational and technical effects of these instruments and tools, the theory provides a framework for understanding how the mere existence or employment of these instruments and tools shape the perception of the threat that these instruments are fielded to counter. Balzacq (2008), illustrates this point by stating, "there are symbolic attributes built into policy instruments that tell the population what the [securitizing actor] is thinking and what its collective perception of problems is" (Balzacq 2008, Peters and van Nispen 1998).

This study finds the following regarding border security in general and, specifically the use of GEOINT capabilities, based on data available for the comparative analysis of four case studies, California, Arizona, New Mexico and Texas:

- According to DHS and CBP reporting from 2011-2014 as well as interview data from the Texas case, GEOINT has detected thousands of illegal border crossers and illegal border activity and, has contributed to hundreds of apprehensions during this four-year timeframe.
- Descriptive data from CBP shows a relationship between increased manning and funding and decreased apprehensions. Previous studies, by contrast, indicate that

increased manning does not significantly affect apprehension rates, it only results in short-term deterrence given illegal border crossers will still cross despite more manning along the border. The additional manning will cause them to cross at a less policed area or cross at a later date (Robertson 2017, Cornelius & Salehyan 2007). Studies also show that more manning simply means border crossers will have to make more attempts at crossing before they are successful and, that they may choose to cross in larger groups so that if detected by authorities, some members of the group may have increased odds of evading while authorities are focused on detaining those that they can catch (Cornelius & Salehyan 2007). Of note, manning funds are a subset of the larger "funding" data provided by CBP therefore, when funding goes up, manning will also go up given some of that funding is specifically allotted for manning.

- The US and specifically, DHS, need a better measure for border security. A 2013 GAO report as well as 2011 congressional testimony from CBP states that DHS has no metric for measuring security. Recent data from this dissertation's content analysis suggests this is still very much the case.

- There is a mismatch between the existing border security strategy and the way border security is measured. One may think that additional technology, manning and funding would mean an increase, not a decrease in apprehensions (more GEOINT along the border to detect illegal border crossers + more agents to act on those illegal border crossing detections = more apprehensions), this, according to the DHS apprehension statistics, is not true. The DHS data suggests that more technology and manning result in a decrease in apprehensions due to illegal

border crossers being deterred from crossing. This is interesting given existing

academic literature indicates that increased resources along the border only result

in short- term rather than long-term deterrence. In other words, increased

enforcement along the border results in crossers deciding to cross in other areas or

at different times but for the most part, does not deter them from crossing all

together (Cornelius & Salehyan 2007, Espanshade, et al. 1997).

- CBP/DHS abandoned the deterrence strategy in recent years for a "risked-based

  assessment strategy" which uses a measure of low risk to assess border security.

  Specifically, "low-risk" is when there is a high probability of detection coupled

  with a high probability of interdiction (Schroeder 2012, Haddal 2010). This may

  mean one of three things: either deterrence works, and apprehensions are on the

  downslide due migrant fears of getting caught (due to more technology and agents

  along the border), or illegal border crossers are simply finding other ways to move

  across the border undetected, such as, utilizing tunnels, air or sea, or, a

  combination of both deterrence and utilization of alterative crossing methods.

- A clear definition of "border security" is needed. In 2010 CBP stated it had 44%

  operational control of the southern border, but it is not clear if this means the

  border is "secure" (CBP 2010). To many, especially those citizens and lawmakers

  expressing opinions outlined in the content analysis of this dissertation, 44% does

  not equal "secure". Defining border security will largely be tied to defining an

  appropriate metric for measuring border security and then communicating that

  definition and metric to the public.

Policy Recommendations

- It is recommended that DHS implement policy that requires the tracking of not only overall detections of illegal immigrants along the southwest border (detections by any means) but specifically GEOINT detections and GEOINT detections that result in apprehensions, and, that such data be made publicly available. This data will allow DHS, lawmakers, academics, industry partners and the public more information pertaining to the return on investment for these extremely expensive GEOINT sensors and, will allow academics and industry partners to better support border security research and development initiatives. This information will also aid state and federal leaders in determining where to invest future homeland security and border security funds.

- In an effort to demonstrate transparency and progress in securing the border, it is recommended that DHS implement policy to maintain and publish (via its website) annual data/statistics on border security manning (broken down by agent, administrative, analyst, and other staff members), training, and grants for each southwest border state. Publishing such data will allow academics as well as industry professionals to continue to support border security-related studies and initiatives more effectively. Such studies and collaboration could greatly benefit DHS in a time of increased fiscal constraints. Additionally, this data will provide the public as well as state-level border security experts and government leaders information that can be used for trend analysis and other forms of analysis supporting budget development and strategic planning for border security.

- For future fielding of GEOINT capabilities along the southern border, it is recommended that DHS/CBP implement policy requiring a manpower study to determine appropriate sensor-to-agent and sensor-to-analyst ratios for any future GEOINT capabilities to be fielded along the southern border in order to assure that there is an ample number of analysts to exploit and analyze the increase in GEOINT data to be collected and, enough agents to take action on GEOINT detections of illegal border crossers.

Contribution to the Discipline

Previous securitization theory studies have largely focused on the actors and contextual levels of analysis, seeking to understand more about the individuals that securitize issues and the contexts in which they securitize them (Salter and Piche 2011). In order to make a unique contribution to existing securitization theory literature, this dissertation focused on the effects of a particular securitization instrument/tool. As a result, this dissertation has provided both an operational/technical analysis of the use and effects of GEOINT as a securitization instrument and tool, as well as a symbolic analysis of the use of GEOINT in reproducing the existing narrative surrounding the threat of illegal immigration on US national security, making this study useful to both operational experts within the security field as well as academics seeking to further securitization theory (Balzacq 2008).

This dissertation's findings are important for both academics and practitioners. For academics, the study fills an existing gap in securitization theory literature by

focusing on the effects of a particular securitization instrument/tool, GEOINT. Further, it provides a recent example of the application of this theory to the border security problem set for future border security researchers and also outlines future research recommendations for academics studying border security. Additionally, it further develops the "Acts" level of analysis by utilizing it to explore both the operational and symbolic effects of a particular securitization instrument and tool. Further, this dissertation fills a gap in current literature by providing updated and relevant GEOINT-specific US-Mexico border security literature.

For practitioners and policy makers at the federal and state levels, this study's findings provide clarification on the utility of GEOINT along the US-Mexico border as well as the importance of capturing and maintaining performance statistics pertaining to GEOINT detections and, more importantly, apprehensions attributed to GEOINT detections. Additionally, it highlights the continued need to identify a commonly accepted definition of border security as well as the need to identify a new method of measuring success along the border. This is important given that the fielding of new GEOINT technologies in support of border security is expected to continue in the coming years, according to the CBP strategic plan (2016).

<center>Future Research Recommendations</center>

For researchers wishing to build upon this study in the future, it is recommended that if available, data pertaining to tunnels and detection of tunnels along the southwest border be considered and included in the analysis. In instances of the scope where apprehension rates fell, tunnels may have provided passage for those crossers however,

statistics and other data pertaining to tunnels was not consistent or available for every

year of the scope. The California content analysis of newspapers specifically revealed an

increased reporting on border tunnels used by illegal border crossers during the following

years: 2003, 2004, 2006, 2007 and 2013.

Additionally, it is recommended that the political and economic conditions be

expanded to include US and Central/South American countries where illegal border

crossers originate from. According to CBP's 2014 Annual Border Security Report, in

2013-2014 apprehensions of illegal border crossers from Central America (largely El

Salvador, Guatemala and Honduras) rose 68% (see figure 50) with apprehensions of

illegal border crossers from Mexico decreasing by 14%. CBP and interview data show

that a growing number of Central American illegal border crossers are coming to the US

in order to seek asylum via the US-Mexico border. For this reason, political changes in

Central American countries should be included in future studies (CBP Apprehension
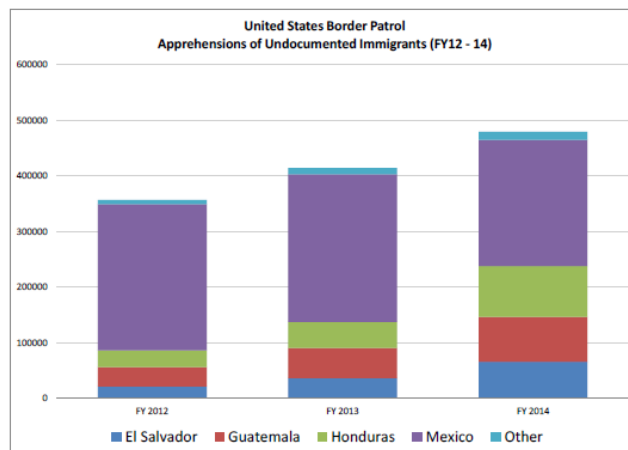
Statistics 2016, Robertson 2017).

Figure 50. Apprehensions of illegal border crossers from 2012-2014 by country.

Source: CBP Annual Border Security Report, 2014.

Likewise, CBP's 2013 annual border security report notes a 55% increase in illegal border crossers from Central America. Due to annual border security reporting and interview data that indicates there has been an increase in illegal border crossers coming from Central America through Mexico over the past four years it is recommended that future research on this topic consider including that data.

Further, though US economic changes were not a variable in this study, future studies should include this information. During the course of this research and specifically with the case of California, a relationship between US employment rates (high unemployment) and low apprehensions is seen (Massey 2016, CBP 2016).

Figure 51. Apprehension rates for California compared to US Unemployment.
Source: CBP, US Bureau of Labor Statistics 2016.

Other criminal activity, such as increases in cartel or gang violence along the southern border would also be useful to include, as an additional potential factor. In addition, as data pertaining to GEOINT detections resulting in apprehensions becomes

available, this information should be considered and utilized in future studies. To explain, during this dissertation it was found that DHS/CBP do not maintain statistics on apprehensions specifically attributed to GEOINT detections (or at least do not make them public), though the Texas Department of Public Safety, specifically the Texas Border Security Operations Center, does. The software that CBP agents utilize to receive GEOINT information for action does have a field that agents can populate if their action was a result of GEOINT information, however, up until recently (2016) it was not mandatory for agents to check that field (GAO Report, DHS Testimony for Sub-Committee on Border and Maritime Security 2016). Now that it is mandatory, this information should be included in future studies pertaining to the use of GEOINT along the US-Mexican border.

Further, though not part of this study, during the course of this research is was revealed that there is a relationship between US policy changes, specifically immigration and deportation policy, and apprehension rates and therefore, US policy changes should be included as a variable in future research.

- Policy changes such as President Barack H. Obama's 2012 announcement that the US would stop deporting young illegal immigrants as long as they met certain criteria (criteria similar to that laid out in "Development, Relief, and Education for Alien Minors" (DREAM Act), such as having come to the US as young children, possessing a high school degree from the US, and having no criminal record were cited in the interview data and data obtained at the Border Security conference as having impacts on apprehension rates (Miranda 2010, Robertson

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2017). Several politicians and law enforcement agencies have claimed that this

2012 change contributed to the 2014 child immigration crisis seen along the

southern border (and which affected Texas the most of all the border states) in

which 52,000 illegal immigrant children, most of which came from Central

America, crossed the US border illegally and were subsequently apprehended by

CBP (Greenblatt 2014).

- Political changes in the US where, for example, a president is highly focused on

    border security (such as with President George W. Bush and his signing of the

    Secure Fence Act in 2006), render an increase in funding and technology along

    the border more likely, which according to the data, coincides with decreased

    apprehensions.

In closing, the application of securitization theory and specifically the "Acts"

level of analysis for this dissertation was a useful alternative to other theories used in

border security studies such as deterrence theory, which overlooks the way in which

threats come into being and the outcomes of tools fielded to counter such threats. The

application of securitization theory provided a more detailed investigation of the

outcomes (in this case, the fielding of GEOINT as a securitization instrument and tool) of

a specific securitization move, something previously overlooked in border security

literature.

Future studies on this topic should consider not just the factors presented in this

study but also political and economic factors of the US and Central America countries,

data pertaining to the use of tunnels along the US-Mexico border by illegal border crossers and data pertaining to the annual number of illegal immigrants within the US.

Finally, in terms of policy recommendations moving forward, it is recommended that manpower studies be conducted when policy makers are determining whether to increase the amount of GEOINT capabilities along the US-Mexico border, in order to assure there are enough CBP agents to take action on GEOINT information being collected. In addition, it is recommended that policy makers establish a stronger measure for border security, one that considers not just apprehension rates but also criminal activity along the border as well as the number of illegal immigrants living in the US annually. In terms of GEOINT technology, it is recommended that policy makers involved in acquiring and fielding GEOINT capabilities establish policies mandating the documentation of GEOINT sensor performance, specifically GEOINT collection that results in or contributes to an illegal border crosser apprehension or detection and identification of illegal border activity and, that such data be made publicly available so that academic researchers may better assist border security experts in conducting border security-related studies. Lastly, it is recommended that policy makers involved in developing illegal immigration policy expand the role of both academics and border security experts such as DHS, CBP and local law enforcement strategic planners in the development of such policy in order to assure policy makers have ample insight into historical data pertaining to the potential effects of immigration policy changes on US-Mexico border crossing activity and the required resources and manning needed to respond to and manage such activity.

APPENDIX A – Interview Questions & Authorization Letter

General Border Security Questions:

1. How does your organization define border security?
2. How does your organization measure border security?
3. Is the border secure?

4. Has there been an increase in the fielding/utilization of GEOINT capabilities along the US-Mexican border post-9/11?
   a. Sub-Question: Have acquisition processes/timelines for GEOINT changed since 9/11?

5. What type of GEOINT capabilities does your organization utilize or work with and for what purposes?
   a. Sub Question: Who owns/operates those capabilities?

6. If an increase in GEOINT has occurred, how has it impacted the capacity to detect and apprehend illegal border crossers?

7. Do you have statistics on the number of detections and apprehensions that can be attributed to GEOINT technology?
   a. Sub-Question: Are a large amount of your detections and apprehensions attributed to GEOINT and has that changed post-9/11?
   b. Sub-Question: Is GEOINT the most effective method of detection of illegal border crossers?

8. How does your organization define "detections" and "apprehensions" (what is considered high and low for detections/apprehension historically)?

9. In your opinion, have there been any significant economic or political changes in Mexico that have effected detections and apprehensions during the scope of this study?

10. How is near-real time detection tied to apprehension (relationship between CBP centers, state centers, communication process/timeline/who is authorized to action on detections)?

11. What benefits or challenges does your state's terrain have on the placement or employment of GEOINT sensors (to include benefits or challenges associated with accessing the sensors for maintenance or repair)?

12. Do you have the right amount of analysts and agents for the number of sensors deployed?
    a. Sub-Question: Is there a recommended ratio?

13. Do your organization's analysts and agents receive the needed training to be able to exploit the full capability of the GEOINT sensors they work with?
    a. Sub-Question: What training is required and how often is it conducted annually once initial training is received?

14. How many years of experience, on average, do your analysts and agents have?
    a. Sub-Question: Do your analysts and agents typically have previous/other government agency or IC experience when you hire them?

15. In terms of your IT reliability, would you say your analyst and agent workstations/communication systems are operational, on average, 100% of the time? If no, what is the average and how does that impact the analysis of GEOINT and the ability to take action on GEOINT information?

    a. Sub-Question: What does your organization consider an acceptable

       threshold for IT reliability?

16. Has your organization consistently received federal or other funding for border security initiatives?

Authorization Letter from the Department of Public Safety:

TEXAS DEPARTMENT OF PUBLIC SAFETY
PO BOX 4087   AUSTIN TX 78773-0600
TEXAS RANGERS

STEVEN C. McCRAW
DIRECTOR
DAVID G. BAKER
ROBERT J. BODISCH, SR.
DEPUTY DIRECTORS

COMMISSION
A. CYNTHIA LEON, CHAIR
MANNY FLORES
STEVEN P. MACH
RANDY WATSON

January 10, 2017

Attn: Institutional Review Board
The University of Southern Mississippi
International Development Doctoral Program
730 East Beach Boulevard
Long Beach, MS 39560

To whom it may concern,

Heather R. Martin has our agency's permission to interview J.D. Robertson, Commander
of the Special Operations Group, or his designated representative in his absence, for the
purpose of completing her doctoral dissertation titled, "The Effects of Geospatial
Intelligence on US-Mexican Border Security".

Please contact me if you have any questions/concerns pertaining to the above.

Sincerely,

Randall B. Prince, Chief
Texas Rangers
6100 Guadalupe,
Austin, Texas 78752
(512) 424-2160

COURTESY - SERVICE - PROTECTION

APPENDIX B – Publicly Available Data & Figures

This dissertation contains several publicly available data and figures that were obtained via the following organizations' publicly available on-line databases and archives for researchers:

- Department of Homeland Security

- Customs & Border Protection

- Congressional Research Service

- U.S. Bureau of Labor & Statistics

- Drug Enforcement Administration

APPENDIX C – Content Analysis Coding Rules

Articles coded as positive:

Article's general leaning is positive in nature (touts or applauds border security

initiatives, highlights border security successes, including the use of GEOINT); includes:

- Mention of "winning the border war"

- Referring to the border as "secure" or having "operational control" of the border

- Discussion of Department of Homeland Security (DHS), Customs & Border

Protection (CBP) or other border security agencies successfully doing their jobs to

include catching illegal border crossers, discovering smuggling tunnels, discovering

drugs, etc.

- Positive discussion about the virtual or physical border fence being effective

(virtual fence is often referred to as the "virtual fence", "surveillance systems", "drones",

"cameras", "geospatial intelligence", "GEOINT")

- Support for border security initiatives including increases in funding, manning

and technology

Articles coded as negative:

Article's general leaning is negative in nature (criticizes or complains about border

security initiatives, highlights border security failures, including the use of GEOINT);

includes:

- References "unsecure", "porous" or "bleeding", "unstoppable flow" at border

- References a "crisis", "war", "emergency" or "border invasion" at the border

- References a lack of operational control of the border

- Discusses opposition to the virtual or physical border fence including it not

being effective (virtual fence is often referred to as the "virtual fence", "surveillance

systems", "drones", "cameras", "geospatial intelligence", "GEOINT")

- Discussion about increases spill-over violence

- Highlighting inaction by the government agencies or government overall to fix

border security including failure to increase manning, technology, resources

Articles coded neutral:

- Article has no positive or negative leaning about border security in general or specific

border security efforts, plans, operations, and technology

- Article summarizes multiple views/plans for border security outlined by

various/multiple political candidates, with no positive or negative leaning

- Articles pertaining to immigration policy and laws with no negative or positive leaning

APPENDIX D – IRB Approval Letter

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 16112102
PROJECT TITLE: The Effects of Geospatial Intelligence (GEOINT) on US-Mexican Border Security
PROJECT TYPE: New Project
RESEARCHER(S): Heather R. Martin
COLLEGE/DIVISION: College of Arts and Letters
DEPARTMENT: Political Science, International Development, and International Affairs
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Exempt Review Approval
PERIOD OF APPROVAL: 01/17/2017 to 01/16/2018
Lawrence A. Hosman, Ph.D.
Institutional Review Board

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