Constructing Military Alliance:

Shared Language as a Determinant of Alliance Sharing, Design & Duration



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To Baba, Mama, Housni and Fikri for their unyielding trust in me.

For Whom the Bell Tolls

No man is an island,
Entire of itself.
Each is a piece of the continent,
A part of the main.
If a clod be washed away by the sea,
Europe is the less.
As well as if a promontory were.
As well as if a manor of thine own
Or of thine friend's were.
Each man's death diminishes me,
For I am involved in mankind.
Therefore, send not to know
For whom the bell tolls,
It tolls for thee.

- John Donne,
Devotions upon Emergent Occasions (1623), Meditation XVII

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This dissertation represents a culmination of my long intellectual journey as a student of International Relations. While the work is my most meaningful scholarly contribution to date, it will not be my last. My own learning in the field will continue and I hope to eventually use the knowledge and the experience to serve the public beyond academia.

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Despite that belief, the three essays in this dissertation deal with the question of identity, which often pushes us to focus on our differences, limits us to self-interest, and prevents us from thinking about the collective benefit of humanity. I hope that my pursuit to understand how identity operates in IR contributes to how we understand international cooperation. In doing so, it is my wish that we inch closer to achieving peace and prosperity in all corners of the earth.

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Abstract

This dissertation comprises three papers investigating the impact of shared language among states on various aspects of their military alliance relations. The first paper establishes that states sharing a common language are more likely to maintain alliance ties, particularly evident in defensive alliances. The second paper delves into how a shared language among two or more states influences alliance design. The proposed *Sociolinguistic Theory of Alliance Design* posits that states with a shared language have a higher likelihood in opting for alliance features that do not encourage credible commitments when compared to states without a shared language. Achieving credible commitment-enhancing designs also entails a more strenuous negotiation process among language-sharing states, compared to their counterparts that do not share a common language. Four out of five alliance design dimensions among states sharing a language demonstrate these tendencies, with one anomaly that is also explainable. The third paper addresses the question of how a shared language might impact the likelihood of premature alliance termination. The findings suggest that alliances involving states sharing a language tend to be shorter-lived. These results stem from the multifaceted role of language—functionally aiding communication while also carrying a heuristic function that influences alliance sharing, design choices, and duration in both expected and unexpected ways. This research contributes to International Relations scholarship in several ways. It introduces language as an often-overlooked variable in military alliance literature. It bridges a gap in the literature's paradigms by employing the rational choice methodology to substantiate the explanatory power of language—an element more associated with constructivist scholarship.

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Chapter 1

Introduction

International relations scholars have long debated the extent to which culture and identity, however broadly defined, affect the conduct of international affairs. Within the field, however, studies related to culture and identity have largely been limited to a paradigmatic divide. The dominance of realism of all kinds and neoliberalism of various shades as well as the common applications of the rational choice framework for most of the discipline's history have kept those interested in culture and identity to the periphery of scholarship. With the social turn of the discipline in the early 90s, culture and identity have started to claim their place in the literature and received wider attention among the students of international relations. Still, the boundary of the discussion on culture and identity has limited its explanatory application to a group of scholars, despite the increasing influence they have garnered. Rarely would we see a cross-paradigmatic adoption of culture and identity as explanatory variables that pervade the underlying assumptions of how the world works. Those who believe that power and material dictate the outcomes of the international system care little about culture and identity. On the other hand, scholars who believe that culture and identity matter have not been able to prove their claims by using academic approaches and research methods that resonate with the former group.

Furthermore, among scholars who realize the importance of culture and identity, the concept is largely treated as a black box that has rarely been unpacked and scrutinized by their different elements. One such element is language. It is difficult to deny the importance of language in our everyday life. We use it to com-

municate our emotions and desires across to the intended audience. Yet, language matters more than simply its content. It signals our experiences and worldviews to the audience, even if we do not intend to. Rita Mae Brown, a celebrated American novelist and a civil rights activist, captures this quite appropriately in her words, "Language is the road map of a culture. It tells you where its people come from and where they are going."

Our connection with language and the role it plays in our life beyond communication can perhaps be illustrated by the following simple scenario. Imagine your time living in a foreign country where very few people speak your mother tongue. You can communicate with the locals in your second language. Naturally, the setting is still foreign to you. The people you tend to gravitate towards and enjoy socializing with would most likely be those speaking your most familiar language, whether they are from your country or the locals who have mastered your first language. Your connection and conversation with these few people who share your native language would be much smoother, given the similar understanding of jargon, jokes, and slang that are particular to the language. The better his or her at speaking the same language as yours, the more comfortable you would feel in getting acquaint with the person. This maybe an experience that many people can identify with because language is never simply a communication tool. It psychologically affects the attraction and the perception of the person whom you share a language with.

Within the IR discipline, where state is usually the main unit of analysis, language has not been much of a focus, despite the fact that is extremely important in the conduct of international affairs. Even within the subset of the discipline that view culture and identity as having an important explanatory power, language has received little attention. Worse still, among scholars who hold power and material as central to their explanations of IR phenomenon, language and its role have largely been neglected.

As a major research tradition within the IR discipline, the scholarship on formal military alliance has been robust and productive. It has received a significant push with the release of the Alliance Treaty Obligations and Provisions (ATOP) data set (Leeds et al., 2002). To date, at least 800 published studies have used the data set in some fashion. However, many of the most cited empirical studies on military

alliance have been dominated by scholars who put a lopsided emphasis on readily quantifiable power- and material- related variables. Culture and identity, let alone language, have only been treated only cursorily, if at all.

This dissertation attempts to redress this void in the IR discipline and in the military alliance literature, in particular. Because language plays an important role in military alliance affairs, it deserves to be studied with careful attention.

In this dissertation, I investigate three connected puzzles related to the role of language in military alliance affairs, namely 1) how a shared language among two or more states influence the likelihood that states maintain alliance relations, 2) how states that share a language design their alliance, and 3) how a shared language affects the likelihood of alliance termination through violation of the terms. In doing so, I attempt to bridge the paradigmatic divide in the literature by proving the explanatory power of language, a variable that is more commonly used in constructivist scholarship, in a way that engages with the rational choice agenda methodologically and substantively.

The dissertation proceeds in a three-paper format. The first paper (Chapter 2) argues that when countries share a language, defined as sharing the same official language, they have a higher likelihood of sharing an alliance. I develop a statistical model to show that my argument is valid and explains that a shared language creates a presumption of shared interests, which leads states to want to cooperate. I argue that language operates through two pathways. Firstly, there is a *heuristic* role that language plays. If we share the same language with our counterpart, then we have a preconceived notion that we should also share some other common interests. In military alliance affairs, language represents a window to the counter-party's worldview and how that state may behave in the future. In other words, a shared language helps make clear the shadow of the future. Secondly, language has a *functional* role as it is a medium through which we communicate our requirements to the counter-party. A shared language eases this process, making the cooperation smoother and deeper. Because of these twin roles of language, we witness a higher likelihood that two or more states whose official language is the same will also share alliance relations.

But a common language is not always advantageous when states decide to formalize their military cooperation. The second paper (Chapter 3) addresses

this seemingly counter intuitive phenomena and constitutes the detailed part of this project. Here, I develop and explain the *Sociolinguistic Theory of Alliance Design*. This theory posits that while states with a shared language are more likely to enter into alliances, the process of achieving credible commitment clauses for these alliances tends to be more burdensome. This means that states with a shared language may end up picking a design that does not ensure credible commitment, or if they end up with robust design features that contains credible commitment-inducing features the negotiation process would be more strenuous. This is because a shared language has a *heuristic* role that works to affect the cost-benefit calculation and create a presumption of shared interests, which become a drag on states' likelihood of achieving credible commitment designs. A state may end up with a softer design of its alliance because it believes the counter-party will come to its aid in an event of conflict anyway due to such a presumption of shared interests so it sees less necessity to the sign an agreement that elicits credible commitments, which would be costlier to maintain. However, language also has a *functional* role that allows for communication in alliance affairs to take place more easily for those member states that share a language. This second role of language is more favorable to states' effort in achieving a formal agreement with credible commitment clauses.

The *heuristic* and *functional* roles work in opposite directions for alliance design. On one hand, language's *heuristic* role leads to more difficulty in arriving at credible commitment-eliciting alliance design choices. On the other band, language's *functional* role encourages states to achieve credible-commitment design choices among states that share an official language. These different effects are observed in different features of the alliance design. Features that do not require active, routine communication among signatory parties such as the restrictiveness of *Membership Rules*, the broadness of *Scope*, the complexity of *Formal Rules*, and the level of *Rigidity* tend to drag states into wanting to default on the design choices that minimize cost and do not elicit credible commitments, i.e. a lower level of the restrictiveness of membership rules, a lower level of broadness of scope, a lower level of complexity of formal rules and a lower level of rigidity. Because the similarity of language among the negotiating parties has no real value-added benefit in the routine working of these features, we observe the effect of language's

heuristic role being at play. However, for the level of *Centralization*, which is a feature whose daily operation requires active, routine communication, a shared language results in a design choice that indicates a deeper level of cooperation, i.e. a higher level of centralization. This is because for *Centralization* a shared language can deliver actual benefit through its *functional* role, thus the barrier to cooperation is lowered and this nudges the states to choose the design choice that indicates a stronger form of cooperation.

A shared language creates a presumption of shared interests that oftentimes turns out to be false and that is when alliance tends to break apart. The third paper (Chapter 4) explores whether alliances among member states that share an official language would be expected to last longer than alliances among member states that do not share a language. In this paper, I argue and demonstrate that, in fact, the alliances among member states with a shared language tends to be shorter-lived. Specifically, I found that an alliance of which all the member states share the same language is associated with 138% increase in the hazard of opportunistic abrogation, compared to an alliance among members that do not share a language.

Through these three papers, I contribute to the advancement of the IR discipline in at least two ways. Firstly, at the grand theory level, I bridge the paradigmatic division by showing that language matters in how states behave in the international system and, by extension, how culture and identity should be taken seriously by IR scholars, particularly by those who have put more emphasis on power- and material-related factors and whose methods of choice tend to involve large N analyses. I employ language, a variable that is often seen as foreign and irrelevant to the analytical lens of many influential IR studies, and engages the literature through methods and substances that are palatable to the rationalist scholarship, a dominant approach in the discipline. Secondly, as a mid-range theory, I develop a claim that a shared language matters in military alliance affairs, but not always in a way that a constructivist, driven by their focus on identity, may have expected. A shared language encourages military alliance relations, but it leads to more difficulty in achieving alliance design choices that elicit credible commitment and increases the likelihood that an alliance would end up with non-credible commitment-inducing designs. And an alliance whose member states

share a language tends to break down through a violation of terms more easily as the presumed shared interests, originally signaled by the shared language, turn out to be false.

Chapter 2

Shared Language and Alliance Sharing

2.1 The First Puzzle

Despite the fact that much of the on military alliance has focused on theorizing and empirically testing for the causality of alliance relations among states, the majority of the efforts have overwhelmingly been put towards understanding material variables and their effects on alliance formation and presence of alliance ties. For example, many scholars have argued and shown that states tend to form formal alliances when they face external threats (Morrow, 1993; Walt, 1985, 1997; Gibler and Wolford, 2006; Johnson, 2017). Others have investigated how foreign policy interests (Morrow, 1994; Smith, 1995), regime type (Simon and Gartzke, 1996; Leeds, 1999; Lai and Reiter, 2000; Leeds et al., 2002; Gibler and Wolford, 2006), domestic political factors (Mattes, 2012a; Horowitz et al., 2017), reputation (Gibler, 2008; Crescenzi et al., 2012; Narang and LeVeck, 2019) and trade (Fordham, 2010; Poast, 2013), affect states' decisions to engage in alliance commitments.

However, ample questions still remain on how social variables—operated through cognitive mechanism—such as ideas, culture, identity, values, reputation, among others, influence states' behavior in establishing alliance ties. Notable scholarly progress on this front has been on discerning the influence of past reputation on alliance formation among states (Gibler, 2008; Miller, 2012; Crescenzi et al., 2012). Yet, other elements in this category of explanation require further attention by international relations scholars. This chapter aims to fill that void in the scholarship

by investigating the effect of cultural identity on alliance formation and alliance ties. Specifically, the chapter focuses on language, an important element of cultural identity, and how similarity in language among states affect their decision to commit to a formal military alliance. In seeking to answer this main puzzle, we can also compare the effect of language on alliance relations and the effects of other elements of cultural identity such as ethnicity, religion and colonial history. Additionally, the effect of shared language may not be the same for each type of alliance agreements. As such, this study aims to discern the effect of shared language on the two main types of alliances, i.e. defensive and offensive, as well.

2.2 Summary of the Argument

I argue that cultural identity matters in states' decision to maintain alliance ties. I define cultural identity as a function of language, religion, ethnicity, and historical colonial ties. And among these elements of cultural identity, language matters the most in affecting states' decisions to maintain alliance ties. Such an effect of language is particularly salient for defensive alliances.

We observe this phenomenon because, according the social identity theory, human beings tend to favor those who are like us and that we seek to promote those shared identities. Taking stock of the constructivist world view, states—as collectives of people with leaders as their agencies—behave in a similar manner in the international arena. States are groups of people whose national identities are formed through a national building process. When they interact in the international arena, they tend to seek out those who share cultural similarities to cooperate with.

While this explanation applies to various dimensions of cultural identity and their effect on international cooperation, it is incomplete. In fact, language operates through two additional pathways that has made it most salient, among the different dimensions of culture, in affecting how states behave in the international system.

Firstly, a shared language operates through a *heuristic* pathway by influencing how states perceive their counterpart and calculate their mutual interests. With a shared language, states believe, correctly or not, that they also share interests and

goals. A shared language acts as a signal for perceived cooperative behavior from the counter party. This process is largely psychological. In the realm of military alliance, this heightens the perception that the potential partner share security interests and goals, and thus encouraging the two parties to engage in formal alliance ties. Language has the effect that it does because it is so important to the national building process. It is the identity that precedes the development of other national identities.

Secondly, the effect of language also operates through a *functional* pathway, meaning that states value the fact that they share a common language with the counter party as a tool that helps lower the transaction cost during negotiation and implementation of the alliance. Therefore, states that share a similar language, operationalized as having the same official language, have higher likelihood of maintaining alliance ties, compared to states that do not share a language because, unlike other dimensions of cultural identities, language actually has a role to play and directly affects the cost-benefit calculation of the alliance maintenance process.

Because of these reasons, a shared language between states increases the likelihood that they will share an alliance and its impact is most salient when compared to the effects of other dimensions of cultural identity. Furthermore, the strength of language in defining states behavior in the international arena leads them to engage more in defensive alliances, than in offensive alliances as a way to not only defend their counterpart that they share an identity with, but also to protect that identity.

2.3 Theories on Alliance Formation

I define military alliances, following active scholars in the field, as "written agreements, signed by official representatives of at least two independent states, that include promises to aid a partner in the event of military conflict, to remain neutral in the event of conflict, to refrain from military conflict with one another, or to consult/cooperate in the event of international crises that create a potential for military conflict" (Leeds et al., 2002). Any student of international relations would agree that military alliances are important legal instruments that have shaped international politics. For this reason, attempts to understand how military alliances

are formed and maintained have been central to many puzzles explored by international relations scholars.

Scholars point to several important factors that have significant influence on states' decisions to form formal alliances. Many studies focus on, or incorporate threat into their analyses. Walt (1985; 1997) challenges the dominant thinking among the realists (Gulick, 1955; Waltz, 1979) that states choose to ally with or balance against the most threatening power, rather than simply the most powerful state. Morrow (1993) argues that in the face of a looming threat, a state makes trade-offs between arming itself or forming an alliance based on weighing costs and benefits of both strategies that involves domestic audience consideration as well. Even enemies sometimes ally to balance against a common threat, but the weaker states will commit high proportion of resources to fighting than the stronger states (Niou and Zeigler, 2019). Other scholars who have included some measures of threat in their empirical analyses see mixed results in discerning the relationship between threat and alliance formation (Lai and Reiter, 2000; Leeds et al., 2002; Gibler and Wolford, 2006; Gibler, 2008). Johnson (2017) contests that the discrepancies of these empirical studies are the result of the fact that their measurements of threat do not correctly proxy for the presence of external threat. When threat is operationalized as the probability of the threatening power winning in a future conflict, then threat performs consistently as an indicator of alliance formation.

Shared foreign policy outlook is another recurring theme in the studies on alliance formation. Morrow (1994) theorizes that states form alliances when they believe their potential allies would intervene against a common threat and that states that share policy goals would be more likely to ally. He also claims that major powers are also more inclined to form alliances because of higher marginal capabilities gained from partnering. Similar to Morrow, Smith (1995) and Snyder (1997) claim that a commonality of interests encourages alliance formation and they do that because it increases the expected payoffs. Shared foreign policy interests have also been incorporated into the studies focused other concepts. For example, Leeds and Savun (2007) use foreign policy similarity as part of their measurement of external threat in their studies of alliance termination and Crescenzi

et al. (2012) employ similarity in alliance portfolio in their studies on the effect of reputation on alliance onset.

The linkage between domestic politics and alliance formation has also been of interest to many academic studies. Scholars have explored whether democratic dyads ally more often, than non-democratic dyads. Simon and Gartzke (1996) argue that democracies tend to ally less with each other, than highly autocratic states. In general, they contend that states are more likely to ally with states of opposite regime type. In their influential work, Lai and Reiter (2000) shows that states with a similar regime type are more likely to ally, but only after 1945. However, there is no significant difference in the democratic dyads or autocratic dyads in their likelihood to ally. The authors posit that this is because in the post-1945 period, major powers were recognizing that the ideological tension in the bipolar world was taking place in different geographical locations and conflict domains, globally. Thus, the superpowers were seeking to create their respective alliance networks in order to protect their interests, based on ideological grounds. On the contrary, Gibler and Wolford (2006) contest Lai and Reiter's (2000) findings by arguing that the inconsistencies in this line of scholarly studies rest upon the differences in the research design. He separates between the two events of interest: alliance formation and an alliance tie. Alliance formation is the particular event that happens when two states come together to formalize their military partnership. An alliance tie is the presence of alliance relationship in any given year. Gibler shows that when alliance formation is the dependent variable, then democracies are not not likely to ally. But when the presence of an alliance tie is the dependent variable, then democratic dyads tend to ally. Lai and Reiter (2000) challenges further by Leeds et al. (2002) who uses a different data set and shows that democracies are likely to ally prior to 1944 as well and not merely post 1945 period.

Because domestic politics means more than just similarity in the regime type between dyads, scholars have also explored the relationship between the internal political affairs of the country and its leaders' decision to formalize security agreements. Mattes (2012a) looks at different types of alliance and concludes that when a potential successor of the incumbent government shares the same political preference then the state tends to choose a consultant pact that is more flexible and

less costly to maintain. However, when the leadership is about to lose power to the opposition, then the incumbent would choose to ally through a defense pact that commit the potential successors to work closely with the ally. Horowitz et al. (2017) demonstrates that a state is more likely to form an alliance if it has instituted a military conscription system in the past five years because the policy suggests that the state is a dependable ally.

Economic linkage among states is another topic that scholars has attempted to establish its role in the military alliance affairs. While several studies look at how security cooperation leads to increased cooperation in the commercial sphere (Long and Leeds, 2006; Haim, 2016; DiGiuseppe and Kleinberg, 2019), the linkage in the reserved direction has also received some interests among alliance scholars. They posit that economic interdependence is an important driver in the decision to form an alliance. For example, Fordham (2010) shows that trade increases the probability that asymmetric dyads would form an alliance and decreases the probability of alliance termination. Poast (2013) finds that adding trade stipulations into the potential agreement improves the likelihood that the negotiation for the alliance would be successful.

Last but not least, an area of alliance formation studies that has received ample interests is the relationship between reputation and alliance formation. Gibler (2008) claims and shows that states with history of reneging from alliance commitments will be less likely to form new alliance in the future. Crescenzi et al. (2012) provide further evidence that support that past alliance behaviors, specifically a reputation for honoring agreements, affect the future likelihood for alliance formation. Despite this, states with poor reputation still form alliances throughout history. As such, Mattes (2012b) demonstrates that states design an alliance to account for the belief that their ally with a history of alliance violation, may not honor the agreement. Narang and LeVeck (2019) investigate why states ally with a partner with poor reputation at all. They conclude that this is part of an alliance portfolio diversification strategy and that an unreliable state tends to get pooled into a multilateral alliance than a bilateral alliance in order to manage risk.

Having reviewed past scholarship on alliance formation, it should be easily noticeable that scholars who are interested in investigating factors that encourage states to form alliances have left a major void in the literature. Very few studies

pay attention to how culture operates in the world of military alliances. While Lai and Reiter (2000) and follow-on studies that replicate their research design (Gibler and Wolford, 2006; Leeds et al., 2002) include cultural identity—operationalized as joint language, joint religion and joint ethnicity—in their models, their studies were meant to discern the impact of regime type and democratic development on alliance formation. Cultural identity variables are included as their controls, but without the supporting theoretical explanation of the causal mechanism. Their results indicate that joint language consistently encourages alliance formation across different model specifications. On the other hand, joint religion and joint ethnicity produce mixed results. However, they only study two sets of models, i.e. the first set using all alliances and the second set looking at only defense pacts. The extent to which scholars theorize and attempt to explain how culture identity matters, or not, in alliance formation has not been satisfactory and left ample rooms for further investigation. This chapter attempts to fill that void.

2.4 Identity and International Relations

Attention to identity and its role in the international system took off in the early 90's as a challenge by constructivist scholars against the dominant realist and neoliberal theories of international relations. The argument that identity matters is at the heart of constructivist explanations on how states behave in the international arena. These explanation rely heavily on insights from sociology and social psychology. Yet, these scholars have approached the concept in various ways.

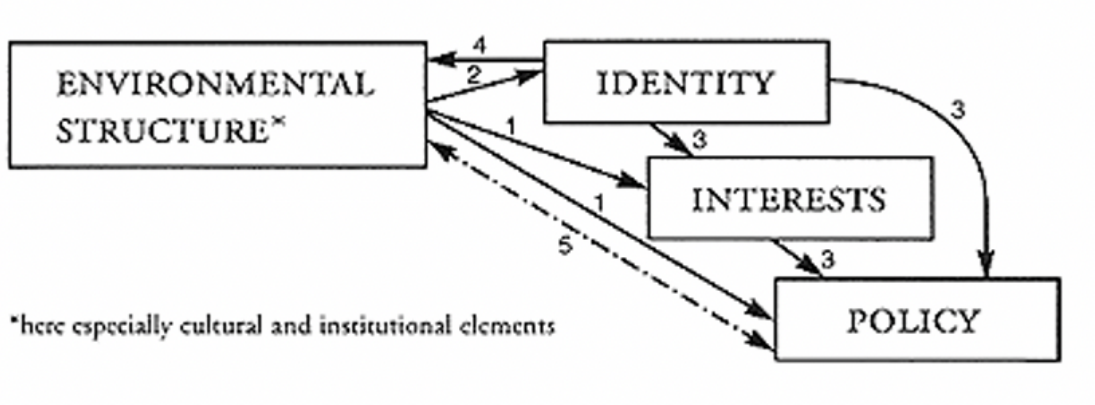


Figure 2.1: Identity-related arguments in IR literature (Jepperson et al., 1996)

Jepperson et al. (1996) summarizes the different key concepts that have been of interest to constructivist scholars. From Figure 2.1, we can see that identity appears in Pathway 2, 3 and 4. But Pathway 1 and 5 are also important because identity can function through them. Pathway 1 is when cultural or institutional elements, such as international norms, in the international environment structures affect states' interests and foreign policy. Pathway 2 is when the international environment shapes state identity. Pathway 3 is when state identity determines state interests and dictates foreign policy or when state identity affects foreign policy of a state directly. Pathway 4 is the reverse of Pathway 2. It is when state identity affect interstate normative structures such as the formation of security communities or international regimes. Pathway 5 is a two-way, mutual influence between when states' foreign policy and the cultural and institutional structures of the international system. These pathways are not mutually exclusive. Studies often engage in multiple of these pathways in order to propose certain arguments.

For example, Wendt (1992, 1994, 1999), an influential constructivist scholar, essentially explains Pathway 2 and 3 when he argues that identity and interest in the international system are not given exogenously, but socially constructed. He posits that the international system is governed by shared ideas, rather than material forces. Through the process of socialization, states can form a collective identity, which in turn can cause a state to blur the line between the interests of itself and that of others. Therefore, the concept of 'self-help', i.e. competition or conflict, is not an inevitable consequence of anarchy. Through the collective

identity, a state may then define the welfare of others as part of its own, allowing them to overcome collective action problems and cooperate.

While Wendt (1992) claims that the concept of 'self-help' is not necessarily the result of anarchy, Mercer (1995) contends that rivalry is an inevitable phenomenon in the international system because states are essentially groups based on a multi-facet of national identities and the identification with their own groups encourages competition. Unlike Wendt who sees identity formation as a social process, Mercer explains how identity fits into the international system in terms of cognitive behavior. Mercer arrives at this conclusion by drawing on lessons from the Social Identity Theory (SIT) that is first posited by Tajfel and Turner (1979), which argues that we tend to favor those who we see as part of the in-group and discriminate against those we consider as belonging to the out-group [1]. Similarly, states are comprised of groups who compare themselves to other states and seek to promote self-esteem. This leads states to define their interests in an egotistic manner, creating competition with other states. Therefore, a 'self-help' world is inherently unavoidable. In this sense, we can see that Mercer starts with Pathway 4 by claiming that states are groups with certain identities and their engagement with the international environment inherently creates comparisons that can lead states to promote self-interests (Pathway 1), which in turn necessitates competition with other states, particularly those we do not identify with (Pathway 3).

The works of these two scholars (Wendt, 1992, 1994, 1999; Mercer, 1995) are important contributions that spawn further research on how identity is integrated into IR scholarship. The collective identity notion by Wendt lays the foundation for the research on security communities (Adler and Barnett, 1996; Adler, 1997;

[1] SIT is developed through psychological experiments in order to discern minimal conditions that are essential to elicit intergroup discrimination. The experiments by Tajfel and Turner involved a minimal categorization by asking the participants to estimate the number of dots on a slide shown to them. They were told that half of them underestimate and the other half overestimate the number of dots and that served as the basis for the division of the participants into two groups. The participants were then asked to perform a series of experiments to see how they behaved towards those in their group and towards those in the other group. Tajfel and Turner found that when individuals tend to favor those that are in their group, even if the grouping criteria was made up. Moreover, they tend to discriminate against the participants in the other group. Extending this finding to real world situations, Tajfel and Turner argue that the categorization of ourselves into groups require comparisons that necessitate competition with those we do not identify with.

Adler et al., 1998; Wæver, 1998; Adler, 2008), regional integration (Acharya, 2000, 2001; Risse-Kappen et al., 2004; Delanty, 2005; Risse, 2005), socialization effects on identity (Checkel, 1999; Risse-Kappen, 2016), among others. Mercer's adoption of SIT in IR has inspired further research, which helps refine the concept and its use in IR. For example, while Mercer predicts that identity makes the world inherently competitive due to the fact that groups will tend to positively promote their self-esteem, Gries (2005) argues, using a case study on China that this is not always the case as there are other identity management strategies to achieve a positive identity without having to compete. SIT has also been used to understand status-seeking behavior of challenging powers, particularly for China and Russia (Larson and Shevchenko, 2003, 2010, 2014; Malinova, 2014; Paul et al., 2014; Evans, 2015; Larson, 2015; Ward, 2017; Larson and Shevchenko, 2019), war and peace (Herrmann et al., 2009; Payne, 2015), cooperation (Cronin, 1999), and threat perception (Rousseau, 2006).

While the study of identity in international relations spans across the last three decades and continues to receive robust interests, much of the attention has been paid to understand how identities are formed from both the intra-country angle, i.e. how the international environment influences the formation of certain identity of a state, and the inter-country angle, i.e. how identities are developed among groups of states in the international system. In other words, these scholars focus on the more abstract forms of identity in what Wendt (1992) would describe as 'role' and 'collective' identities. Role identity exists only in relations to others. It is not intrinsic to characteristics, but represents a position in the social structure that only exists relative to another counter-identity. For example, Wendt points to the intimate relationship between Arabs and Israelis. Both see each other as the greatest existential threat and their role identities cannot be easily abandoned because they are dependent on how groups perceive each other. The relative positional identity to others is the "Me", i.e. how the actor sees itself through the eyes of other actors. Collective identity is when the line between self and other become blurred through some overarching identity. Two countries may share different characteristics in many ways, but through the socialization process in the international arena they may be able to build an encompassing characteristic that merges them into a single identity.

But Wendt has two other categories of identity, i.e. 'corporate' and 'type' identities. Corporate identity is self-organizing and is independent of how others may perceive that actor. It comes about through the mechanism involving consciousness and memory that culminate in a sense of "I" and is the site of other identities. Type identity is a social category that is applied to a particular shared characteristic, which can be in terms of values, attitudes, experiences, skills (e.g. language), among others. But it must have social content and meaning, thus it is simultaneously self organizing and social organizing.

It may seem surprising to many, but little interests have been devoted to the study of how the latter two categories of identity operate at the international level. While they are less abstract and easily objectively measurable, corporate and type identities appeal less to scholars who may wish to undertake what they believe are more worthwhile scholarly endeavours. This has left a void in the literature. With the exception of Bloom (1990), who proposes the 'identification theory' to explain how national identity influences foreign policy decision making, corporate identity's effect on state's international behaviors has rarely been studied. Type identity, too, have been overlooked by past scholars. Despite Lai and Reiter (2000), Gibler and Wolford (2006) and Leeds et al. (2002) having included language, religion and ethnicity as control variables in their models to study alliance formation, they have not theorize or explain the mechanism on how these identity-related variables may affect alliance formation.

This chapter aims to fill part of this gap in the literature as it seeks to investigate how shared language affects states' tendency to form alliances. The scope of the study is limited to shared language as opposed to attempting to explain all dimensions of cultural identity. I categorize shared language as a form of 'type' identity and it is an element of cultural identity, along with ethnicity and religion. Cultural identity in turn is a subset of social identity.

2.5 Shared Language and Alliance Formation

Before proceeding, I take stock of the assumption and past literature that a state's cultural identity arises from a process of contests and negotiations among various

domestic groups (Bloom, 1990; Kowert, 1998; Wendt, 1999). I also rely on the concept of state as a person and see it as a useful analogy to understand relationships among states in the international system (Wendt, 2004). These two key existing arguments in the inventory of literature serve as the foundation for the argument presented in this chapter.

I argue that a shared language among states increases the likelihood that they share alliances and that its effect is more clear in defensive, rather than offensive military alliances. In defending this, I present my argument in a format found in Figure 2.2, which is an adapted version of the diagram from Jepperson et al. (1996). My argument follows Pathway 4, Pathway 1A, Pathway 3 and Pathway 1B, presented below.

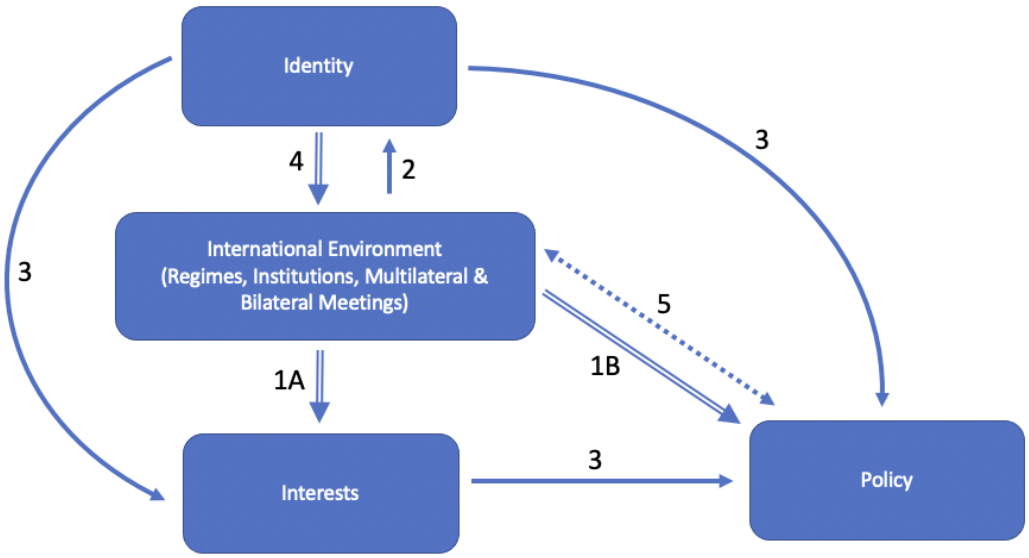


Figure 2.2: Identity-related arguments in IR literature, modified from Jepperson et al. (1996)

The focus of my argument is on a kind of identity that is less malleable, and more fixed in nature. They do not change much over the course of history of a particular state. This is unlike most forms of identity that are mutable and only exist after states' socialization with the international system, which is a type of

identity that most IR scholars are interested in. These largely permanent identities, e.g. language, religion, ethnicity, and colonial history, and their effects on international behaviors of a state have not been given the attention they deserve by IR scholars. But they should be studied more vigorously because if identity is too mutable it has no significance and is epiphenomenal to other things.

These fixed identities, particularly language, do matter. As a result of deliberate comparisons, historical contests and active negotiations among different groups inside its boundary, a state arrived at selecting its official language and started signaling that decision to the international arena. The national language identity in this sense exists independently of, and prior to, the socialization process in the international system because the official language was selected from among many options. Using Wendt's terminology, different groups within the boundary of a state exhibits a 'corporate' identity that is self-organizing. Each group then compares, contests and negotiates with one another during the nation-building process to arrive at a 'type' identity that forms a new social category, which helps define people from that particular state. The fact that the elite went through the deliberate process of agreeing on one, or more, official language helps create this national language identity that is independent of, and prior to, the state's engagement with other countries in the international setting.

However, the fact that, for most states, language identity is largely fixed over time presents another challenge. A national language identity barely varies throughout the course of a state's history. This in turn means that we do not observe the with-in case variation that would make it easy to discern how a change in language identity affects a state's decision to ally with other states. However, this does not mean that a shared language between states is not an important factor in states' decision to engage in alliance relations. Because of this, we need to distinguish between an alliance formation as an event and an alliance relationship that is maintained over the course of the history of relations between the two states. I limit my argument here to claim that states that share an official language are likely to share a military alliance relationship.

Having established that the dimension of cultural identity of interest in this chapter is language and that it exists prior to the socialization process among states in the international arena, we then turn to the question of why states, from

a sociological perspective, have a tendency to venture out to socialize and engage with each other? And what happens when they do?

Tajfel and Turner's argument on Social Identity Theory (SIT) is most useful in this regards Tajfel and Turner (1979). SIT predicts that the group will seek to positively promote their identity to increase their self-esteem. Tajfel and Turner rely on sociological psychology to explain these phenomena. SIT also claims that individuals favor those who they perceive as being in the in-group and discriminate against those who are in the out-group. The rules that define the in-group and out-group come in various forms, but the effects would be the strongest for the identity that is most salient. I argue that a state, as a collection of individuals and groups, follows a similar mechanism in its engagement with international actors. Past applications of SIT to international relations have seen some scholars (Mercer, 1995) claim that this will inevitably create competition, while others believe such competition could be minimized (Gries, 2005).

Following Figure 2.2, Pathway 4 is explained by SIT which–when applied to the state-level unit of analysis–predicts that states will venture out into the international arena to positively promote their identities. While this will inevitably lead to competition in some cases, states will discover that they do share certain identities with one another during the international socialization process. Such discoveries will mitigate those competitive behaviors and, for some salient identities, will encourage cooperation. In fact, as SIT would predict, the phenomenon is beyond a passive discovery of shared identities; but because states are groups within which they share identities, they will actually seek out other groups with similar identities to cooperate.

While SIT helps create the international context that is more conducive to cooperation among states with shared identities, it is not quite the same as saying that shared identities encourage states to formalize their military cooperation. When cooperation materializes into a formal agreement, it signifies a high-status form of cooperation because it demands strong commitments from the signatories. Furthermore, even if cooperation among states translates into formal agreements, the effect of different dimensions of cultural identity, e.g. language, religion, ethnicity or colonial history, may not be of the same magnitude. This is what makes

language uniquely important. Using military alliance relations as examples, I argue that a shared language is the most salient cultural identity in affecting states' decision to maintain alliance relations.

We observe this phenomenon because language operates through two additional, more rationally-oriented, mechanisms that play important roles in shaping states' foreign policy decision-making. The two mechanisms follow Pathway 1A and 1B in Figure 2.2.

Firstly, through Pathway 1A, a shared language takes a *heuristic* route in influencing states' decision to maintain a formal alliance. That *heuristic* route exists because language serves as a signal for states to know what to expect from each other. Language represents a window to its counterpart's worldview and how that state may behave in the future. In other words, a shared language helps make clear the shadow of the future. Furthermore, language is often seen as the most salient and robust identity identification of human beings (Giles et al., 1977; Giles and Johnson, 1981, 1987; Giles and Powesland, 1997; Gumperz, 1982; Joseph, 2004; Ryan et al., 1984; Sachdev and Bourhis, 1990, 2005). It is the conduit through which other identities are built on and, as such, it precedes all other identities. Because of its relative importance in identity formation, sharing a language should serve as a strong signal of shared interests, leading to an assumption of future behaviors of its counterpart. When they believe in a shared future, they take more of their counterpart's interests as their own, which affect how they define their interests. This shift in the calculation of interests, as indicated by the port of Pathway 3 that links 'Interests' and 'Policy', leads to a policy that encourages states to engage in a higher form of cooperation, and one example of that is a military alliance agreement.

Secondly, through Pathway 1B, language also operates through a *functional* route, meaning that states value the fact that they share a common language with the counter party because language is a tool that helps lower the transaction cost during negotiation and implementation of the alliance. Unlike other forms of cultural identity, e.g. religion and ethnicity, a shared language is actually useful in assisting with communication. Unlike the mechanism in 1A, in this 1B route, the interests of a state are not altered. A shared language directly encourages a higher form of cooperation because it is easier, cheaper to do so and that high

form of cooperation happens more frequently. For a military alliance perspective, therefore, two states that share a similar language have higher likelihood of being in an alliance, compared to states that do not share a language.

From these mechanisms, we have arrived at our first hypothesis as follows.

Hypothesis 1. *States with a shared language have higher likelihood of having alliance ties.*

A shared language matters in states' decision to maintain a formal alliance. It operates in three ways. The fact that two states share a common language, defined as sharing an official language, helps encourage cooperation. We witness this behavior because, as predicted by SIT, states that carry certain socially-induced group identities would tend to positively promote those identities and show an in-group favoritism, therefore leading them to cooperate better when they share a language. However, this mechanism happens through sharing other identities, such as ethnicity, religion and colonial history as well, and is not unique to language identity. What makes language the most salient in affecting states' decision in maintaining a military alliance is the fact that it operates through two additional pathways, through a *heuristic* route when a shared language works through a subconscious level of influence and alters the calculation of interests in favor of those who share the similar trait, and through a *functional* route when a share language plays an actual useful role in facilitating better communications. In the latter case, interests do not shift, but the transaction cost is lower, thus making it easier and cheaper to form an alliance. Here, we have arrived at our second hypothesis.

Hypothesis 2. *A shared language is the most salient element of cultural identity in affecting states decision to maintain alliance ties.*

Alliances can be categorized in a few ways. Two of these categories are whether the alliance is defensive or offensive in nature. They can also exhibit both features at the same time. Defensive alliances are those agreements in which parties agree to come to defend each other when one is attacked. Offensive alliances mean parties join the offensive campaign when one member decides to attack a non-member state. This chapter also aims to test whether a shared language is more

salient in encouraging defensive or offensive alliance relationship? While Society Identity Theory focuses on how we tend to positively promote our identity and how we favor those whom we share identity with, it has not paid attention to the expectation that we should seek to defend those we share a salient identity with and we should be willing to engage in an assaultative behavior together with those we share a common identity with. Social psychologists have surprisingly not explored in great details how social identity may affect these two behaviors and how it may affect them differently. I conjecture that we tend to be more willing to defend those who are similar to us, than to offensively attack someone in our out-group first. This makes logical sense. Imagine a case where a group of children who speak a minority language goes to an English speaking school. Would we expect the children to pick fights and attack those who speak different language than they do? Probably not so automatically. But a much more plausible scenario would be that the minority children come to defend each other when one of them is attacked. I argue that this also applies to military alliance behavior among states. States that share a common language will have higher likelihood in forming defensive alliances than offensive alliances. We have arrived at our third hypothesis as follows.

Hypothesis 3. *A shared language is more salient in affecting the decision to maintain a defensive alliance than an offensive alliance.*

In the next section, I will discuss the research design in testing these hypotheses.

2.6 Research Design

2.6.1 Dataset

To investigate the hypotheses, I extend on the dataset from Alliance Treaty Obligations and Provisions (ATOP) project (Leeds et al., 2002) to include variables that capture share identities between the states and other potential explanatory variables that might explain the presence of alliance ties. Specifically, I use the 4.0 version of the ATOP dataset that is arranged into a non-directed dyad-year format. I select part of the data that contains a pair of states in the international

system from 1914 until 2016 in each row. Each dyad-year datapoint has information on whether the pair of states share one or more alliance, as well as the types of alliance that they share. In total, the original ATOP dataset contains 892,027 dyad-year samples.

2.6.2 Dependent Variables

For Hypothesis 1 and Hypothesis 2, there are two main dependent variables of interest. The first dependent variable of interest is a binary variable that indicates whether the pair of states share one or more alliance in that particular year. Of all the dyad-year samples in the original ATOP dataset, 7.64% of them share an alliance in a form of defensive alliance, offensive alliance, neutral pact or consultation pact. Non aggression pacts are not included in the definition of a formal alliance because it does not require an active engagement between parties. The second dependent variable of interest is not available from the original dataset, but is newly coded as a binary variable to indicate whether that year the pair of states forms a new alliance or not. Only 0.54% of all the dyad-year samples in the original ATOP dataset is coded as the dyad-year when a new alliance is formed.

For Hypothesis 3, there are two dependent variables under investigation. We will need to compare the model in which the presence of defensive alliance relations is the dependent variable to another model which uses the presence of offensive alliance relations.

2.6.3 Independent Variables

For all the hypotheses, the independent variable of interest is a binary variable that indicates whether the pair of states share a common language that year. This is operationalized as whether the two states share the same official language. I define an official language as the language that the state recognizes as such. However, some times a particular state may have more than one official language, while others have none. For example, South Africa has 11 official languages, while the US has none. For these cases, I consider the language that is natively spoken most widely in that state. For South Africa, this is IsiZulu and, for the US, this is English. Then, the official or most spoken languages attributed to each state

in the dyad-year datapoint are matched to see if they are the same. If they are, then the variable is coded 1 and if they are not then the variable is coded 0. The language information is obtained from Ethnologue database by SIL International (Simons, 2017). Of all the dyad-year samples in the dataset, dropping all the missing language data, 6.81% share a common language.

To test Hypothesis 2 in particular, we need to add an indicator of shared ethnicity, shared religion and shared colonial history for each dyad-year datapoint. I obtain the ethnicity data from the Ethnic Power Relations database (Vogt et al., 2015) in order to determine the most dominant ethnic group for each state in the dyad-year datapoint then match them to see if they are the same. A shared ethnicity variable is coded 1 if the pair share the same dominant ethnic group and 0 otherwise. The Ethnic Power Relations database contains information from 1945 onwards. As such, the ethnic information from 1914-1944 is assumed to be same as in 1945. This is a viable assumption given that the majority of the ethnic group that is most dominant in a given state remains the same group from 1945 until the present. Based on this coding rule, and after accounting for the missing data, 3.63% of the dyad-year samples share the same ethnicity.

To capture whether the pair of states share the same religion, I define sharing a religion as a condition in which the religion with the largest group of followers is the same between two countries. I use the largest group of followers in a country as a determinant of the country's religion because many countries do not declare an official state religion. To obtain this information, I rely on the *Religious Characteristics of States* dataset (Brown and James, 2018) with supplemental information from *Demographic Statistics Database* (UN Statistics Division, 2018), and The World Factbook (CIA, 2018). After considering the missing data, 15.58% of the dyad-year samples share the same religion.

For shared colonial ties, I match each state's colonial history with each other. For colonies that have more than one colonizer, I select the latest one before independence. I rely on the ICOW Project's *Colonial History Data Set* (Hensel and Mitchell, 2007). If the pair of states share the same colonizer, or if the colonizer is one member of the dyad and the other member of dyad is colonized by that colonizer, then the shared colonial history variable is coded 1, otherwise it is coded

0. After accounting for the missing data, 12.91% of the dyad-year samples in the dataset share the same colonial history.

2.6.4 Control Variables

In order to ensure that the relationships between shared language and the dependent variables of interest are not spurious, several controls are included in the models. To differentiate between cultural identity variables, which are shared language, shared ethnicity, shared religion and shared colonial history, I add political regime similarity and economic development level similarity. It maybe possible that the political regime similarity would encourage the formation and the presence of military alliance between states. For example, Lai and Reiter (2000) demonstrates that states with a similar regime type are more likely to ally with each other and there is no significant different between different regime types. Leeds et al. (2002) and Gibler and Wolford (2006) contend that democracies are more likely to ally than authoritarian regimes. To operationalize this, I use the data from *Polity IV* project (Marshall et al., 2014). For each member of the dyad-year sample, the corresponding regime type is categorized into autocracy, anocracy, or democracy. Then, if that is matched with the other member's regime type then the variable is coded 1, otherwise it is coded 0, into the data set.

For economic development level similarity, it is conceivable that countries that share the same level of development would tend to ally more. They may see each other as an in-group that share economic characteristics, either prosperity for rich countries or struggles for poor countries. For this variable, I rely on the historical GDP Per Capita data by the *Maddison Project Database* (Bolt et al., 2018) and a member of the dyad-year sample is recorded as having high, medium-high, medium-low and low income, based on the interquartile range of the GDP Per Capita data. If the pair of states in the dyad-year sample have a matching economic development level then the variable is coded as 1, otherwise it is coded 0.

External threat is a variable that has appeared frequently in studies of military alliance. The literature has long debated the causal effect on external threat to

decisions for states to form and maintain alliances. Several studies have focused external threat and have paid serious attention to it as a important factor in military alliance formation, but even results from different models within the same study are not consistent (Gibler and Wolford, 2006; Gulick, 1955; Leeds and Savun, 2007; Johnson, 2017; Morrow, 1993; Niou and Zeigler, 2019; Walt, 1985, 1997; Waltz, 1979). There are two ways to operationalize external threat. The first approach is to rely on historical militarized disputes as indicators of external threat of a state. But external threat does not always materialize into militarized disputes, so the second approach is to consider a state's threat environment that looks beyond this narrow definition. To this end, (Leeds and Savun, 2007) develops a concept to capture external threat, which has also been updated further in (Edry et al., 2021). They define external threat as a sum of the composite index of national capabilities (CINC) of all system members in a state's threat environment. To these scholars, "a system member is considered to be in a state's threat environment if it is not an ally and is either a rival, contiguous neighbor with a dissimilar foreign policy orientation, or a major power with a dissimilar foreign policy orientation. Hence, this measure captures the factors that are likely to precipitate international conflict." This second approach, however, has its own drawback. For example, India and Pakistan, defined this way, will not be in each other's threat environment as they actually are both members of a few international agreements with strong security elements, which the ATOP dataset recognizes as formal military alliances. India and Pakistan are both signatories to the Treaty of Amity and Cooperation in Southeast Asia as well as the Shanghai Cooperation Organization.

As such, I devise an operationalization method that combines both approaches, taking into account of both historical disputes between states and (Leeds and Savun, 2007)'s concept of a state's threat environment. I define a state's threat environment in a given year as the sum of composite index of national capabilities (CINC) of all the states that 1) it has engaged in militarized conflict with during the past ten years, or 2) it does not share an alliance and has dissimilar foreign policy with, or 3) it shares borders and has dissimilar foreign policy with, or 4) is a great power that the state has dissimilar foreign policy with. To operationalize this, I rely on the CINC data from the Correlates of War Project (Singer, 1988), the militarized conflict data from the Militarized Interstate Dispute (MID) 5 dataset

(Palmer et al., 2021), the shared alliance data from the ATOP dataset (Leeds et al., 2002), the contiguity information from the Direct Contiguity dataset (Stinnett et al., 2002), the great power status information from the Correlates of War Project (2017) and the s-scores that measure foreign policy similarity between states as developed by Signorino and Ritter (1999) and used by Chiba et al. (2015). A foreign policy dissimilarity is determined by whether the s-score between State A and State B, which could potentially be in State A's threat environment portfolio, is below the average s-score of State A with all the states in the system in that given year. Applying these coding rules, we will get the threat environment of that state in a given year. Because our alliance dataset is in a dyad-year format, to obtain the threat environment of the two states, we sum their respective external threat environment values together. Based on these coding rules, Pakistan will be in India's threat environment and vice versa, which fixes the shortfall of the threat environment concept proposed by earlier scholars.

The above conception of external threat is just one possibility. I add another control variable that captures a slightly different meaning of external threat. States are engaged in multiple active militarized disputes at the same time. This is the immediate threat that they are facing and could induce their decision to form an alliance. The immediate threat variable captures the sum of the number of interstate militarized conflicts that each of the dyad-year members is engaging in that year based on the information from the Militarized Interstate Dispute (MID) 5 dataset. This is an ordinal categorical variable that captures the frequency of militarized disputes the pair of states maybe engaged in. The logic applied here is that perhaps the more number of militarized conflicts they are involved in may mean that they are more likely to form a military alliance with each other.

Other controls that I have included in the models are whether the dyad members are contiguous states, whether both of the dyad members are major powers, and whether the two members of the dyad have power asymmetry, and the trade to GDP ratio of the two states. All these variables may have causal influences on a state's decision to form a military alliance.

Because the dependent variables of all three hypotheses are binary variables, the research design is structured as a series of logit regressions. Different model specifications will be used to test the robustness of the theory that shared language

matters in determining alliance presence between dyad members. The results will be presented as odd ratios, with the main aim to compare the odds of the presence of alliance ties for the two states that share a language to the odds of that outcome happening for the dyad member that do not share a language.

However, before moving forward, it is important that we check for potential multicollinearity. To do so, I create a correlation matrix of all the independent variables to check if any pair can present a problem in the analysis. As a rule of thumb, when two or more predictors have an absolute correlation coefficient of >0.7, we should suspect the presence of multicollinearity. From Figure 3.6, all the absolute correlation values are <0.7, thus we can be reasonably confident that the models will not suffer from multicollinearity.

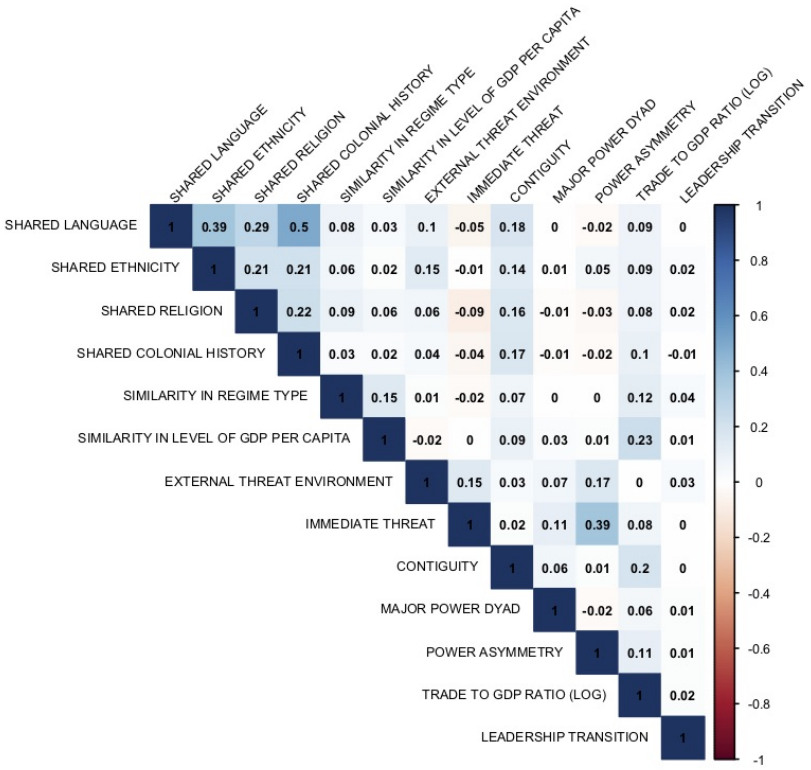


Figure 2.3: Correlation Matrix of Independent Variables

Furthermore, I check for mutlicollinearity by computing the variance inflation factor (VIF) score, which assesses the inflation of the variance of a regression coefficient in a model. A VIF score of >10 indicates multicollinearity. Based on the results of the models below, all independent variables in all the models have a VIF below 2, indicating that the models are free from multicollinearity.

2.7 Results and Discussion

The three hypotheses are largely supported by the results. Table 2.1 shows the results of Model 1, 2, 3 and 4 whose dependent variable is the presence of alliance

ties. Model 1 with *Shared Language* as the only independent variable shows that a dyad that shares a language is 16.58 times more likely to also have an alliance tie, compared to a dyad that does not share a language. This result is supportive of Hypothesis 1.

In Model 2, other shared cultural identity variables–*Shared Ethnicity*, *Shared Religion*, and *Shared Colonial History*–are added to compare their effects to that of a shared language. Here, having a shared language results in 8.85 times higher likelihood that the two states will share an alliance, meaning that Hypothesis 1 still holds true, despite more independent variables are added. With a shared ethnicity, a dyad is 4.99 times more likely to have an alliance tie, compared to a dyad that does not share the same ethnicity. Having a shared religion means that the two states are 2.09 times more likely to also share an alliance. However, states with a shared colonial history are 6% less likely to have an alliance tie, controlling for everything else. While the result is statistically significant, sharing colonial history seems to lack the substantive influence on states and their alliance ties, given that its magnitude is very small. From the results, This goes against the expectation, but is also explainable in hindsight. Given that not all colonial ties ended amicably, states that have negative colonial experiences may lack the willingness to cooperate. In any case, Hypothesis 2 is consistent with the results of Model 2 in that a shared language appears to be the most salient in increasing the probability of two states sharing an alliance tie, compared to the effects of a shared ethnicity, a shared religion and a shared colonial history.

In Model 3, control variables are added and the results still support Hypotheses 1 and 2. With the control variables, we lost some more observations due to the need to use complete cases for the analysis. Still, a shared language performs better as a predictor for the presence of alliances than the results from Model 2. With a shared language, states are 10.75 times more likely to share an alliance as well. Other control variables perform largely as expected. The results of the two measurements of external threat are noteworthy. While a one unit increase in *External Threat Environment* results in 1.65 times or 65% higher likelihood that a dyad will share an alliance tie. However, *Immediate Threat* that counts the immediate militarized disputes the pair of states are engaged in a particular year, while being statistically significant, appears to have no substantive effect on the

likelihood of two states sharing an alliance tie. Perhaps, we could conjecture that states do not always see immediate threat as a reason to sign an alliance. They give more value to the structural strategic environment rather than the tactical and immediate security needs when the leaders deliberate which allies to form. Another noteworthy result is that of *Major Power Dyad*, which captures whether both states are major powers. It appears that if the pair are both major powers, then they are 5.70 times more likely to share an alliance, when compared to dyads where both are non-major powers.

Model 4 is a robustness check. Given that all independent variables are statistically significant, I created two dummy variables whose values are randomized and the proportion of 1 is 6.8%, which is the same proportion as the number of dyad-year data points who share a language. This is to check whether the all-significant results were due to the model specifications or the large sample sizes. As the result in Model 4 shows, the two variables whose values are randomized are neither statistically nor substantively significant, giving us more confidence that the results in Model 1, 2 and 3 are robust.

Table 2.1: Odds Ratios of Presence of Alliance

	PRESENCE OF ALLIANCE TIES Odds Ratios			
	(1)	(2)	(3)	(4)
Shared Language	16.58**	8.85**	10.75**	10.75**
	(16.21, 16.96)	(8.56, 9.14)	(10.27, 11.25)	(10.27, 11.25)
Shared Ethnicity		4.99**	6.11**	6.11**
		(4.82, 5.17)	(5.82, 6.40)	(5.82, 6.40)
Shared Religion		2.09**	1.93**	1.93**
		(2.04, 2.14)	(1.87, 2.00)	(1.87, 2.00)
Shared Colonial History		0.94**	0.92**	0.92**
		(0.91, 0.97)	(0.88, 0.96)	(0.88, 0.96)
Similarity in Regime Type			2.29**	2.29**
			(2.23, 2.36)	(2.23, 2.36)
Similarity in Level of GDP Per Capita			1.69**	1.69**
			(1.64, 1.74)	(1.64, 1.74)
External Threat Environment			1.65**	1.65**
			(1.54, 1.76)	(1.54, 1.76)
Immediate Threat			1.01**	1.01**
			(1.00, 1.02)	(1.00, 1.02)
Contiguity			3.81**	3.81**
			(3.61, 4.01)	(3.61, 4.01)
Major Power Dyad			5.70**	5.70**
			(4.86, 6.68)	(4.86, 6.68)
Power Asymmetry			1.70**	1.70**
			(1.63, 1.76)	(1.63, 1.76)
Trade to GDP Ratio (Log)			1.42**	1.42**
			(1.41, 1.42)	(1.41, 1.42)
Leadership Transition			1.09*	1.09*
			(1.01, 1.17)	(1.01, 1.17)
Random Variable 1				1.00
				(0.95, 1.06)
Random Variable 2				0.97
				(0.92, 1.02)
Constant	0.06**	0.05**	0.10**	0.10**
	(0.06, 0.06)	(0.05, 0.05)	(0.09, 0.11)	(0.09, 0.11)
Observations	581,518	560,775	317,219	317,219
Log likelihood	−146,506.40	−134,005.80	−71,660.48	−71,659.80
AIC	293,016.80	268,021.60	143,349.00	143,351.60
R^2 *Tjur*	0.16	0.21	0.37	0.37

Notes: $^{**}p < .01$; $^{*}p < .05$

In Model 5, 6 and 7 in Table 2.2, the dependent variable is changed to *Alliance Formation*, meaning that the variable is coded 1 only in the year that there is a new alliance formed between two states. This is different from the dependent variable used in Model 1 to 4, which I code the presence of alliance ties in a given year. Note that the models have a very weak fit as indicated by the low Tjur's R^2 values. Any interpretation should therefore be done with caution. Given that that alliance formations are rare events in the dyad-year dataset and the independent variables capture variations at the system level, rather than temporal variations, the models are much better at explaining the presence of alliance ties, rather than the act of alliance formation. In any case, the results of Model 5-7 do not contract the earlier models or go against the theoretical explanation. Across Model 5-7, *Shared Language* are still significant both statistically and substantively, despite the decreasing magnitude as more control variables are added.

Table 2.2: Odds Ratios of Alliance Formation

	Alliance Formation Odds Ratios		
	(5)	(6)	(7)
Shared Language	4.98**	2.42**	1.28**
	(4.63, 5.34)	(2.17, 2.70)	(1.10, 1.49)
Shared Ethnicity		1.97**	0.87
		(1.77, 2.19)	(0.74, 1.02)
Shared Religion		1.74**	1.29**
		(1.61, 1.88)	(1.16, 1.44)
Shared Colonial History		1.34**	1.49**
		(1.21, 1.47)	(1.32, 1.69)
Similarity in Regime Type			1.98**
			(1.80, 2.17)
Similarity in Level of GDP Per Capita			1.60**
			(1.46, 1.76)
External Threat Environment			1.74**
			(1.41, 2.15)
Immediate Threat			0.97**
			(0.94, 0.99)
Contiguity			3.41**
			(3.02, 3.85)
Major Power Dyad			6.94**
			(5.25, 9.16)
Power Asymmetry			1.95**
			(1.73, 2.20)
Trade to GDP Ratio (Log)			1.16**
			(1.14, 1.19)
Leadership Transition			1.03
			(0.81, 1.29)
Constant	0.01**	0.005**	0.003**
	(0.01, 0.01)	(0.005, 0.005)	(0.002, 0.004)
Observations	581,518	560,775	317,219
Log likelihood	−23,071.98	−22,035.12	−11,086.40
AIC	46,147.96	44,080.25	22,200.80
R^2 *Tjur*	0.00	0.01	0.01

Notes: $^{**}p < .01$; $^{*}p < .05$

In Model 8, 9 and 10 in Table 2.3, the dependent variables are differentiated by types of alliance and their results show that Hypothesis 3 are supported. In Model 8, having a shared language results in 10.90 times higher likelihood that the pair of states will also share a defensive alliance, while, in Model 9, sharing a language increases the likelihood of two states having an offensive defense tie by only 1.66 times. This suggests that a shared language matters more in encouraging states to bond through defensive alliance agreements, rather than joining together to form offensive alliances. Note that from Model 1 to Model 9, I do not include non-aggression pacts into the dataset as the non-aggression pacts do not require active obligations between the signatory parties. As a robustness check, in Model 10, I include non-aggression pacts into the dataset and use the presence of non-aggression pact ties as the dependent variable. *Shared Language* is still robust in that it still has statistically and substantively significant effects on the presence of non-aggression pact ties between two states. It is noteworthy that when the external threat environment is increased by one unit, states have 91% lower likelihood in sharing a non-aggression pact. Furthermore, they are more likely to share an offensive alliance (22.81 times), than a defensive alliance (3.09 times) with a one unit increase in the external threat environment. A post-hoc explanation for this result would be that when states feel threatened they see less value in signing a non-aggression pact. However, it is important to note the low Tjur's R^2 value of Model 9 given that offensive alliances are actually quite rare in the international system, meaning that we should be cautious in drawing a concrete conclusion. The results of Model 8-10 are also visualized in Figure 2.3. The contrast between the effects of external threat environment on states' decisions to maintain defensive alliances, offensive alliances and non-aggression pacts are clearly seen in Figure 2.3. It should be noted also that dyads with two major powers are more likely to maintain offensive alliance ties than the other two options. Shared ethnicity and shared religion also positively affect the likelihood that states will maintain defensive alliances and non-aggression pacts, but their effects are not as salient as those of shared language.

Table 2.3: Odds Ratios of Presence of Alliance by Types of Alliance

	PRESENCE OF ALLIANCE TIES BY TYPE Odds Ratios		
	DEFENSE	OFFENSE	NON-AGGRESSION
	(8)	(9)	(10)
Shared Language	10.90**	1.66*	5.99**
	(10.41, 11.42)	(1.05, 2.62)	(5.76, 6.22)
Shared Ethnicity	7.06**	1.92**	5.16**
	(6.73, 7.40)	(1.32, 2.79)	(4.94, 5.40)
Shared Religion	1.92**	0.79	1.45**
	(1.85, 1.98)	(0.56, 1.09)	(1.41, 1.49)
Shared Colonial History	0.95*	0.69	1.02
	(0.91, 0.99)	(0.45, 1.06)	(0.99, 1.05)
Similarity in Regime Type	2.38**	2.21**	1.71**
	(2.31, 2.45)	(1.72, 2.83)	(1.68, 1.75)
Similarity in Level of GDP Per Capita	1.77**	0.55**	1.60**
	(1.71, 1.82)	(0.42, 0.74)	(1.56, 1.63)
External Threat Environment	3.09**	22.81**	0.09**
	(2.88, 3.32)	(12.82, 40.60)	(0.09, 0.10)
Immediate Threat	1.00	1.01	1.03**
	(0.99, 1.00)	(0.97, 1.05)	(1.02, 1.03)
Contiguity	2.84**	9.16**	3.49**
	(2.70, 3.00)	(6.73, 12.47)	(3.33, 3.65)
Major Power Dyad	2.17**	23.49**	2.34**
	(1.82, 2.58)	(14.70, 37.52)	(2.02, 2.72)
Power Asymmetry	1.34**	2.59**	1.50**
	(1.28, 1.39)	(1.91, 3.51)	(1.45, 1.55)
Trade to GDP Ratio (Log)	1.40**	0.90**	1.29**
	(1.39, 1.40)	(0.86, 0.95)	(1.28, 1.29)
Leadership Transition	1.09*	1.09	1.13**
	(1.01, 1.17)	(0.63, 1.86)	(1.07, 1.19)
Constant	0.04**	0.0000**	5.21**
	(0.03, 0.04)	(0.0000, 0.0000)	(4.90, 5.53)
Observations	317,219	317,219	344,218
Log likelihood	−64,934.59	−1,921.52	−124,036.90
AIC	129,897.20	3,871.05	248,101.90
R^2 *Tjur*	0.38	0.02	0.26
Notes:			$^{**}p < .01$; $^{*}p < .05$

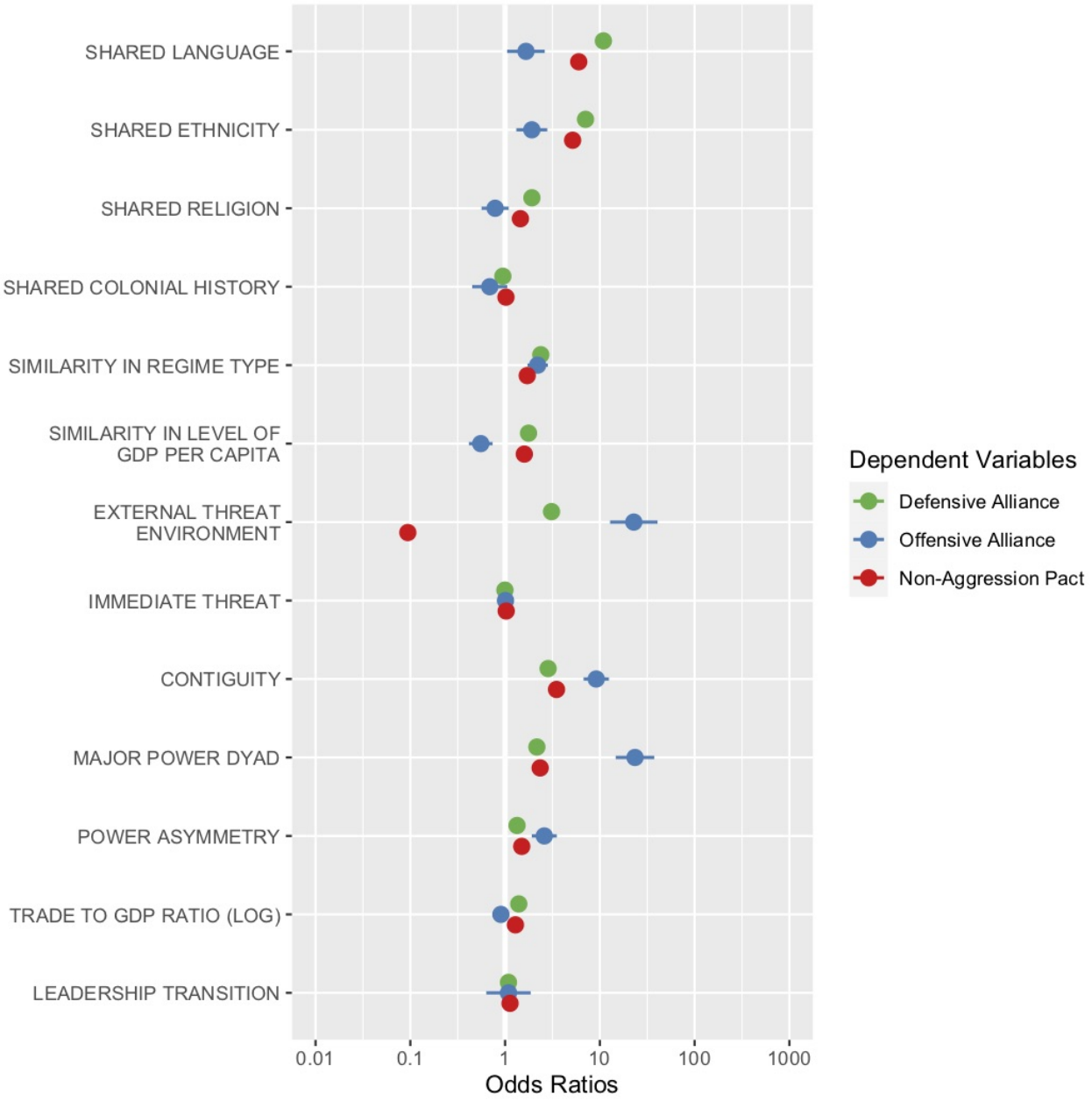


Figure 2.4: Visualization of Odds Ratios of Presence of Alliance by Types of Alliance

2.8 Conclusion

Culture matters in international relations and this chapter uses shared cultural identities and their effects on the maintenance of alliance ties as examples. Specifically, I argue and show that states with a shared language, operationalized as a shared official language, have higher tendency to also maintain alliance ties, than states that do not share a language identity. Furthermore, while states that share the same ethnicity and religion also have higher likelihood to share alliance ties, their effects are not as salient as that of a shared language. Lastly, states with a shared language have higher tendency for sharing a defensive alliance than sharing an offensive alliance.

I argue that we observe such salient effects of shared language because language is the most important cultural identity marker that operates in at least three levels in international affairs. As predicted by social identity theory, shared identities tend to foster in-group favoritism and groups tend to positively promote their shared traits. States are groups of people whose shared identities have been developed through the national building process. When these states interact in the international arena, they gravitate towards those with similar identities to cooperate. This chapter uses alliance ties to prove this argument. States that have the same official language have higher tendency to maintain alliance ties. Such an explanation applies to a multi-facet of cultural identities, namely language, ethnicity and religion.

But language is unique in that there are two additional pathways that it operates. Among all the national identities, language is the most important. It is the conduit through which other identities are built up on and is imperative to any nation building process. Because language is so important, sharing the same language sets a certain expectation between the potential signatories. It serves an indicator of the counter-party's worldview and lessens the uncertainty of the future. As demonstrated in this chapter, a shared language affects how states calculate their mutual interests and thus encourages them to maintain alliance ties. I called this a *heuristic* pathway and it is largely psychological. The expectation of future action of the counter part and the calculation of mutual interests may very well be wrong. Additionally, language has a *functional* role in international

cooperation. A shared language allows states to communicate effectively, while also minimizing time and cost in conducting international affairs. This encourages states with the same language to have higher tendency for sharing an alliance. These two features of language are responsible for its more salient effect in encouraging states to maintain alliances. Even more interestingly, the bond formed among states with the same language leads them to engage more in defensive alliances, than in offensive alliances as a way to not only defend their counterpart that they share an identity with, but also to protect that identity as well.

This chapter shows that a shared language encourages states to maintain alliance ties and that the preferred choice of their alliances tend to be defensive, rather than offensive. In the next chapter, we will delve further into understanding how a shared language, as well as other dimensions of cultural identity affect the design choice of a military alliance.

Chapter 3

Shared Language and Alliance Design

3.1 Recapping and the Second Puzzle

I demonstrate in Chapter 2 that states with a shared official language have higher likelihood to also share an alliance and that their alliance tends to be defensive alliance, rather than offensive. We also found that types of shared identity do not hold similar explanatory power when we investigate the likelihood of states sharing an alliance. The next research agenda seeks to extend these findings further and focus on the design of alliances among states with a shared identity. This chapter attempts to answer the questions: What, if any, is the effect of shared identity among states on how these states design their formal military alliance? If so, which dimension of state identity is most salient? and what is the causal mechanism of its effect?

These questions have not been answered satisfactorily in the existing international security scholarship. Scholars who have tackled these questions systematically appear to prefer a rationalist explanation, or some form of its variant. They focused their studies on how wealth, threat, regime type, major power presence, past experience, and geographical distance, among others, affect the design of military alliances.

While these are important considerations, existing scholarship has failed to consider socio-cultural factors such as shared language, shared ethnicity, shared religion, among other identity markers for states that could have an impact on

the design choices of their security agreements. Understanding how socio-cultural factors function is critical to the constructivist study of the international relations and are employed by comparative political scientists to study domestic political affairs. However, the effect of these socio-cultural determinants has yet to be tested systematically on alliance design.

3.2 Summary of the Argument

My goal in this study is to show how rational design is important for alliances, but insufficient without taking into account cultural considerations. Specifically, I show that shared language among states is imperative to the understanding of how leaders choose the design features of their military alliances. My approach assumes that states and their leaders are rational; meaning that given a set of design choices, leaders will pick the option that they believe will result in the most gains for their national security, while minimizing cost. Deviating from traditional rational choice frameworks, this paper tests shared language as an independent variable that affects states' decisions in the construction of their security commitments. In the final analysis, I show that similarity in language among member states is the most salient dimension of state identity that has an effect on military alliance design.

This study will develop and apply the ***Sociolinguistic Theory of Alliance Design*** which draws on sociolinguistic literature and past scholarship within the social constructivist school of IR, but with a rationalist spin. The theory posits that similarity in language among alliance members explains states' alliance design choices, which are operationalized as the restrictiveness of *Membership Rules*, the broadness of *Scope*, the complexity of *Formal Rules*, the level of *Rigidity*, and the level of *Centralization*.

The causal mechanism of such effect has to do with language's dual purposes: as a *heuristic* and a *functional* role.

For design features, namely *Membership Rules*, *Scope*, *Formal Rules* and *Rigidity*, for which shared language does not aid in increasing their operational effectiveness, a shared language becomes a burden to achieving costlier credible commitment features. A share language tends to prompt negotiating parties to consider a

design choice that is less costly first, which is the states' preferred option in their cost-benefit analysis. This is because shared language has a *heuristic* power that allows states to make assumptions about the motivations and intentions of the signatory parties, based on their mutual trust brought about by a shared sense of identity, which ultimately lowers the uncertainty that other parties will live up to the security expectations. States have lower incentive to pay for more costly design choices when they have some level of trust that the other signatories would fulfill their commitments as allies.

But this *heuristic* role of language gives way to language's *functional* role for design features that require daily interactions among member states. For this kind of features, a common language can enhance operational effectiveness. In this study, such a design feature, is *Centralization*. For *Centralization*, shared language will likely bring about the resulting design that is highly centralized that aims to maximize the effectiveness of the alliance because member states have a common language as a viable tool to achieve such security gains. This would be the case, despite the fact that such an effective design choice is more costly than the alternatives.

Finally, I show that this theory holds by performing a series of ordinal logistic regressions with alliance design features as dependent variables and *Shared Language* as the main independent variable of interest. I also show that other dimensions of shared identity, i.e. *Shared Religion*, *Shared Ethnicity*, *Similarity in Level of Economic Development*, and *Similarity in Political Ideology* are not salient determinants of alliance design.

3.3 Alliances and the Design of Institutions

My study will draw on and contribute to the work in three areas of international relations: the study of military alliances, the "Rational Design of International Institutions" literature, and the social constructionists' "Crafting Cooperation" project. In addition, I will bring in knowledge from the fields of social psychology and sociolinguistics to enrich my explanations.

Much of the literature on military alliances can largely be divided into two broad categories: the study of alliance formation and of alliance performance.

Firstly, scholars have long been interested in why alliances are formed. We know that states see formal military alliances as a way to acquire military security by overcoming national resource constraints. Leaders engage in alliance agreements when their own resources may not be sufficient to protect their sovereignty and security. Sometimes, states that face similar security threats ally with each other to balance against powerful or threating countries (Waltz, 1979; Gilpin, 1981; Walt, 1987; Snyder, 1997). Powerful states, however, can enter into alliances to extend their military protection and control over smaller states (Osgood, 1971; Ikenberry, 2001; Benson, 2012). Secondly, scholars also know well about the effect of military alliances in deterring, or encouraging, interstate military conflicts. For example, scholars have demonstrated that alliances designed to be defensive in nature help deter dispute initiation against potential targets (Leeds, 2003b; Johnson and Leeds, 2011) and that certain types of alliances increase the likelihood that members would intervene in a war against a target (Mattes and Vonnahme, 2010; Johnson, 2016). On the other hand, a target with allies can become emboldened and show higher tendency to initiate or escalate disputes (Snyder, 1984; Smith, 1995). Several other studies have explored, with inconclusive evidence, the impact of regime types on alliance durability and reliability (Gaubatz, 1996; Reed, 1997; Gartzke and Gleditsch, 2004; Leeds et al., 2009; Mattes, 2012a; Mattes and Rodríguez, 2014; Chiba et al., 2015). While the literature on military alliances is extensive, scholars still do not understand very well with regards to the variation in the design choice of formal military agreements. Relatively few scholarly studies have attempted at asking why states adopt certain and different designs of military alliances across time and space. In other words, the design of military alliances has not adequately been studied as a dependent variable within the alliance literature.

International institutional design has received a major boost in interest after Koremenos, Lipson and Snidal (2004) published the "Rational Design of Institutional Institutions." These rational choice theorists assume that leaders deliberately engage in formalized agreements in order to overcome international cooperation problems. They study how scope, centralization, flexibility, decision-making rules, and membership rules of international institutions are influenced by different determinants, such as the nature of problems facing international cooperation, uncertainty issues and number of stakeholders for a particular issue. But with the

exception of Kydd's study of NATO enlargement as part of the project (Kydd, 2004), the rational design of international institutions literature has rarely been used to study military alliances or apply to international security problems. Mattes attempts to close this gap by drawing on the rational design framework to study how reputation of the negotiating countries influences the design of military alliances. She shows that in a bilateral alliance where at least one of the countries has a reputation for unreliability then the likelihood of the leaders of would-be alliance partners adopting reliability-enhancing provisions would be higher. She finds that this effect is more pronounced in asymmetric alliances where two countries' capabilities diverge (Mattes, 2012b). Benson, on the other hand, advances the alliance literature by studying the impact of moral hazard on leaders' design choice of military alliances. He too operates within the rationalist framework by demonstrating that preference incongruence and revisionist tendency of a minor state in an alliance contributes to a military commitment that is ambiguous and probabilistic. Benson claims that leaders choose such a design deliberately in order to minimize the moral hazard of an allied partner who might feel emboldened and act aggressively from the security guarantee. An ambiguous commitment by a major power keeps a small country unsure and would think twice before behaving in a way that invites conflict (Benson, 2012). Despite an emerging in interest in applying the institutional design logic to study security-related institutions, the rational design framework of Koremenos et al. (2004) has more to offer to the study of military alliances and their design.

The "Crafting Cooperation" project represents a social constructivist's take on the questions of international institutional design. Emerged as a response to the rational choice scholars' effort to explain the design of international institutions, the crafting cooperation literature looks at the determinants of institutional design that are drawn from sociological, psychological and historical and cultural studies (Acharya and Johnston, 2007). Factors such as identity, culture, norms, history, among others, are their main interests. Yet, like the rational design of international institutions literature, the framework has not frequently been employed to study the design of military alliances. As an exception, Schimmelfennig looks at how the transatlantic community's liberal identity affects the within-case

variation in NATO's institutional design across time, as part of the crafting cooperation project itself (Schimmelfennig, 2007). Scholars participating in the crafting cooperation project, however, are no strangers to the application of social and cultural analysis to international security. Johnston, for example, studies how culture shapes China's security policy, and determines that China's thinking on war is strikingly similar to realism, a concept mostly attributed to Western countries (Johnston, 1995). Acharya argues that Southeast Asia's consensus-building and non-confrontational norms inhibit the formation of a security community in the region (Acharya, 2001). Another social constructivist scholar, Khong, applies the Imperial Chinese logic of the tributary system to study the American empire and claims that US has created the world's most profound tributary network, comprising of formal and informal alliances (Khong, 2013). Despite the increasing social constructivist literature in the field of international security, this important approach, characterized by its adoption of variables commonly applied to a people-level unit of analysis, has rarely been used in a large-N or medium-N analysis, or developed into a more parsimonious theoretical framework in order to explain military alliance design. Social-cultural determinants should be explored more systematically to discern their influence on the leaders' decision in selecting design features of alliances they enter into.

My goal for this project is to contribute to the advancement of scholarly literature in these three areas of IR subfields, mainly by bringing in social psychology, and sociolinguistic literature in a more systematic and quantifiable way, and by showing that constructivist socio-cultural approach and rational design are complementary, rather than antithetical to each other. By doing so, I will be able to decouple the concept of social identity, which many social constructive scholars in international relations tend to treat as a black box without nuances, into its various dimensions, such as language, ethnicity, religion, economic status and political ideology. In the end, I am able to show that shared language matters in the design of alliance by giving it a rational explanation, while other dimensions of identity have no effect. In a similar attempt to be more systematic and quantitative with regards to integrating socio cultural considerations into international security, Henderson (1997) and Gartzke and Gleditsch (2006) use identity vari-

ables to study conflict initiations. My attempt to quantify and decouple identity variables to study institutional design, let alone alliance design, is the first.

3.4 Defining Military Alliances

It is important to first define the term "military alliance" in order to generate a concrete scope for this study. A working definition in Leeds, Ritter, Mitchell and Long, put this best: alliances are "written agreements, signed by official representatives of at least two independent states, that include promises to aid a partner in an event of military conflict, to remain neutral in the event of conflict, to refrain from military conflict with one another, or to consult/cooperate in the event of international crises that create a potential for military conflict" (Leeds et al., 2002). However, to be in line with previous studies on military alliance, the scope of this study will not include the so-called pure "non-aggression pacts", which require signatories to refrain from military conflict with one another because this kind of agreements do not require active security cooperation among the signatories. Some agreements that have a non-aggression requirement, but also include other active security commitments are included in this study's definition of military alliance.

It is also important to distinguish between the terms "alliance" and "alignment." Too often, these two words are used interchangeably. However, these two terms connote different meanings in the study of international security, albeit related. Alignment is a general term that refers to states' predisposed choice of whether they will be friendly to or against the position of other states for a given international situation that can be over a range of issues such as trade preferences, human rights positions, climate change, territorial disputes, and military conflicts. Alliance, on the other hand, refers to a formalized agreement signed by leaders of two or more independent states to explicitly determine conditions under which states would cooperate or consult each other during international interactions. Such formalization "adds elements of specificity, legal and moral obligation, and reciprocity that are usually lacking in informal alignments" (Snyder, 1997). Therefore, alliance is a subset of alignment. Military alliances, then, are formal agreements that states signed with each other in order to cooperate or consult in a situation involving a potential or realized military conflict.

3.5 Design Features as Dependent Variables

In trying to illustrate the variation in the design of military alliances, I will draw on the dimensions identified in the rational design of international institutions literature, namely, *Membership Rules*, *Scope*, *Formal Rules*, *Rigidity*, and *Centralization*. Below, I will discuss the conceptualization of these design characteristics as dependent variables of interest and draw testable hypotheses later on. The details on the operationalization of these variables will be in the next chapter.

3.5.1 Membership Rules

We can treat the variation in *Membership Rules* among military alliances as a spectrum of how restrictive the rules are. This is not simply the number of actors, but rules and requirements for becoming a member of an alliance. An alliance can be limited to two independent states, but it can also be a multilateral one with an option to add more. This is an important design feature with real implications on how the alliance is managed and performs. If one may recall, the controversy surrounding the expansion of NATO to include Eastern European countries signaled a potential problem in adding members to an existing alliance. NATO has requirements under Article 10 of the agreement, which effectively bar many independent states from joining the alliance. Much debate took place in European capitals over this issue. Some policy makers saw NATO enlargement as a chance to reinvigorate the alliance, but others who opposed the proposal viewed it as an unnecessary move that may antagonize Russia (Koremenos et al., 2004). Like NATO, many alliance agreements stipulate how new members could be added. These may be, for example, based on states being in a particular geographical region, having a certain system of governance, and, even more vaguely, featuring a specific system of values. In other cases, membership of an alliance appears to be even more restrictive with no option of adding a future member. In fact, most alliance agreements make no mention of whether a new member can join into the alliance, suggesting that leaders tend to not think about alliance expansion when they originally signed their agreements.

3.5.2 Scope

An alliance's *Scope* is the extent to which issues other than military cooperation are included as part of its formalized security agreement. A military alliance can have a scope that is broader and more expansive than simply dealing with military matters. In many alliance agreements, non-military issues—such as economic cooperation, protection of human rights, protection of minorities, scientific and cultural cooperation, climate change mandate, among others—are sometime included, signifying a broader scope and more sophisticated level of cooperation. For example, the Sino-Soviet Treaty of Friendship, Alliance and Mutual Assistance signed between Mao Zedong and Joseph Stalin in February 1950 was designed with the purpose to deter future Japanese aggression towards both countries, but its Article 5 also mentioned cooperation in other areas, i.e. "parties will undertake cooperation to promote economic and cultural ties between states and will give each other economic assistance." In another example, in 1971, the Soviet Union and Egypt signed the Treaty of Friendship and Cooperation, pledging not only to consult each other on security affairs, but also to coordinate international policies that include cooperation in economic, scientific, technical areas as well as in literature, education, health, and media, among others.

Additionally, some scholars conceptualize the scope of military alliance agreements as the extent of circumstances that obligate members to become involved militarily (Snyder, 1997; Benson and Clinton, 2014). They categorize the nature of military alliances into those agreements with offensive and defensive provisions, defensive-only stipulations, consultation-only requirements, and neutrality agreements. Those agreements with both offensive and defensive provisions require member states to engage in a military action under a wider range of circumstances than defensive-only alliances. But defensive-only agreements have a broader scope than consultation and neutrality pacts. Comparing between consultation and neutrality pacts, consultation pacts requires leaders to consult and determine the next course of actions, while neutrality pacts mean leaders cannot take side against a signatory if it is attacked by a third party.

3.5.3 Formal/Decision-Making Rules

Formal Rules are how important decisions get made in an alliance. Koremenos et al. (2004) conceptualize them as the rules that control how an alliance operates. When leaders design a military alliance, they need to put in place the decision making process in order to control the responses in an event of potential military conflict. In many non-military international institutions with universal membership, such as the United Nations, we see voting mechanism that sometime favors powerful countries. In military alliances, sometime we see a treaty that stipulates a subordination of the forces of some member states under the control of another state. This is the design of the force structure among allies that would be put in place during conflict, which signifies how decision would get made. In this sense, *Formal Rules* measures how complex the decision making process is in an alliance.

As an example, Germany and the Turkey signed a military alliance prior to the outbreak of World War One to protect Austria-Hungary if Russia were to intervene in the crisis involving Austria-Hungary and Serbia. In that agreement, Germany agreed to leave its military mission at the disposal of Turkey. Turkey, on the other hand, assured Germany that its conduct of military mission would be in conformity with what had been agreed upon by the leaders of the two countries. The responsibility to manage and conduct the affairs of the alliance was left with Turkey. Such an arrangement signals a decision making process that is efficient and streamlined.

Other times, we see a more complex and cumbersome formal rules. For example, the Regional Security System (RSS), which is a military alliance among the eastern Caribbean states signed in 1996, calls for a joint coordinating and planning committee, making up of the commanders that would coordinate military policy. In terms of the responsibility of the troops, in an event of conflict, the eastern Caribbean country that calls for military assistance in its territory will be in command of the troops of alliance members.

3.5.4 Rigidity

Rigidity of military alliances can be conceptualized as whether such agreements legally allow member states to reconsider their commitments.[1] How rigid an alliance would be is an important consideration for leaders negotiating an agreement because when conflict actually takes place states may be faced with a circumstance that is different from when they made the decision to accept those security commitments. These unexpected scenarios can arise in a form of novel demands from domestic coalitions, or a shifting power and advantage in the international system, among others. In the rational design of international institution lexicon such clauses, which set conditions under which a commitment can be renounced, are called "escape clauses" (Koremenos et al., 2004). Some military alliance agreements include these conditions under which states can renounce their military commitments. For example, the Organization of American States, a regional agreement of the states in Central and Southern Americas with a strong security component, has a clause requiring states that would like to renounce membership to notify other members two years in advance. Another example is the military agreement between Poland and the Soviet Union—signed in 1932 before collapsing in 1939 when the latter invaded the former—in which its Article 2 stipulates: "should one of the parties commit an act of aggression against a third state, the other party shall have the right to denounce the present pact without notice" (Leeds, 2000a).

3.5.5 Centralization

Some military alliance agreements provide for a creation of a centralized body to manage their member states' military cooperation and to carry out the tasks set in those agreements. *Centralization* measures the degree to which member states in an alliance are willing to give up their national sovereignty in exchange for allowing important military tasks to be performed by a new entity. If states could agree to such delegation of tasks, we should expect the resulting alliance to be more

[1] I conceptualize this in an opposite manner with the rational design of institutional institutions literature (Koremenos et al., 2004), which calls this variable *Flexibility*. I do so in order to be consistent with how I conceptualize the three other variables above, meaning that a high level of *Rigidity* means a design choice that has higher cost than a design feature that has a low level of *Rigidity*.

effective because there is a centralized body dedicated to coordinating military policy for the group.

One of the key indicators for a high level of centralization is the presence of an integrated command of military forces. As there are not many such arrangements, a few examples should help illustrate this conception further. In April 1956, Egypt, Saudi Arabia and Yemen, influenced by the rise of Pan-Arabism ideology, signed an alliance that required the establishment of "a permanent (wartime and peacetime) joint command to consist of a Commander-in-Chief and its staff" which "will lead the forces placed under its command" (Leeds, 2000b). The press release of the signing ceremony stated that the military pact was reached "in light of the Arab people's aspirations, freedom, dignity, peace and security" (Reuters, 1956). Interestingly, the relations between Saudi Arabia and Egypt deteriorated over the Yemeni Civil War and the alliance ended in 1962. Other alliances may require only consultation on what states should do in an event of conflict and do not require an establishment of a new bureaucracy. For example, the Treaty of Friendship and Good-Neighborliness between France and Libya, signed in 1955, required the two states to only "consult each other with a view to ensuring the defense of their respective territories if there is a third party engages in aggression against one of the members" (France and Libya, 1955). The treaty did not contain any provision requiring centralization and delegation of tasks to any entity.

Before moving on to explain the independent variable of interest and my theoretical proposal of how this variable functions as a determinant of alliance design, it is imperative to provide the foundations on which my research is built on.

3.6 Social Identity in IR

The term "social identity" is defined as "individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with emotional significance attached to that membership" (Tajfel, 1974, p. 69). Tajfel suggests that a person may have favoritism among those who he or she identifies as being in the same social group (ingroup), which could be according to different qualities such as culture, race, language, age, gender, among others, and that there

is a desire by the person to achieve and maintain positive outcomes and distinctiveness for the group. Yet, the same person may engage in outgroup derogation, seeing those who are not part of his or her ingroup as threatening. This may lead to intergroup discrimination and conflict because of the desire for the ingroup to positively distinguish itself from other outgroups. Tajfel called this effect an "ingroups and outgroups" phenomena or "Social Identity Theory" (Tajfel et al., 1971; Tajfel, 1974; Tajfel and Turner, 1979; Tajfel, 1982).

Through his experimental work, Tajfel was able to show that any arbitrary group assignment in the lab is sufficient in eliciting ingroup bias, e.g. over the distribution of resources. In the experiment, this was the case even if the social categorization had no real-world significant (Tajfel et al., 1971; Turner et al., 1987).Tajfel and his colleagues explained that this is because group identification reduces the psychological distance among group members, and thus they view their goals and motives as being similar. Following on from this, social grouping can redefine and transform a person's self-interest into a collective one where outcomes for self or others in the same ingroup are even interchangeable.

Since Tajfel's developed his theory, several scholars have substantiated the field by arguing that "ingroup favoritism" functions in our interaction through trust. They argued that trustiness in the partner increases when group membership is salient and this leads to more cooperation among members. According to this line of research, mostly through laboratory experiments, ingroup bias leads to more trust of fellow members than those who are viewed as belonging to other groups and this is more so when the ingroup members identify more with their group. In turn, heighten trust leads to an expectation that those in the same ingroup will reciprocate the act of cooperation (Brann and Foddy, 1987; Brewer, 1979, 1981; Brewer and Kramer, 1986; Brewer, 2008; Brewer and Schneider, 1990; Kramer et al., 1996; Kramer and Goldman, 1995). These social identity theorists, therefore, see ingroup trust that contributes to cooperation as not only a social decision, but also a rational choice since members expect cooperative gestures to be reciprocated.

In the field of international relations, traditional alliance and realist scholarship tends not to give weight to social identity as an important factor in international security (Snyder, 1984; Walt, 1987; Smith, 1995; Snyder, 1997). They see social

identity as operating at the *personal* level that has little to do with the international system where the main unit of analysis is *state* that operates in an anarchic structure. On the contrary the rise of social constructivist school of international relations has witnessed much attention being given to the role that identity plays in shaping international events. Scholars from the social constructivist school have integrated and elevated what has traditionally been applied at the personal level to their international level analysis (Checkel, 1998; Wendt, 1994, 1999). In doing so, they treat and assume that states act like people.

I take stock at this approach, and rest my methodology on this premise. I treat states like people and theorize based on this assumption. Yet, I differ from the traditional approach of social constructivism in that I still believe that—despite accepting that social identity plays a role in determining states' behaviors in the international arena—states do engage in rational calculations and try to maximize their gains, while minimizing costs when they decide to cooperate or not cooperate with other states. In the end, states are still self interested, egotistic entity. As such, in my view, any analysis of international politics cannot separate psychology from rationality, which is in line with the critique on Wendt's social constructivist approach by Mercer, through his account on the requirements of both psychology and rationality to explain international outcomes (Mercer, 1995, 2005).

For this study, I define "social identity" in the international system context as how states answer the question "who I am?" in relations to others and within a given context. The concept of "shared social identity", then, is the extent to which states answer this question in a similar way. When states shared an identity, I mean that they identify with other states by some group identifications that transcend the boundaries of their states, allowing them to form their ingroup and expand a network of those whom they can trust in the international arena.

Moreover, I break down this definition even further. Identity can be defined in the political, economic and socio-cultural contexts. Politically speaking, states could identify with each other because their regime types are both democratic or both authoritarian. In the economic context, states may both have similar levels of GDP, or they may both be socialistic or capitalistic, thus defining who they are in the same way in economic terms.

By "social identity", I mean group identifications in the socio-cultural context. Socio-culturally, people in both states may share similar native languages, religious beliefs, or certain social norms. In contrast to shared political and economic identity, shared social identity has received little interest in the study of international security, particularly by those scholars who employ large-N or medium-N data to explore broad patterns. Despite this dearth of literature on shared social identity, we have seen some successes in the trade scholarship in using shared social identity, or a similar concept, as an independent variable. Some studies in that field have successfully shown through various renditions of their models that countries with shared identity and culture trade more with each other (Felbermayr and Toubal, 2010; Kokko and Tingvall, 2012; Park and Park, 2013; Melitz and Toubal, 2014). Drawing on the conclusion of these studies, we should expect shared social identity to play some role in security cooperation and, by extension, this should affect the design choice of military alliances as well. On the contrary, we should expect states to be more suspicious of those whom they do not share the same connection with and this should reflect in the design feature of military alliances, in one way or another.

Applying this to international security, and specifically to the military alliance literature, we should expect the ingroups-outgroups effect to be prevalent and reflected in the design of military alliances. Because I believe that states, with leaders as their agencies, identify with each other socio-culturally, they develop ingroup favoritism. This leads to the expectation that others in the group share the same attitude towards each of the group members. Such a sense of social grouping then lowers the states' perceived uncertainty and expand trust about whether or not "you will come defend me, when I am under attack." Most scholars agree that states design alliances in order to ensure credible commitments from other member states. If states believe that others will come to assist them when they are in trouble, then there is less need to design alliances in order to increase the credibility of commitments. States that perceive others as being within their ingroup should, therefore, find it less necessary to design costlier alliances, i.e. those that contain credibility-enhancing provisions. On the other hand, if states view other parties that they are in negotiation with as being in the outgroup, trust is not established and the uncertainty of security assistance fulfillment remains. As

such, we should expect to see alliances whose members are comprised of states that see each other as an outgroup member to contain costlier, credibility-enhancing commitments. From this point of view, the ingroups-outgroups effect is the latent variable that is proxied by a shared social identity among states in an alliance.

But which dimension of identity is salient in alliance design? Which one really matters?To this end, we turn to a subfield within social identity literature that focuses on sociolinguistics.

3.7 Shared Language as an Independent Variable of Interest

The main independent variable of interest of this study is the degree of shared language among signatory parties of an alliance. By this, I specifically mean the official state language that embodies state identity, which came about through the process of social and political negotiations among stakeholders of the state building process.

Many scholars have argued that language is the most salient and robust identity marker of human beings (Giles et al., 1977; Giles and Powesland, 1997; Giles and Johnson, 1981, 1987; Gumperz, 1982; Joseph, 2004; Ryan et al., 1984; Sachdev and Bourhis, 1990, 2005). They employ Tajfel's work on social psychology of identity and produces ample research on sociolinguistics.

Language in our society performs both *heuristic* and *functional* roles. The *heuristic* role of language means that language also acts as "an emblem of groupness, a symbol and a psychosocial rallying-point" (Edwards, 2009, p. 55). The *functional* role of language is its role as an instrumental tool that allows humans to interact, exchange ideas and ultimately try to get what they want. To make this point clear, a real world personal example may help illustrate this point. Imagine a situation where you are entering a new social setting in an international environment where people come from different backgrounds and speak different languages. It is highly likely that you will feel most comfortable and will more than likely gravitate towards those who share the same language. This is not merely because you are able to communicate most effectively with those who speak your language, but also because language allows you to draw some assumptions and expectations

about a person and with a shared language you are able to adopt a shared sense of commonness, allowing you to more comfortably interact with that person. This is in contrast to other identity markers such as ethnicity and religion. You can hardly be sure of a person's ethnicity, unless they speak up. As for religion, few people outwardly project their religious beliefs and the degree to which they identify with such identity can only come about through means of communication, the primary of which is language. As Gumperz notes, "social identity and ethnicity are in large part established and maintain through language" (1982, p.7).

Language is also an important conduit through which state identity is formed. Unlike religion, ethnicity, race or any other possible group identifications, state building requires that political elites cannot be neutral with regards to language policy. Before any other dimensions of state identity can be formed, elites must communicate with their lower status groups in some official way so language cannot simply be kept private as part of the group. While groups have the tendency to promote and make positive distinction of their group's quality, they do so through language and in various ways such as printed press, radio programs, television shows, language lessons in formal or religious school systems. As Anderson points out in his seminal work on nation building, *Imagined Communities*, that the first requirement in the rise of an imagined community such as state is

> the idea that a particular script-language offered privileged access to ontological truth, precisely because it was an inseparable part of that truth. It was this idea that called into being the great transcontinental sodalities of Christendom, the Islamic Ummah, and the rest. (1991, p.36)

3.8 The Sociolinguistic Identity Theory of Alliance Design

The ***Sociolinguistic Identity Theory of Alliance Design*** draws largely from social psychology literature on identity and its variant that focuses on linguistics, not only as a communication tool, but as a robust and most salient marker that

symbolizes state identity. My theory argues that shared language, specifically the official language, among states affects how they design their military alliance.

Specifically, for the design features that do not require the use of language's *functional* role on a daily or frequent basis, states that share similar official language tend to prefer design choices that minimize cost, meaning they give first consideration to non-credible commitment-inducing clases. For these features, language plays more of its role as a *heuristic* identity marker, which allows states to make assumptions about the motivations and intentions of the signatory parties, based on their mutual connection brought about by a shared sense of identity, which ultimately lowers the uncertainty that other parties will live up to the security expectations. States, therefore, have less incentive to pay for more costly design choices when they have some level of confidence that the other signatories would fulfill their commitments as allies. These design choices where language plays a *heuristic*, but no functional roles are: *Membership Rules*, *Scope*, *Formal Rules* and *Rigidity*.

For *Membership Rules*, when potential signatory parties have lower uncertainty about each other's commitment to the alliance, brought about by the salient shared language identity, we should expect to see membership rules that have higher probability of being less restrictive, i.e. more open, having options for potential new members to join the alliance. Vice versa, we should expect to see a decrease in likelihood of an alliance with shared language arriving at a high level of restrictiveness of membership rules. From the perspective of social identity theory alone, we might expect that states with shared identity prefer restricted membership rules when they design their alliance. But when we link shared language identity to a presumption of shared interest that reduces the uncertainty surrounding the counter-party's commitment, this would ultimately increase the likelihood that the alliance will have a more open membership rules. Having more open membership rules, i.e. exhibiting low level of restrictiveness of membership rules, means that states have the ability to add more members who could help share the burden of cost, while the sum of their capabilities would also be greater. This is because states do not require an agreement that is closed, or sometimes secret, where the burden to maintain the alliance rests on the original and fixed numbers of alliance members. Having more members mean more capability to address challenge, but

states can only do so if they feel secure and confidence in the existing arrangement. From this, we have our forth hypothesis of the project.

Hypothesis 4. *As the degree of shared language increases among alliance members, the probability that the alliance's membership rules will have a low level of restrictiveness increases, while the probability of membership rules achieving a high level of restrictiveness decreases.*

For *Scope*, a shared official language among alliance-forming members should result in the increasing likelihood of the scope of the alliance being less broad, i.e. more limited. A broader scope that incorporates obligations in other areas beyond defense will lead to more cost. As a result, states that know what to expect from each other, based on the presumption of shared interests signaled by a shared language, may not feel that they need an alliance that relies on a complex interdependence among members in order to increase the assurance that other signatory members would fulfill the security expectations when conflict occurs. Some broad agreements also require states to fulfill multiple security obligations such as offensive, defensive, consultation, among others. These obligations also lead to more cost. States that shared a salient identity would assume that they are with each other more similar interests so they would expect their counterparts to come to their aid anyway. This suggests that they may feel less need to codify all the credibility-enhancing clauses into the agreement. Keeping the alliance limited in scope means lower cost and they are able to do that because of a higher sense of connection brought about by shared identity. Conversely, if two states were able to achieve high level of broadness of scope in spite of their presumed shared interests, their negotiation process should expect to be more strenuous in order to overcome the default of preferring a limited in scope design choice. Base on this conjecture, we have the fifth hypothesis of the project.

Hypothesis 5. *As the degree of shared language increases among alliance members, the probability that the alliance's scope will have a low level of broadness increases, while the probability of arriving at a high level of broadness of scope decreases.*

In terms of *Formal Rules*, when member states of a forming alliance share their official language, they will have higher likelihood of streamlining their decision making protocol, opting for a choice that is less cumbersome and helps them save cost. They believe they understand each other more through the presumption of interest so they feel less need to design complex rules that govern how they arrive at a decision when conflict arises. By making the decision making protocol less complex, states are able to minimize cost, which is their default preference. In an ideal scenario, the manifestation of this may come in the form of states agreeing to give up the decision making power to one state in the alliance, having no requirement to consult each other, or letting one state plays the leadership role in the alliance. Reciprocally, states with a shared language would have lower likelihood of having complex rules. In practical terms, this may mean a more cumbersome negotiation process before arriving a high level of complexity of formal rules. To this end, we have the sixth hypothesis.

Hypothesis 6. *As the degree of shared language increases among alliance members, the probability that the alliance's formal rules will have a low level of complexity increases and, conversely, the probability of formal rules being categorized as high decreases.*

In terms of *Rigidity*, we should expect to see an increase in likelihood that an alliance be flexible, i.e. less rigid, when the potential member states share the same official language. This means, in an ideal case, it would be relatively easy for member states to renounce the commitment and not renew the alliance. When states share a language, they engage in a presumption of shared interest and believe they understand what to expect from each other. This leads to lower uncertainty perceived by the counter parties that their partners will come to aid them in times of need. Therefore, they have less incentive to design an alliance that is rigid, which would have aimed at eliciting credible commitments from their signatory parties, and would have been more costly. Conversely, the probability of an alliance between states with a shared linguistic identity having a high level of rigidity should decrease compared to the likelihood of such rigidity between states that do not share a common language. To the extent that they arrive at a design choice that has a high level of rigidity despite sharing a language, we should expect

to see a more arduous process in concluding such an agreement. As such, we have the seventh hypothesis.

Hypothesis 7. *As the degree of shared language increases among alliance members, the probability that the alliance will have a low level of rigidity increases. Vice versa, the probability that such an alliance will have a high level of rigidity will decrease.*

Language not only has a *heuristic* role that signifies state identity and creates a presumption of shared interests, but also, arguably, a more tangible *functional* role. For a design feature, where shared language has no or low communicative value in increasing the effectiveness of the alliance, states will opt for a design choice that is less costly. However, when a common official language has a role in adding to the effectiveness of an alliance, then a shared language not only leads to higher trust and lower uncertainty, but also plays out its communicative function. This results in the selection of a design choice that maximizes the alliance's effectiveness, despite the fact that states may incur more cost in opting for that choice. The security gains through having a shared language playing its communicative function outweighs the cost that results from picking a more cumbersome design.

Following on from this, the degree of *Centralization* of an alliance in which its members share a common official language will likely be in a higher category. *Centralization* requires daily communication and interaction among member states, thus a shared language helps functionally with this task and makes the alliance more effective. The centralized management of the alliance will likely be more costly than the alternative, yet states should prefer this option because the value that language brings as a communication tool will enhance the effectiveness of the alliance and thus heighten security gains. From this, we have our eighth hypothesis.

Hypothesis 8. *As the degree of shared language increases among alliance members, the probability that the alliance will have a high level of centralization increases. On the other hand, the probability that such an alliance will have a low level of centralization decreases.*

3.9 Research Design and Methodology

3.9.1 Dataset

In order to test these hypotheses on the effect of shared language among states on various design choices of their military alliances, I rely on the Alliance Treaty Obligations and Provisions (ATOP) dataset (Leeds, 2005). The dataset covers information on cooperative security arrangements over a wide geographical and temporal spectrum. The current dataset covers a period from 1815 to 2016. Leeds attempts to include all treaties and agreements in this period and across the world with the underlying assumption that the features of these security alliance agreements were chosen deliberately by the leaders, in order to overcome security and cooperation problems they are facing. In total, from 1815-2016, there are 538 formal alliances in the dataset, excluding security agreements that are considered purely non-aggression pacts that do not require active military obligations by member states. I use a subset of the dataset from 1914-2016, which contains 451 formal alliances, for the analyses. This is due to the availability of data for other covariates that usually start from post-World War One onwards.

The ATOP dataset reflects the variation in the design of security arrangements and it is the most comprehensive data collection on alliances and their features to date. Another advantage of the ATOP dataset is that it captures changes in the institutional design by coding some security agreements that underwent changes during their life time into phases, each containing data from different phases of those arrangements. To this end, Leeds highlights that her effort "fits well into the 'Rational Design of International Institutions' research program" (Leeds, 2005). However, very few studies have made use of the dataset to its full potential, particularly to explore the variation in formal security arrangements based on the rational design literature.

3.9.2 Operationalization of Dependent Variables

For the dependent variables, the ATOP dataset contains several indicators that are appropriate for capturing different characteristics of the alliance design.

3.9.2.1 Membership Rules

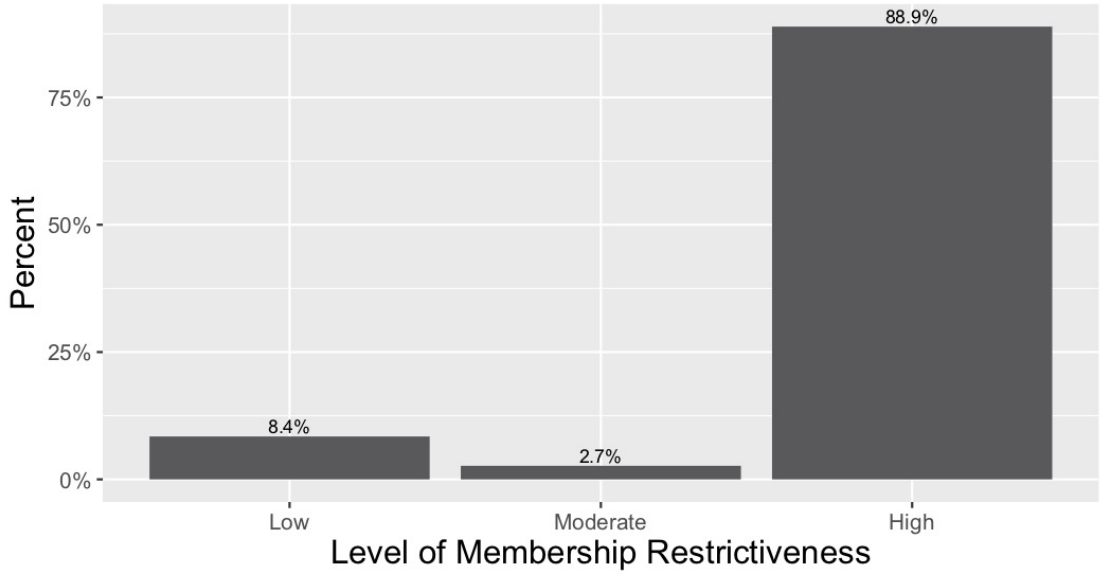


Figure 3.1: Level of restrictiveness of membership rules of alliances in the ATOP dataset from 1914-2016.

The *Membership Rules* of an alliance is conceptualized as ranging from having a low level of restrictiveness to a high level of restrictiveness. The ATOP dataset has variables that allow me to operationalize the variation in membership rules among alliances in the dataset. I create a new ordinal categorical variable and

code membership rules as having a low, moderate, or high level of restrictiveness. The variable is coded as 1 representing a low level, 2 representing a moderate level, and 3 representing a high level of membership restrictiveness. To determine this value for each alliance, I evaluate the relevant characteristics that deal with membership rules in the formalized agreements. I create the coding rules to determine if an alliance would have a low or a high level of membership restrictiveness. For alliances that do not fit these two extremes, I code them as having a moderate level of membership restrictiveness.

For a low level of membership restrictiveness, alliances must (1) have a specific stipulation that mentions specific states as future members, or (2) mentions the possibility of accession by new members that may include a provision that membership is open to any state. These provisions suggest that alliances are not restrictive and future states can aspire to become members provided that they follow some guidelines.

Then, I select other provisions that indicate a high level of membership restrictiveness. (1) Any alliance that has no mention of specific states potentially joining as future members and (2) any alliance that does not contain a provision regarding the possibility of accession by new members are coded as having a high level of membership restrictiveness. Furthermore, I code (3) any alliance that is secret requiring member states to conceal the entire content of the military agreement as having a high level of restrictiveness.

Lastly, alliances that do not fit into these categories are coded as having a moderate level of membership restrictiveness. For example, these may include alliances that are completely public, but do not contain a provision laying out how states may become members. In other cases, they are alliances whose members are required to conceal some parts of the treaty, but future states are welcomed to join.

Within the ATOP dataset, out of the 451 formal alliances from 1914 to 2016, 38 or 8.4% of the alliances are coded as having a low level of membership restrictiveness. 12 or 2.7% of the 451 alliances and 401 or 88.9% of the 451 alliances have a moderate and a high level of membership restrictiveness, respectively. Figure 3.1 shows a graphical representation of the distribution of *Membership Rules*.

3.9.2.2 Scope

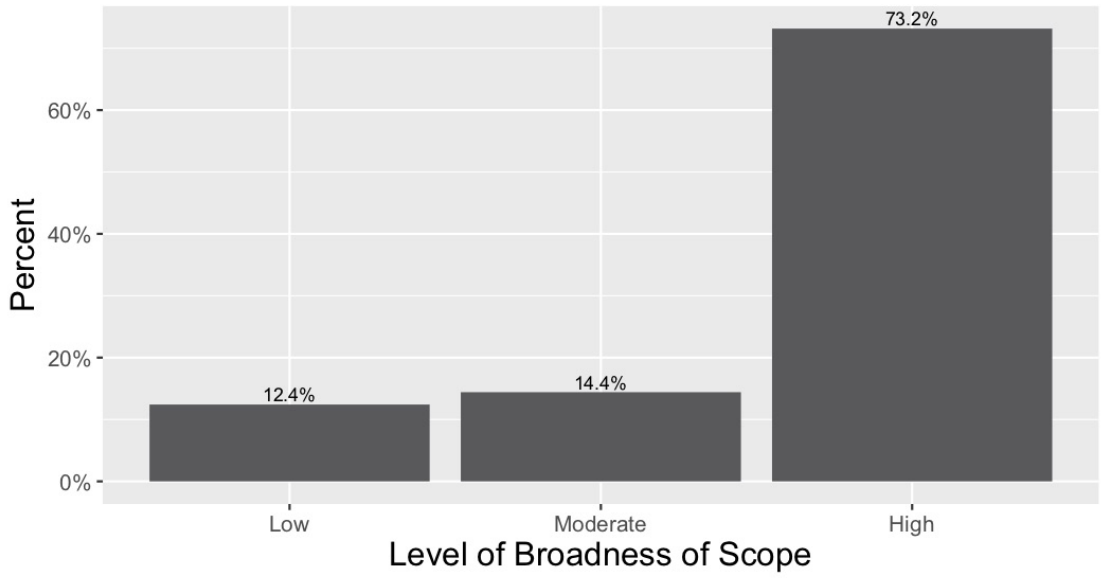


Figure 3.2: Level of broadness of scope of alliances in the ATOP dataset from 1914-2016.

The *Scope* of an alliance can be thought of as being broad or narrow in nature. Information in the ATOP dataset is sufficient to allow researchers to capture the variation in the scope of alliance agreements for analyses. I create a new ordinal categorical variable that records the scope of each alliance as: low, moderate, and

high levels of broadness. The variable takes on a value of 1 representing low, 2 representing moderate, and 3 representing high levels of broadness in scope. To determine such a level for each alliance, I consider the extent to which cooperation among alliance members involve non-military issues and how deep their security cooperation is. I start with the coding rules for determining alliances that have low and high levels of broadness of scope.

Alliances that have a low level of broadness in scope, i.e. limited in scope, are those that (1) contain no stipulation on non-military cooperation, and (2) do not require active military support by any member. These provisions suggest that the mission of the alliances is limited to security purposes and with further limitation on security cooperation itself.

For a high level of broadness in scope, alliances must have (1) a provision that indicates cooperation on non-military issues, (2) some form of economic aids for member states, or (3) a requirement for further negotiation on one or more additional agreements covering other non-military issues. Such stipulations in an agreement suggest a tangible commitment to cooperate on non-military issues and to further expand their cooperation. Furthermore, if alliances do not fall into the coding rules for a low level of broadness in scope already, then I code alliances that (4) contain both defensive and offensive provisions, (5) include references to companion agreements, or (6) explicitly mention that the commitments have indefinite duration, as having a high level of broadness of scope.

Any alliance that does not fall into these coding rules is considered to have a moderate level of broadness in scope. Such alliances include those that contain a provision for non-military cooperation, but do not call for additional institutionalization on non-military issues as a separate agreement. Other alliances that are considered to exhibit a moderate level of broadness of scope include those that do not contain a provision specifically requiring non-military cooperation, but still call for a negotiation for a future agreement in other issue areas. Furthermore, defense-only or offense-only alliances, despite containing provisions for cooperation on non-military issues are considered to feature a moderate level of broadness of scope.

Of the 451 formal alliances in the ATOP dataset, 56 or 14.4% feature a low level of broadness of scope. For a moderate level of broadness of scope, there are

65 or 12.4% of the alliances. Lastly, 330 or 73.2% exhibit a high level of broadness of scope. Figure 3.2 shows a graphical representation of the distribution of *Scope*.

3.9.2.3 Formal/Decision-making Rules

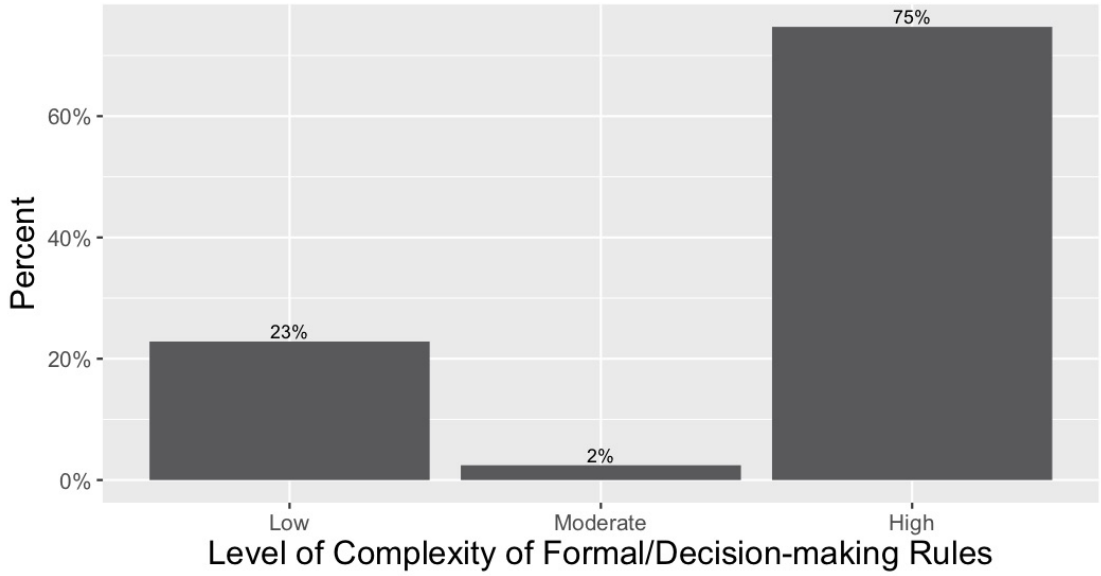


Figure 3.3: Level of complexity of formal/decision-making rules in the ATOP dataset from 1914-2016.

I operationalize *Formal Rules* as the extent to which the rules spelled out in the treaty indicate the complexity of the terms of obligations, that include the decision

making process. As such, the variable can be measured in three levels of complexity: low, moderate, and high. I code 1 for low, 2 for moderate and 3 for high levels of complexity. To determine these levels, I consider three broad characteristics of each agreement, namely, the extent of asymmetry of obligations among member states, the provisions on subordination of forces during conflict, the requirement for domestic ratification, and the requirement to consult each other during conflict.

An alliance exhibits a low level of complexity if (1) one member state has more responsibility in the alliance than other members, giving it an asymmetrical power in determining the affairs of the alliance, (2) it contains a provision for subordination of the forces of one or more member states to another during conflict, giving one or a few members more decision making power in the alliance, or (3) it requires no domestic ratification for the alliance to be in effect. These provisions imply that some states hold more decision making power than the others in fulfilling the alliance commitments and bringing the agreement into effect is not so cumbersome.

Next, when an alliance meets all these three criteria: (1) the treaty indicates symmetric obligations among member states, (2) it has no requirement for subordination of forces, and (3) there is a requirement for domestic ratification before the alliance takes effect, then it is coded as having a high level of complexity. Furthermore, (4) if the member states are required to consult each other on issues that have the potential to lead to militarized disputes, then it is also coded as having a high level of complexity. Alliances with these characteristics suggest that the a highly complex decision making process that requires many steps to arrive at a decision and the responsibility of the decision rest on all member states, making the process inefficient, cumbersome and costly.

Alliances that contradict these coding rules are deemed to have a moderate level of complexity for their formal rules. For example, moderately complex alliances include those in which member states are not required to consult each other in an event of hostility, suggesting that some states in those alliances hold more decision making power than others.

Among 451 formal alliances in the dataset, from 1914-2016, 104 or 23.0% feature a low level of complexity, 9 or 2.0% exhibit a moderate level of complexity,

and 338 or 75.0% show a high level of complexity. Figure 3.3 shows a graphical representation of *Formal Rules*'s distribution.

3.9.2.4 Rigidity

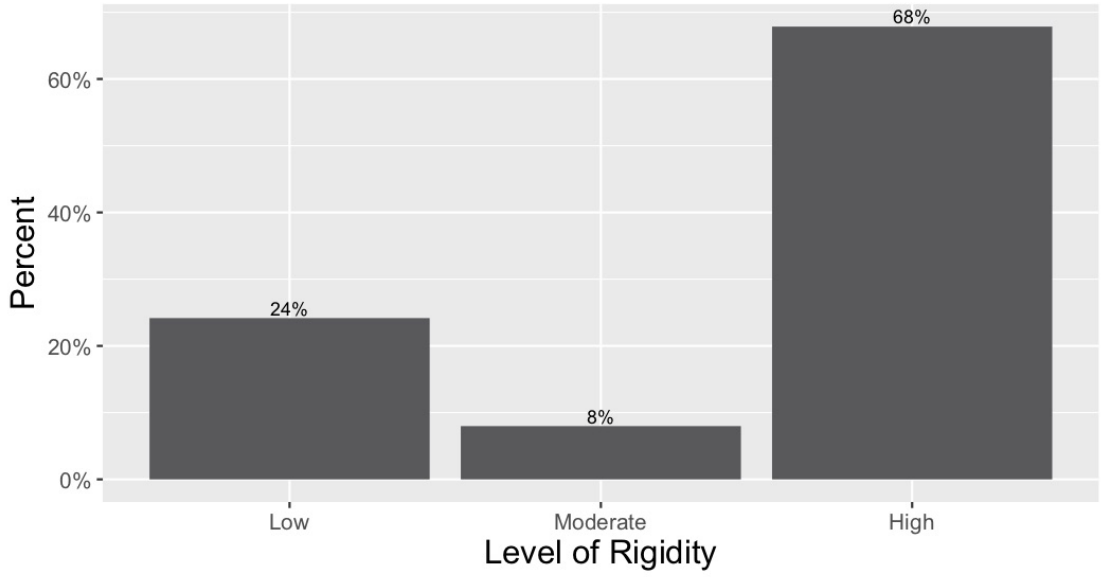


Figure 3.4: Level of rigidity in the ATOP dataset from 1914-2016.

I operationalize *Rigidity* as a measure of the extent to which the alliance allows for member states to avoid fulfilling the commitments and how specific the alliance

agreement is. I code this variable as: low, moderate and high levels of rigidity with the value of 1, 2, and 3 respectively.

To be coded as a low level of rigidity, alliances must contain (1) some form of legal renunciation provision with (2) no requirement for military officials of member states to coordinate with each other during peacetime. Alliances with these provisions allow ample opportunities for member states to avoid fulfilling commitments if, and when, circumstances change.

Next, in order to be considered as having a high level of rigidity, alliances must (1) require member states to commit to a common defense policy, or (2) contain stipulation that the alliances are automatically renewed, unless there is notice of non-renewal. These two provisions suggest that the alliances are designed for a very specific reason with little room for member states to abrogate without breaking the agreed terms.

Alliances that do not fall into the aforementioned coding rules are regarded as featuring a moderate level of rigidity. These moderately rigid alliances include, for example, agreements that specify a threat, but contain provisions for legal renunciation, or those that require official contacts during both wartime and peacetime, but do not commit member states to a common defense policy.

The ATOP dataset contains 451 formal alliances from 1914 to 2016, among these 108 or 24.0% are considered to have a low level of rigidity. 36 or 8.0% demonstrate a moderate level of rigidity, while 307 or 68.0% exhibit a high level of rigidity. Figure 3.4 depicts a graphical representation of the distribution of *Rigidity* across its three levels.

3.9.2.5 Centralization

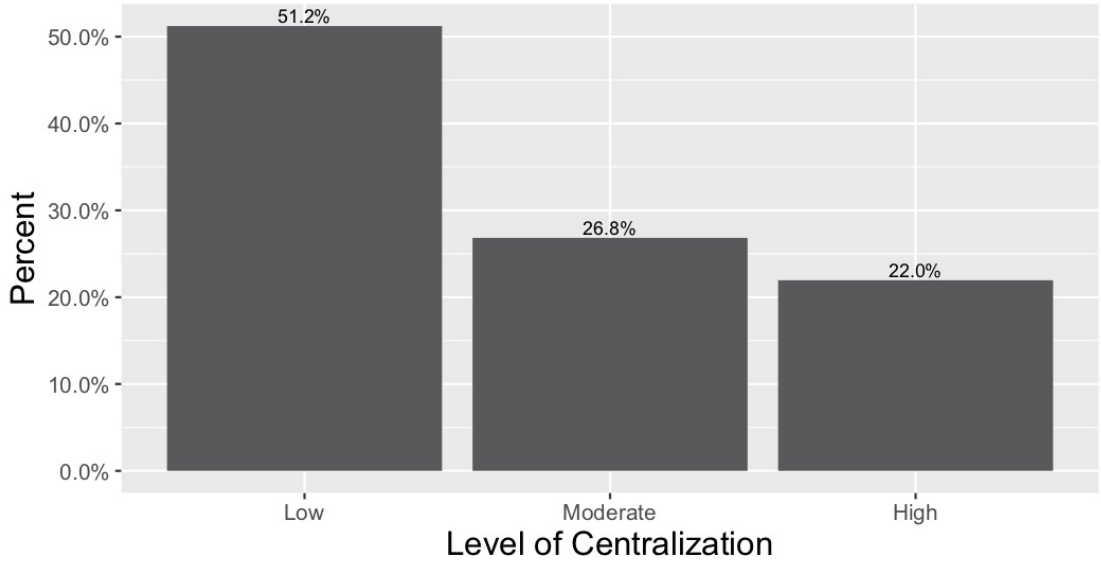


Figure 3.5: Level of centralization in the ATOP dataset from 1914-2016.

The *Centralization* of military alliances is conceptualized as the degree to which member states have given up their sovereignty over military issues to new institutions formed by those agreements. To this end, the variable takes on a value of 1 for a low level, 2 for a moderate level and 3 for a high level of centralization. For each alliance agreement, I operationalize the level of centralization by evaluating

provisions that help gauge the extent to which states give up the control of their sovereignty.

Alliances featuring a low level of centralization are those whose agreements (1) do not provide for a creation of an integrated command, and also (2) do not establish any coordinating organization to handle the cooperation. These provisions within alliance agreements suggest that member states are still tightly in control of their sovereignty over military affairs.

For alliances that are considered to have a high level of centralization, their alliance agreements must provide for (1) an integrated command, (2) a stand-alone organization and a permanent bureaucracy, (3) more than one organization to manage the affairs of the member states, or (4) troop placements by a member sate on the territory of another member. Agreements with such stipulations indicate that the signatories have, to a large extent, handed over the management of the alliances to outside bodies.

For the alliances that do not fit these coding rules, I code them as having a moderate level of centralization, which include, for example, alliances that create a named organization with regularly held meetings of officials, but with no permanent bureaucracy or an integrated command.

Out of 451 formal alliances, 231 or 51.2% feature a low level of centralization, while 121 or 26.8% are determined to have a moderate level of centralization. For a high level of centralization, 99 or 22.0% of the alliances are considered as such. Figure 3.5 shows a graphical depiction of the distribution of *Centralization*.

3.9.3 Measuring Shared Identity Among States

In order to operationalize independent variables that capture various dimensions of shared identity among states, I construct a method that measures the degree of shared identity among member states of a particular alliance. Literature on social identity and international relations suggest several possible indicators of shared social identity between two or more states.

In coming up with a method to measure how much member states of each alliance share a particular aspect of their identity with one another, I count the number of dyads in each alliance in the ATOP dataset that share an identity with

each other. In this case, the dimensions of identity that I am interested in are: (1) similarity in their official language (2) similarity in ethnicity (3) similarity in religious belief (4) similarity in economic development level and (5) similarity in political ideology. Then, I use the number of dyads, in each alliance, that have the same identity-related characteristics and divide that with the number of total possible dyads (i.e. total pairing combination of all member states) in each alliance. I repeat this method for each dimension of their identity to create shared identity-related indices, namely *Shared Language*, *Shared Ethnicity*, *Shared Religion*, *Similarity in Level of Economic Development*, and *Similarity in Political Ideology*. For each alliance, the generalized formula for calculating a shared identity index's value is represented by an equation below.

An index of alliance A for identity x_t, denoted $I(A, x_t)$, is the ratio of the number of shared identity x_t between all pairs in A and the total number of pairs in A. Formally, this is given by

$$I(A, x_t) = \frac{\frac{1}{2}\sum_{i \neq j \in A} \mathbb{1}_{\{x_{i,t}=x_{j,t}\}}}{\binom{n_A}{2}},$$

where $x_{i,t}$ and $x_{j,t}$ are dimensions of identity of states i and j at year t, and n_A is the number of member states in alliance A. The numerator counts the instances in which country i and country j share identity x_t. The denominator is the total number of pairs in A. For example, let suppose that we want to calculate the *Shared Language*'s value for the Grand Alliance, comprised of the United States, the United Kingdom and the Soviet Union, that was signed in 1945. We let $A = \{\text{US, UK, Russia}\}$ and $x_t = \text{language}_{1945}$. Then,

$$I(A, \text{language}_{1945}) = \frac{1}{3},$$

since the numerator is $\mathbb{1}_{\{\text{language}_{\text{US},1945}=\text{language}_{\text{UK},1945}\}} + \mathbb{1}_{\{\text{language}_{\text{US},1945}=\text{language}_{\text{Russia},1945}\}} + \mathbb{1}_{\{\text{language}_{\text{UK},1945}=\text{language}_{\text{Russia},1945}\}} = 1 + 0 + 0$ and the denominator is $\binom{3}{2} = 3$.

This approach of measuring a shared identity within an alliance is more theoretically sounded than simply finding the proportion of states that share the same identity-related characteristics in an alliance out of the number of member states in that alliance. By finding the ratio of the number of pairs of states that share the

same identity in an alliance and the total possible number of pairs of states in that alliance, we mimic the pairwise relationships among states and how they may compare themselves when engaging in consensus building within a group during the negotiation process(Fedrizzi et al., 2010). Another advantage of this measurement is that it captures the increasing difficulty of states to share a common identity as the number of actors increases in their alliance. Furthermore, the method allows me to measure the degree of shared identity among members of multilateral alliances. Unlike in previous studies, this study is not limited to the studying of bilateral relationship between two states, but includes multilateral relationship as well (see Henderson, 1997; Leeds and Anac, 2005; Gartzke and Gleditsch, 2006; Mattes, 2012b).

Table 3.1: Distribution of shared identity-related scores of ATOP alliances from 1914-2016

	I(A, x_t) = 0	**0 <I(A, x_t) <1**	**I(A, x_t) = 1**
Shared Language	84.26%	7.32%	8.43%
Shared Ethnicity	92.46%	5.76%	1.77%
Shared Religion	74.72%	10.42%	14.86%
Shared Colonial History	77.38%	10.20%	12.42%
Shared Economic Development Level	59.65%	13.30%	27.05%
Similarity in Political Ideology	76.05%	9.98%	13.97%

3.9.4 Operationalization of Shared Language as an Independent Variable of Interest

Language has both a *heuristic* role as a signal of shared interests and a *functional* role that facilitates communication. A common language enables an expression of the unique characteristics of a social group and encourages a formation of common social ties, while also effectively helps getting messages across from one party to the other. In a social setting, communicative skills and the ability to interact with strangers are essential to assert, maintain, and protect one's personal and social interests. Interactive and persuasive skills help to pursue an agenda and get things done. All these skills are enhanced in a setting where participants of a social group

share a common language that they have a full grasp of all its nuances and technicalities. This is because a common language is a gateway into understanding and anticipating the ideas and thinking of one's social counterparts. At the international level, state identity, most definitely, has language as a component. States that share a common language should be expected to kindle special ties that would affect their interaction and cooperation internationally.

To operationalize *Shared Language* for the purpose of this study, I establish a definitional rule that sharing a common language means that the two countries share a common official language, as recognized by the two governments. If some states have more than one official language, I choose the official language that is most spoken by the population in those states. To this end, I collect official language data for states in the international system from 1914-2016 from three sources, namely SIL International's *Ethnologue Languages of the World* database (Simons, 2017), *Demographic Statistics Database* (UN Statistics Division, 2018), *The World Factbook* (CIA, 2018).

To find the value for *Shared Language* for each alliance, I first calculate the number of possible dyad combination of states in an alliance. For example, in 1951, Australia, New Zealand and the United States signed the ANZUS Treaty and the member states all share English as the official language. For this alliance, there are 3 possible dyads (i.e. Australia-New Zealand, Australia-United States, and New Zealand-United States). Because all these dyads share English as the official language, so the ANZUS Treaty gets a *Shared Language*'s value of 1 (i.e. $= \frac{3}{3}$). In another example, the 1865 Secret Treaty of the Triple Alliance, whose signatories were Brazil, Argentina and Uruguay, scores 0.333 (i.e. $\approx \frac{1}{3}$) for its *Shared Language*'s value. This is because there are 3 possible dyads and only 1 of the dyads shares a common official language, i.e. Argentina and Uruguay both use Spanish as their official language, while Brazil's official language is Portuguese. Table 4.1 above shows the distribution of *Shared Language*'s scores of the alliances in the ATOP dataset from 1914-2016.

3.9.5 Other Shared Identity-Related Variables as Controls

States, however, can identify with each other in many other possible ways. As a way to control for the potential effect of these variables, I introduce *Shared Ethnicity*, *Shared Religion*, *Similarity in Level of Economic Development*, and *Similarity in Political Ideology* in the models.

3.9.5.1 Shared Ethnicity

Ethnic identity is, at least to some extent, "imagine" or "invented", yet its effect is far from imaginary. In at least two ways, ethnicity has had real contributions to our human affairs. Firstly, ethnicity is a subjective reality that has the power to mobilize collective behavior. Secondly, ethnicity requires specific historical contexts for its construction to be successful (Turner et al., 1987). It is an impressive achievement by political leaders who have constructed and exploited ethnicity based on highly selective and distorted views of their shared past. Contrary to what we may believe, some scholars have provided evidence in support of the counterintuitive fact that ethnic similarity contributes to the increased likelihood of interstate war onset, even when controlled for the contiguity among those states (Henderson, 1997; Gartzke and Gleditsch, 2006). Intrastate conflicts, however, appear to have the opposite relationship with ethnic similarity. A high level of ethnic factionalization within a state tends to lead to a higher probability of intrastate conflict. Since the end of World War Two, there have been at least 240 civil conflicts with more than 25 battle-related deaths per year and most of these are ethnic conflict in nature (Esteban et al., 2012). Therefore, it should not be surprising if similarity in ethnicity, too, would affect how states interact in the international arena, beyond conflict.

I include *Shared Ethnicity* as a control variable to capture the possible effect of ethnic similarity in determining the outcomes of alliance design. To this end, I rely on the *Ethnic Power Relations* database (Vogt et al., 2015) to identify the most dominant ethnic group for each state and each year. By "dominant", I mean the ethnic group that Vogt et al. (2015) characterize as having a "monopoly", "dominant" or "senior partner" position in that state. It is important to note that the database contains data since 1945. As such, I have to rely on extrapolation

for the ethnicity information from 1914. I assume that the ethnic group that is most dominant in 1945 in a particular state remains in the same power position from 1914-1944. This is a viable assumption given that the majority of the ethnic group that is most dominant in a given state remains the same group from 1945 until the present.

Once each state within an alliance is assigned its ethnicity, I apply the generalized formula to compute a *Shared Ethnicity*'s value for each alliance. I find the ratio of the number of dyads with a common dominant ethnic group and the number of possible dyad combination in each alliance. For example, the Treaty of Understanding and Friendship among France, Czech Republic, and Slovak Republic in 1993 has no dyad that shares a common ethnicity and the total possible combination of dyads is 3 (i.e. France-Czech Republic, France-Slovak Republic and Czech Republic-Slovak Republic). As such, its *Shared Ethnicity*'s value is 0 (i.e. $\approx \frac{0}{3}$). In another example, the Declaration by United Nations that formalized the Allies of World War Two was made up of 43 member states, over a range of years beginning in 1942. Of these member states, there are 103 dyads that share the same ethnicity. The total number of possible dyad combination is 903. This results in a *Shared Ethnicity*'s value for the Declaration by United Nations of 0.114 (i.e. $\approx \frac{103}{903}$). Table 4.1 above shows the distribution of *Shared Ethnicity*'s scores of the alliances in the ATOP dataset from 1914-2016.

3.9.5.2 Shared Religion

Major religions in the world today have increasingly played an important role in defining a person's identity as well as state identity. Religions provide guidance to how a person conducts his or her spiritual journey, but many times religions also dictate a person's social, economic and political life. States too are subject to the influence of religions in how they are governed domestically and how they view the rest of the world. For example, the concept of *Ummah* in Islam dictates that Muslims are all subjects of God who are united under the single belief spelled out as words of God in the *Quran*. Saudi Arabia, which is the custodian of the two holiest sites in the religion, sees it as a duty to spread Sunni Islam by funding preachers and mosques around the world. Iran, Saudi's strategic rival, is a Shi'ite Islam powerhouse and has been supporting Shi'ite fighters and communities in many

parts of the world. The influence of the Christian constituent has been proven to have a strong impact on both domestic and foreign policy outcomes of the United States, particularly when Congress is involved. In Europe, many countries are united by their strong Catholic beliefs, which is one of the main reasons why Turkey has had such a hard time becoming part of the European Union. From the social identity theory perspective, this is normal and to be expected. States create their particular in-groups based on the predominant religious beliefs that they share with other states or even sub-state communities. As such, we should not be surprised if religion serves as a component of the state identity and when states share a common religious belief their international conducts and worldviews will be influenced by it.

I include *Shared Religion* as a control variable that aims to test the salience of religious beliefs in determining alliance design outcomes. To compute the *Shared Religion*'s value for each alliance, I define sharing a religion as a condition in which the religion with the largest group of followers is the same between two countries. I use the largest group of followers in a country as a determinant of the country's religion because many countries do not declare an official state religion. I also establish a coding rule that by "religion" I mean a denomination-level system of belief. This is so that I can capture some nuances of the divisions within each religion. As a result, Catholicism and Protestantism are treated as being different, while Sunni and Shi'ite Islam are also treated as distinct. When there is a clearly dominant group that is below a denomination level, I choose to code that instead, in order to capture more nuances. For example, Algeria, Libya and Syria are all majority Sunni Muslim. But Algeria has the Maliki school, which is a sub-sect within Sunni Islam, as the clearly dominant group, i.e. more than 50%, while Libya and Syria are comprised of Sunni Muslims of various schools, without any school claiming the majority. In identifying the historical religious belief for each state, I mainly rely on the *Religious Characteristics of States* dataset (Brown and James, 2018) with supplemental information from *Demographic Statistics Database* (UN Statistics Division, 2018), and *The World Factbook* (CIA, 2018).

After that, I follow the generalized formula for measuring shared identity among states. I find the ratio of the instances of dyads with a common dominant religion

and the number of possible dyad combination, which computes the *Shared Religion*'s score of the alliance. For example, the Arab Language Summit Conference Declaration, signed in 1961, was comprised of 4 states, namely Libya, Syria, Algeria and Yemen. Thus, there are 6 possible dyad combination. Of these dyads, the dominant religious belief in Libya and Syria in 1961 is identified as both Sunni Islam. Whereas Algeria in 1961 is identified as Maliki-Sunni Islam, and Yemen is identified as Shi'ite Islam (Brown and James, 2018). This means that only 1 dyad shares the same religious belief. This results in the Arab League Summit Conference Declaration in 1961 receiving a *Shared Religion*'s score of 0.167 (i.e. $\approx \frac{1}{6}$). Table 4.1 shows the distribution of *Shared Religion*'s scores of the alliances in the ATOP dataset from 1914-2016.

3.9.5.3 Shared Colonial History

Colonial powers imparted many legacies to their colonies. In fact, one of the main premises of colonialism was about the colonial masters attempting to convert the colonized—who were treated as uncivilized and primitive—into those who practiced, or accepted as superior, the colonizers' way of life. These legacies may come in the form of political, economic and socio-cultural influences. Socio-culturally, former colonies' way of life often reflects the culture and social etiquette of their former colonizers, at least among the ruling elite. These are clearly seen in areas such as food choices and sports. For example, Malaysian and Singaporean traditional milk tea, Teh tarik, took inspiration from the tea consuming culture of the British ruling class and was made popular during the colonial times. Football, arguably an English sport, is also extremely popular in Malayasia and Singapore. Assam tea of India became popular because it is imported for consumption of the British elites. Cricket became a popular sport in both India and Pakistan because the colonial masters brought the sport there.

Many former colonies also retain the language of their former colonizers as one of their official languages, along with their own native languages after independence. For example, Malaysia and Singapore, which were colonized by the British Empire for 120 years, still have English as an official language, despite the fact that they also recognized native tongues of the population, i.e. Malay for Malaysia, and Tamil, Malay, and Mandarin for Singapore. In the case of India, English is

recognized as one of the 23 official languages, while in Pakistan both Urdu and English are designated as official languages.

Whether the sentiment of colonial legacies is positive or negative in a formerly colonized country, one cannot deny the ties that exist between the colonizer and the colonized. Colonial relationship and share colonial past help states identify with each other. The degree of familiarity with each other through shared past should build up some level of comfort when leaders hold talks and negotiate agreements. Applying the social identity theory of alliance design to understand the impact of shared colonial past, we should expect to see some differences between the alliance whose member states share colonial history, i.e. either the member states were colonized by the same colonial power or one country was colonizing another party, and another alliance whose member states do not share or share less of the colonial history.

For the 'shared colonial history' sub-indicator, I operationalize shared colonial history as a situation where two countries shared the same colonizer or conqueror at one point in time; or where one country colonized or conquered the other at one point in time. For each alliance, I count the possible paring combination of the member states and count the dyads that have shared colonial history. I record only the colonial ties that are most popular in each alliance. Then I find the proportion and give the 'shared colonial history' value to each alliance in the dataset. For example, the Southern African Development Community (SADC)—that began in 1980, but has become institutionalized with a strong security and political component in 2001—has 14 members with 10 being British colonies at one point in time. The possible dyad combination of the member states of the SADC are 91 dyads. Of these, 45 dyads share ties to the British Empire as its colonies. Therefore, the SADC gets the value of 0.49 for the 'shared colonial history' component.

3.9.5.4 Similarity in Level of Economic Development

Apart from socially identifying with each other, states could also see themselves and one another through an economic lens. States that belong in a similar development level may identify with each other. To this end, I create *Similarity in Level of Economic Development* to capture a potential effect of similarity in economic development level on alliance design. I rely on the historical GDP Per Capita

data by the *Maddison Project Database* (Bolt et al., 2018) and recode each data point into "High", "Medium-High", "Medium-Low", or "Low" levels of economic development, based on the interquartile range of the data. This is to allow for the possibility of matching between dyad members, given that GDP Per Capita is a discrete data with too many distinct values.

After coding the level of economic development for each state in an alliance, I apply the generalized formula for measuring a shared identity among states. I compute the ratio of the number of dyads that share the same level of economic development and the total number of possible dyad combination in an alliance in order to get the *Similarity in Level of Economic Development*'s value for each alliance. For example, the Joint Defense Agreement among Egypt, Syria and Jordan, signed in 1955, has 3 possible dyads. Egypt is identified as having a "low" level of economic development in 1955, while Syria and Jordan are coded as having a "medium-low" level of economic development. This means that only 1 dyad shares the same level of economic development. Thus, the *Similarity in Level of Economic Development*'s value for this alliance is 0.333 (i.e. $\approx \frac{1}{3}$). Table 4.1 shows the distribution of *Similarity in Level of Economic Development*'s scores of the alliances in the ATOP dataset from 1914-2016.

3.9.5.5 Similarity in Political Ideology

Similarity in political ideology between two states tends to enhance credible commitments in international cooperation. Some scholars demonstrate that democracies cooperate more readily with other democracies, while autocracies prefer cooperating with other autocracies (Leeds, 1999; Lai and Reiter, 2000; Weeks, 2008). Mattes also sees the importance of regime similarity in her study of the effect of reputation on bilateral alliance designs by including a variable representing joint democracy between two alliance members (Mattes, 2012b). To this end, I include *Similarity in Political Ideology* as a control variable that captures the effect of Similarity in Political Ideology in an alliance. I rely on the Polity2 score from the *Polity IV Project*, that captures democratic and autocratic patterns of authority, in order to assign each member state in each alliance with its Polity2 score (Marshall and Jaggers, 2017). These scores range from -10 to 10, with -10

denoting the extreme end of autocracy and 10 representing the extreme end of democracy.

I then apply the generalized formula for measuring a shared identity among states to obtain a *Similarity in Political Ideology*'s value for each alliance in the dataset. For example, the Treaty on Collective Security, signed in 1992, by the leaders of 9 states—namely Russia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan—has a *Similarity in Political Ideology*'s value of 0.055 (i.e. $\approx \frac{2}{36}$) because there are 2 dyads that have the same Polity2 score (i.e. -3 for Kazakhstan and Kyrgyzstan, and 7 for Armenia and Belarus) and there are 36 total possible combination of dyads. Table 4.1 shows the distribution of *Similarity in Political Ideology*'s scores of the alliances in the ATOP dataset from 1914-2016.

3.9.6 Other Control Variables

In running the analyses, I also control for covariates that may influence the design of military alliances. To this end, I draw on the insight from previous theoretical and empirical literature in the field.

3.9.6.1 Economic Development Level

Member states in an alliance may share a similar level of development, but this is not the same as the overall prosperity of the alliance. Alliances whose member states have higher economic development level may design their alliances differently from alliances that are comprised of mostly lower-income states. If this factor is salient, we should expect to see higher income states opting for design choices that are more costly because they are able to afford more expensive alliances. To control for this potential effect, I include *Log of Average GDP Per Capita* for each alliance as a control variable.

3.9.6.2 Regime Type

Whether the similarity in political ideology is among autocratic, or democratic members may also matter in the final design of the alliances. Although the debates are far from settled, according to the latest study on the topic by Chiba et al.

(2015) democratic countries tend to form alliance agreements that they can fulfill because democratic leaders may suffer from high audience cost if they cannot deliver on their commitments to allies. This in turn results in alliances—formed among democratic states—that require lesser commitments. To capture the effect of different regime types, I create *Average Regime Type* that records the mean of Polity2 scores of member states in a given alliance.

3.9.6.3 Threat

Threat should be expected to influence the design of military alliances. Countries may design their alliances in order to ensure stronger commitments and reliability from their allies when threat is high. I include a binary variable, *Threat*, to indicate whether the alliance was formed during wartime, which captures whether the alliance is under an immediate threat that may compel members to require deeper commitments from their allies.

3.9.6.4 Existing Alliances

States may familiarize with each other through a process of socialization through many agreements that they sign and are ongoing. States may also find it less compulsory to be comprehensive in detailing their commitments into a new alliance when they have already shared existing alliances with those same members. In an attempt to isolate this potential effect, I include *Existing Alliances* that records the number of alliances that the member states are currently sharing. For a bilateral alliance, sharing existing alliances mean those alliances where the dyad are both signatory parties, whether or not those alliances are bilateral or multilateral. For a multilateral alliance, this means existing alliances where all member states of that alliance are part of. The value of *Existing Alliances* ranges from 0 to 4.

3.9.6.5 Past Alliances

Alliances that have ended for one reason or another may affect how member states sign their next alliance. The higher the number of past alliances means the higher frequency at which states have given up their cooperation. States may design their new alliance that enhances credible commitments, if the number of past alliances

between or among them are high. On the flip side, states may realize that the new alliance would likely fail anyway as such there is no need to sign a costly agreement. In an attempt to control for this effect, I introduce *Past Alliances* that records the number of alliances between or among states that have ended. The value of *Past Alliances* ranges from 0 to 23.

3.9.6.6 Number of Actors

Number of Actors should be expected to influence the design of military alliances. This control variable is drawn from the literature on the rational design of international institutions (Koremenos et al., 2004). *Number of Actors* is different from *Membership Rules*, which I use as a dependent variable in this study. *Number of Actors* is simply the number of actors who participate in the alliance, where as membership is a measurement of how restrictive those membership rules are. As more actors are stakeholders in the negotiation during the alliance formation process, more interests and preferences would have to be accommodated in the final agreement. This may result in a water-downed military agreement. I operationalize this variable as a count variable of the number of member states at the formation of the alliance, starting from 2 states in bilateral agreements to 43 states that were signatories to the Declaration by the United Nations, which formalized the Allies of World War Two.

3.9.6.7 Major Power Presence

In any alliance agreement that a major power is a party to, it is likely that that major power will bare much of the responsibility and underwrite the cost of maintaining that alliance. Major powers have more military capabilities and financial resources to maintain effective alliances. As such, having a major power present in an alliance may lead to a design feature that minimizes the burden of the major power, meaning we should expect to see some features opting for lower cost alternatives. This explanation is based on a theoretical and empirical work, which looks at how major powers prefer alliances that are ambiguous and probabilistic in order to avoid a moral hazard problem with regards to how small states may behave (Benson, 2012). I introduce *Major Power Presence* as a control variable to

isolate this effect. I define a major power status of a state using the Correlates of War Major Power Status coding rules (Correlates of War Project, 2017). If there is at least one major power in an alliance, I assign a value of 1 to *Major Power Presence*. If not, *Major Power Presence* is coded 0. Overall, 49.9% of the alliances have at least one major power as a signatory member.

3.9.6.8 Geographical Proximity

Geographical proximity may affect the design of military alliances. States that are close to each other have more opportunities to engage into conflict with each other. This has been a subject in, or part of, academic studies on war and conflict (Richardson, 1960; Starr and Most, 1978; Diehl, 1985; Bremer, 1992; Vasquez, 1995; Henderson, 1997). As such, when getting into a military agreement, the potential alliance members may design their agreement in such a way that helps reduce the chance for conflict among states that are geographically close to each other. I operationalize *Geographical Proximity* by assigning a value of 1 to each alliance where 75% of the member states are comprised of states within the same region, i.e. they are contiguous to each other or separated by seas rather than oceans, and a value of 0 to each alliance where more than 25% of the member states are from outside the region, i.e. they are not contiguous states or separated by oceans. 76.9% of *Geographical Proximity* is coded 1.

3.9.7 Methodology

The outcome variables of interest in this study are ordinal in nature. The responses can be ranked from lowest to highest and for this study they are low, moderate and high levels of the relevant design features, namely restrictiveness of*Membership Rules*, broadness of *Scope*, level of *Centralization*, complexity of *Formal Rules*, and *Rigidity*. The variables take on a value of 1 ("low"), 2 ("moderate"), and 3 ("high"). We know that a value of 3 is more than a value of 2 and a value of 2 is more than the value of 1, but we cannot say how much they are different from each other because the values have no inherent meaning. They merely provide a rank order of the extent of each design feature. As such, I employ a maximum likelihood model, specifically an ordered logistic regression method to evaluate the

hypotheses in order to help gauge the impact of shared language and other shared dimensions of state identity on different design features of military alliances.

3.10 Model Preparation

3.10.1 Correlation among Independent Variables

Before performing the analyses, it is important to check for potential problems such as multicollinearity where two or more independent variables have high correlations with each other and therefore can be linearly predicted by other independent variables in the model with a high degree of accuracy. Past research suggests strong correlation between linguistic and ethnic identities (Fishman et al., 2013; Giles and Johnson, 1981, 1987; Gumperz, 1982; Heller, 1982, 1992). Table 3.1 shows a correlation matrix between all independent variables that will be used to estimate the models. It appears that *Shared Language* and *Shared Ethnicity* have a correlation of 0.65, which does not exceed the commonly accepted threshold of 0.75, thus the models with both /Shared Language] and *Shared Ethnicity* are likely safe from multicollinearity problem. I then test for the Variance Inflating Factor (VIF), which confirms that the independent variables will not present the problem of multicollinearity. All correlations are below the conventional wisdom VIF threshold of 4. Therefore, we can run the models that include all the aforementioned independent variables.

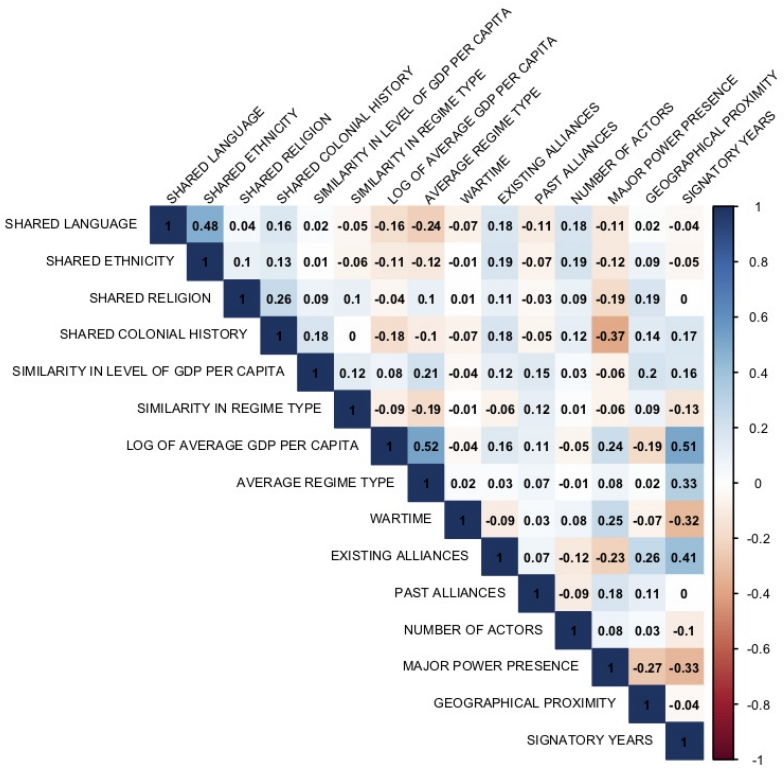


Figure 3.6: Correlation Matrix of Independent Variables

3.10.2 Ordered Logit Models and Proportional Odds Assumption

In order to evaluate the hypotheses of interest, I use an ordered logit regression method—which is appropriate for estimating a model where the dependent variable is categorical and has an ordinal nature—via R-package `MASS` (Harrell, 2014; Venables and Ripley, 2002). In my case, the five dependent variables, each rep-

resenting a feature of alliance design, namely *Membership Rules*, *Scope*, *Formal Rules*, *Rigidity*, *Centralization*, can take three ordinal choices: low, moderate, or high. The composition and underlying information of these dependent variables have been detailed in Chapter 2.

In running ordered logit models, one of the key assumptions that has to be met is the proportional odds assumption, also known as the parallel regressions assumption. This is the assumption that the independent variables have consistent, or parallel, effects across the different categories or levels of the ordinal outcome variables (Williams, 2016). However, this assumption is often violated when researchers deal with real world data and is often ignored—without explanations or attempts to perform alternative modeling techniques—which may lead to misleading conclusions. A Brant test was devised to evaluate the proportional odds assumption of ordinal models and it provides both the overall test statistics for the model and the specific variable that may violate the assumption (Brant, 1990; Schlegel and Steenbergen, 2018). If a model fails the Brant test, then researchers have an option of using a partial proportional odds model where a selected number of independent variables that breach the proportional odds assumption are allowed to affect each category of the ordinal outcome variable differently (Peterson and Harrell Jr, 1990).

In this research, there are five main ordered logit regression models. *Shared Language* as the independent variable of interest passed the Brent test for a specific variable in all five models, which suggests that the proportional odds assumption holds for *Shared Language* across all models and that the effects of *Shared Language* are the same for all categories (i.e. low, moderate, and high levels) of each dependent variable. Furthermore, four out of the five models passed the Brant test for evaluating the whole model that takes into account of all independent variables, including controls, which suggests that the assumption holds for these four models. The model for evaluating *Centralization* fails the overall Brant test, so I have run a partial proportional odds regression as an alternative using R-package `ordinal` (Christensen, 2018), by allowing two covariates, i.e. *Existing Alliance* and *Geographical Proximity*, which fail the Brant tests to obviate the requirements for proportional odds assumption. The result from the partial proportional odds model shows that the effect of *Shared Language* on the level of *Centralization* is

significant and is not substantively different from the effect of *Shared Language* in the ordered logit model. I put the results of the Brent tests from all models and the partial proportional odds model for *Centralization* in Appendix A. I choose to stick with the ordered logit regression's results for all models because there is reasonable confidence that the effects of *Shared Language* do not violate the proportional odds assumption on any of the model, and that the alternative method for the model that violates the proportional odds assumption does not present contrasting result.

3.10.3 Variable Selections

In testing the hypotheses, I relied on past theoretical work and anecdotal expectation in selecting the independent variables to control for the effects of *Shared Language*. The models presented are not the best fit options as I believe that the null results, particularly for variables that represent other dimensions of shared identity, carry important theoretical implications for the research. Nevertheless, including these non-effect independent variables may affect the statistical significance and the magnitude of the independent variable of interest. As such, I carry out a variable selection process to maximize the goodness of fit, while minimizing the number of parameters. I use the Stepwise Akaike Information Criteria (AIC) model selection method (Akaike, 1998; Bozdogan, 1987; Burnham and Anderson, 2004) and present the results in Appendix B. Furthermore, I reevaluate the models with selected variables using partial proportional odds regressions for those that breach the proportional odds assumption. These results are also shown in Appendix A.

The models selected through the Stepwise AIC method show similar conclusions to the full models that I choose to present below. In fact, the effects of *Shared Language* on alliance design features are even more prominent if we select only important explanatory variables that maximize the goodness of fit. Reevaluating some of these best-fit ordered logit models that violate the proportional odds assumption with the partial proportional odds models also show results that do not substantively different from with the full models presented below.

3.11 Results & Discussions

3.11.1 General Observations

Table 3.2 shows the results of the five analyses. Overall, there is considerable support for the *Sociolinguistic Theory of Alliance Design*. The effects of *Shared Language* on alliance design are robust as they are present in all five models, albeit to a varying degree for each of the design features. *Shared Language* is statistically significant at the 0.01 level for *Formal Rules* (Model 3), *Rigidity* (Model 4), *Centralization* (Model 5), holding other variables constant. It is also statistically significant at the 0.05 level for *Scope* (Model 2) and at the 0.1 level for *Membership Rules* (Model 1), holding other variables constant.

The directions of the coefficients of *Shared Language* in all five models also meet the theoretical expectation of language's roles as both a *heuristic* signalling of shared interests and a *functional* tool. As a heuristic identifier of presumed shared interests, *Shared Language* has a negative coefficient on *Membership Rules*, *Scope*, *Formal Rules*, and *Rigidity*, suggesting increasing likelihood for an alliance to be in lower categories as more member states of an alliance share a common language. As a functional tool, *Shared Language* has a positive coefficient on *Centralization*, indicating increasing likelihood for an alliance to be in higher categories as more member states share the same language.

Table 3.2: Ordered logit analyses of the effect of shared language and other dimensions of shared identity on the design of alliances, 1914-2016

	Member Rules	Scope	Formal Rules	Rigidity	Centralization
	(1)	(2)	(3)	(4)	(5)
Shared Language	-1.693^{***}	-1.667^{***}	-1.938^{***}	-0.990^{**}	3.123^{***}
	(0.526)	(0.423)	(0.461)	(0.393)	(0.466)
Shared Ethnicity	0.061	−0.156	−0.751	−1.094	−1.046
	(0.815)	(0.818)	(0.810)	(0.770)	(0.809)
Shared Religion	−0.149	0.165	−0.007	-0.757^{**}	0.055
	(0.555)	(0.393)	(0.403)	(0.319)	(0.276)
Shared Colonial History	−0.097	0.547	0.602	−0.454	0.116
	(0.552)	(0.480)	(0.505)	(0.369)	(0.321)
Similarity in Level of Economic Development	0.143	-0.639^{**}	−0.103	−0.137	0.028
	(0.481)	(0.306)	(0.314)	(0.274)	(0.232)
Similarity in Political Ideology	−0.172	0.896^{**}	0.056	0.427	−0.346
	(0.566)	(0.401)	(0.396)	(0.361)	(0.313)
Log of Average GDP Per Capita	0.680^{***}	0.947^{***}	0.373^{*}	0.786^{***}	0.177
	(0.263)	(0.212)	(0.200)	(0.189)	(0.168)
Average Regime Type	0.071^{*}	0.002	−0.037	-0.055^{**}	0.083^{***}
	(0.042)	(0.026)	(0.026)	(0.024)	(0.021)
Threat	2.399	0.129	-1.559^{***}	-0.677^{**}	−0.060
	(1.631)	(0.371)	(0.370)	(0.336)	(0.354)
Existing Alliances	0.064	0.750^{***}	0.352^{*}	0.104	0.096
	(0.233)	(0.202)	(0.182)	(0.148)	(0.126)
Past Alliances	0.377	0.036	0.163^{**}	0.094	-0.118^{**}
	(0.232)	(0.057)	(0.080)	(0.067)	(0.049)
Number of Actors	-0.241^{***}	0.052	0.031	-0.078^{**}	0.081^{**}
	(0.052)	(0.032)	(0.030)	(0.035)	(0.035)
Major Power Presence	0.261	-1.596^{***}	-0.973^{***}	-0.854^{***}	0.391^{*}
	(0.476)	(0.318)	(0.298)	(0.278)	(0.233)
Geographical Proximity	−0.744	−0.310	0.612^{**}	0.833^{***}	0.096
	(0.612)	(0.313)	(0.303)	(0.284)	(0.266)
Observations	451	451	451	451	451
Notes:	***p < .01; **p < .05; *p < .1				

In terms of magnitude, the effect of *Shared Language* appear largest for *Centralization*. This implies that having a shared language actively played its communicative functional role has a strong positive effect on these design features. Furthermore, the magnitude of the effects of *Shared Language* are relatively large for *Formal Rules* and *Rigidity* and are moderate for *Membership Rules* and *Scope*,

suggesting that shared language with its *heuristic* effect plays a role in alliance design, although not quite as large as its role as a *functional* tool. Additionally, *Shared Language* also dwarfs other shared identity-related variables that are on the same measurement scale, and these variables are not statistically significant. This suggests that *Shared Language* among members of an alliance is the most salient identity that has an effect on alliance design across multiple design features, unlike other aspects of shared identity, namely *Shared Ethnicity*, *Shared Religion*, *Shared Colonial History*, *Similarity in Level of Economic Development*, and *Similarity in Political Ideology* which have no statistically discernible effect on almost all design features.

As the method used for these analyses is ordered logit regression, the interpretation of the coefficients are not as straightforward beyond their direction. Their magnitude can also only be interpreted in relations to other variables with a similar scale. Below I present the predicted probabilities, holding other variables at their mean or mode, for each outcome variable to further explain and highlight the effects of *Shared Language* and other interesting findings. I illustrate these results in a graphical format using R-package `ggeffects`, a visualization tool (Lüdecke, 2018).

3.11.2 Membership Rules

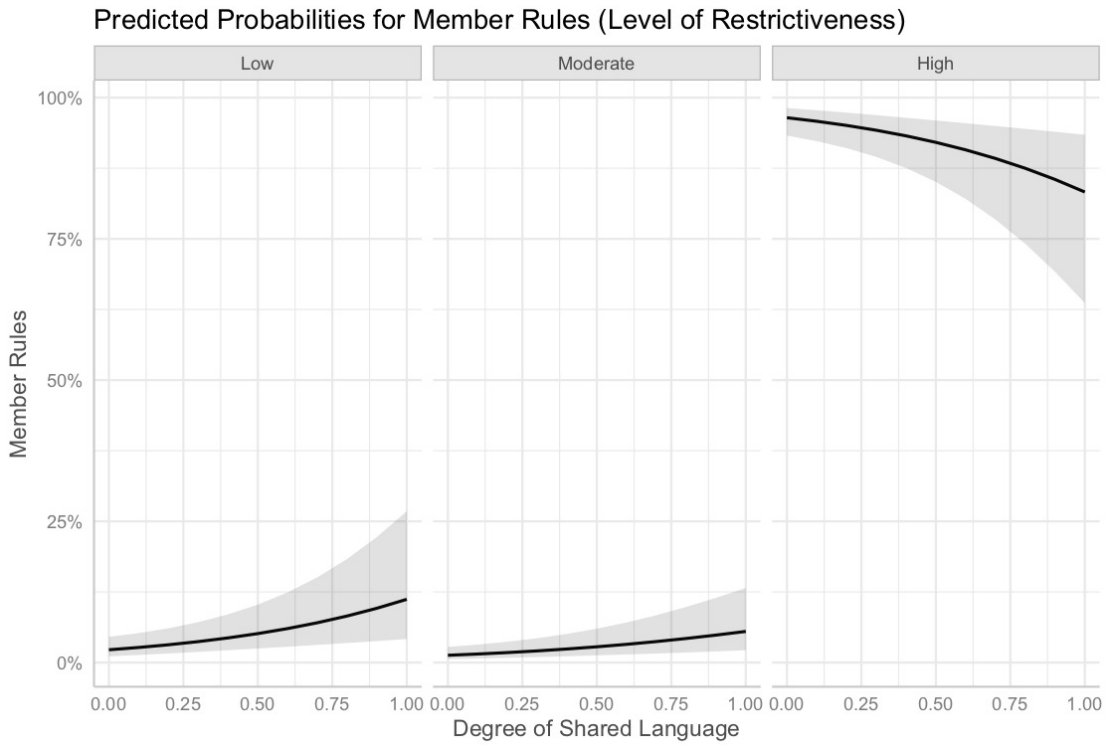


Figure 3.7: Predicted probabilities for low, moderate, and high levels of restrictiveness of member rules, as the degree of shared language increases.

Shared Language shows that the *Socioliguistic Theory of Alliance Design* holds, albeit in relative terms when compared between an alliance that shares a common language and an alliance without a shared language. We reject the null hypothesis that *Shared Language* has no effect on *Membership Rules* at 0.01 significant level and accept Hypothesis 4, which states that the probability that an alliance's membership rules would have a low level of restrictiveness increases when an alliance has higher scores of *Shared Language*. In Figure 3.7, based on the result from Model 1, I show the predict probabilities of an alliance falling into one of the categories as the degree of *Shared Language* among member states increases, holding other explanatory variables at their mean or mode. It can be noticed that the probability that an alliance will have a low level of restrictiveness increases from 2.3% to 11.2% as the degree of *Shared Language* moves from 0 to 1. However, in

absolute terms, the overall probability of an alliance falling in the high level of restrictiveness is still much higher than the probabilities of an alliance falling into the moderate and low levels of restrictiveness throughout the whole spectrum of the degree of *Shared Language*. Substantively speaking, this suggests that member states tend to prefer designing their alliance to have a high level of restrictiveness, by default. This is perhaps the nature of states' preference on how they see clauses involving the governance of membership in alliance design.

3.11.3 Scope

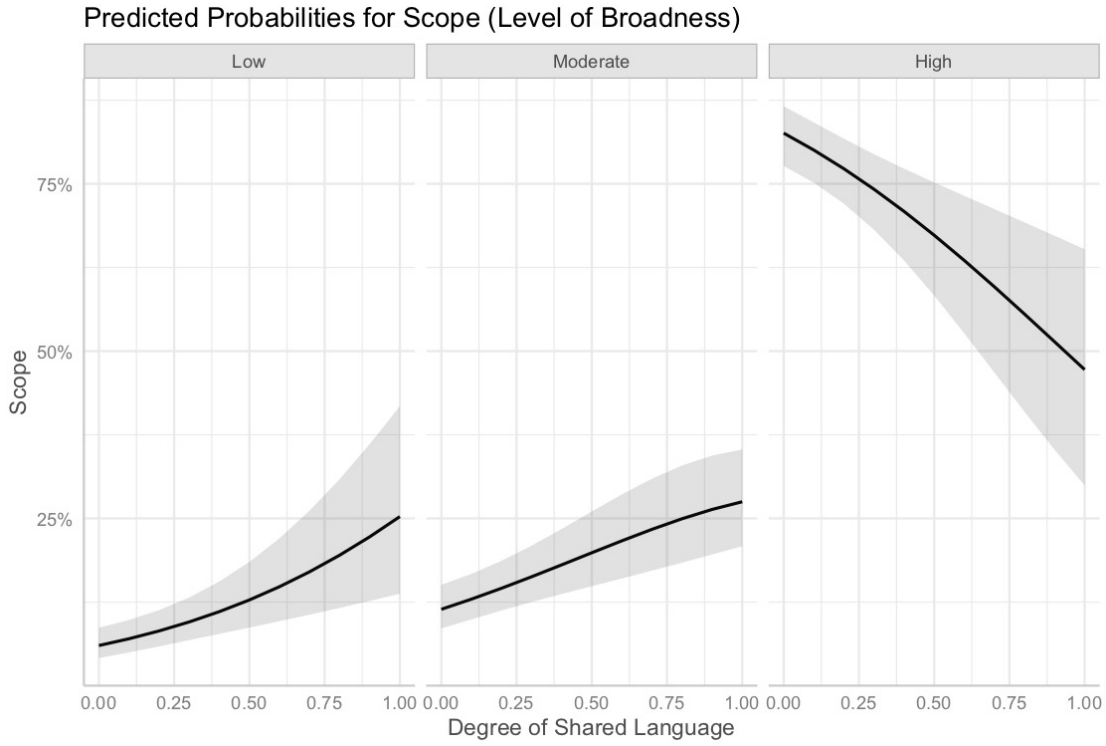


Figure 3.8: Predicted probabilities for low, moderate and high levels of broadness of scope, as the degree of shared language increases.

According to the result from Model 2, *Shared Language*'s effect on *Scope* behaves according to the theoretical expectation of the *Sociolinguistic Theory of Alliance Design*. We reject the null hypothesis that *Shared Language* has no effect on *Scope* at the 0.05 significant level and accept Hypothesis 5, which claims that as

the degree of *Shared Language* increases among alliance members, the probability that the alliance's scope would have a low level of broadness increases. In Figure 3.8, it can be seen that as the degree of *Shared Language* in an alliance moves from 0 to 1, i.e. as more alliance members share an official language, both the probabilities of scope having a low and a moderate level of broadness increase, holding other independent variables at mean or mode, with the probability of being in the low category increasing in at a faster rate with the slope exhibiting a convex shape, as more members of an alliance share a similar language. For the low level of broadness category, the probability of an alliance having such a design feature moves from 6.0% to 25.3% as members of an alliance moves from not sharing a common language to all sharing the same official language. Similarly, the probability of an alliance falling into the moderate level of broadness category increases from 11.4% to 27.5% as the degree of *Shared Language* moves from 0 to 1. In contrast, the probability of an alliance being in the high level of broadness category reduces sharply from 82.6% to 47.2% as member states' degree of *Shared Language* increases from 0 to 1, holding other explanatory variables at mean or mode. The results here are quite startling given the fact that the distribution of *Scope* in the data used in the model skews heavily towards an alliance exhibiting a high level of broadness, i.e. 330 alliances out of 451 or 73.2%, while 65 and 56 alliances out of 451 are categorized as having moderate and low levels of broadness of scope respectively. The findings confirm that theoretical expectation that shared language among alliance members leads to an increase in the probability of alliance's scope having a low level of broadness.

3.11.4 Formal Rules/Decision-making Process

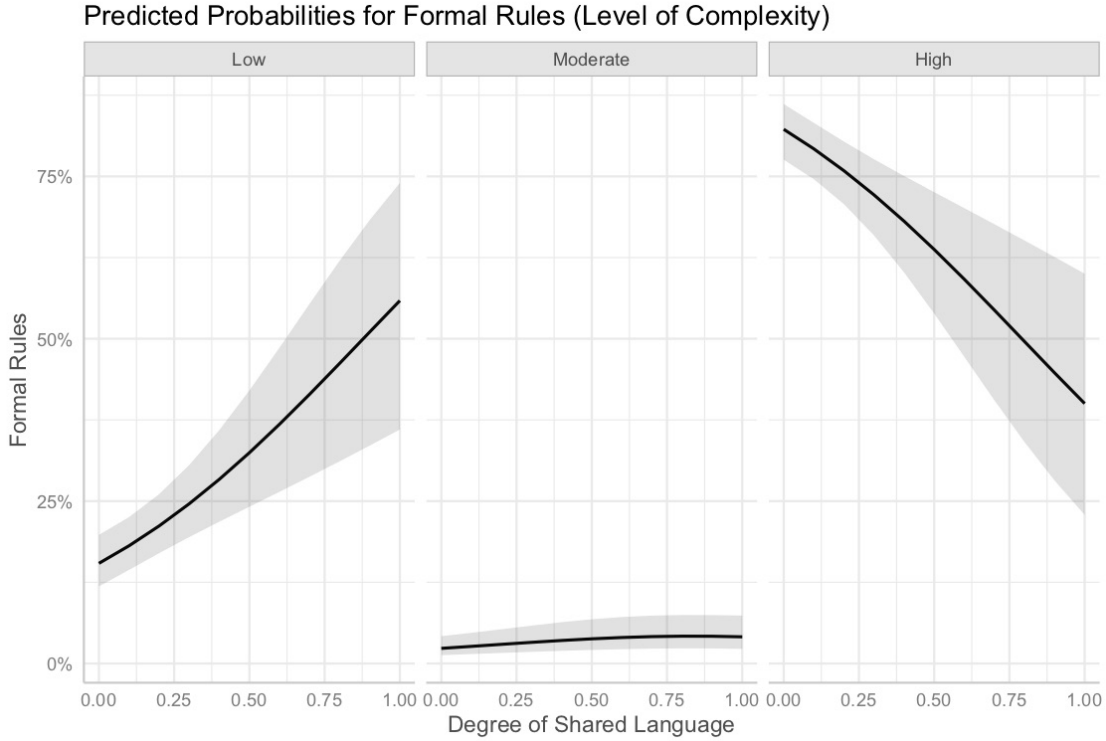


Figure 3.9: Predicted probabilities for low, moderate, and high levels of complexity of formal rules, as the degree of shared language increases.

Figure 3.9, representing predicted probabilities of Model 3, suggests that the *Sociolinguistic Theory of Alliance Design* holds. The null hypothesis that *Shared Language* has no effect on how states design their decision making process in an alliance is rejected at the 0.01 significant level and we accept Hypothesis 6. As the degree of *Shared Language* increases among member states of an alliance, the probability of *Formal Rules* exhibiting a low level of complexity rises from 15.4% when member states do not share a common official language to 55.9% when all member states share the same official language, holding other explanatory variables at their mean or mode. On the contrary, the probability of an alliance having a high level of complexity for its decision making process drops from 82.3% to 40.0% as the degree of *Shared Language* in an alliance moves from 0 to 1, holding other independent variables at their mean or mode. The distribution of alliances

categorized as having a moderate level of complexity in the dataset is negligible, only 9 out of 451 alliances, that it is not possible derive meaningful analysis for this level. Regardless, the predicted probabilities derived for the low and high levels of complexity indicate that shared language is a salient identity marker that contributes to member states' decision to opt for a design feature that has lower cost. Furthermore, unlike *Membership Rules* and *Scope* where the probabilities of an alliance being categorized into the lower cost design options increase as more member states share more common language with each other, the probability that an alliance's *Formal Rules* would have a low level of complexity not only increases as the degree of *Shared Language* moves from 0 to 1, but is also higher than the probability of *Formal Rules* exhibiting a high level of complexity when all member states in an alliance have the same official language, i.e. when the degree of *Shared Language* is 1, holding all other explanatory variables at their mean or mode.

3.11.5 Rigidity

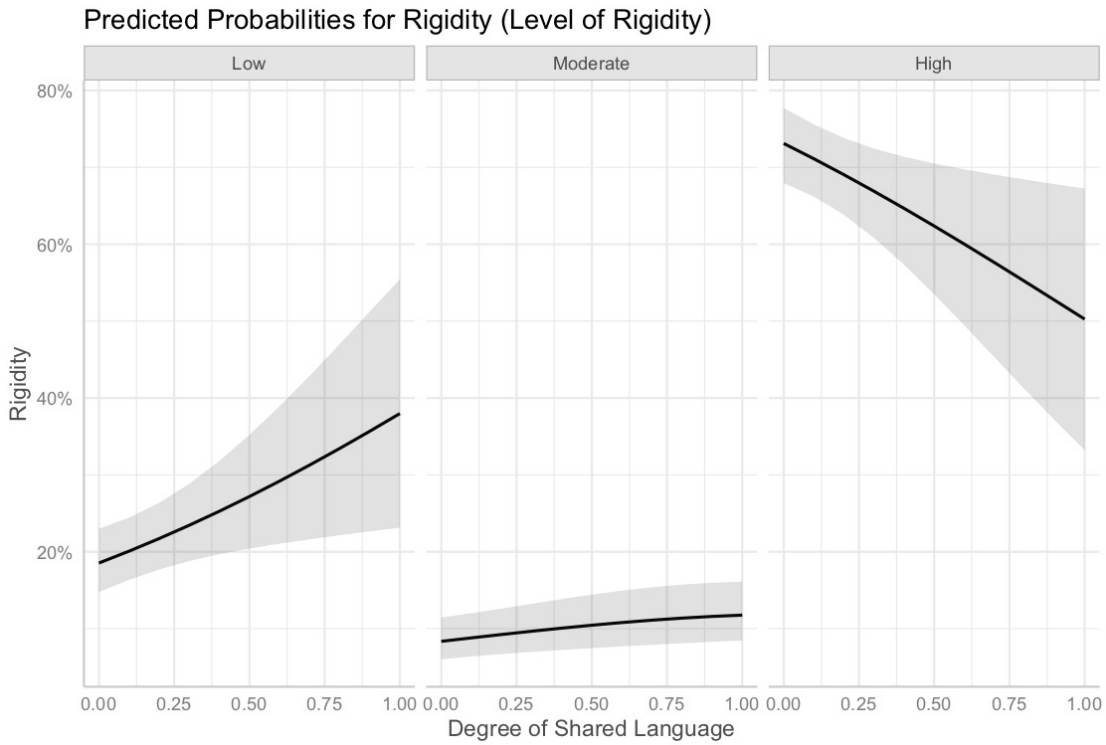


Figure 3.10: Predicted probabilities for low, moderate and high levels of rigidity, as the degree of shared language increases.

Figure 3.10 shows the effect of *Shared Language* on how member states decide on the level of rigidity of their alliance. The results from Model 4 follow the theoretical expectation of the *Sociolinguistic Theory of Alliance Design*. We reject the null hypothesis that *Shared Language* has no effect on *Rigidity* at the 0.05 significant level and we accept Hypothesis 7. As the degree of *Shared Language* within an alliance increases from 0 to 1, the probability that an alliance would exhibit a low level of rigidity moves from 18.5% to 38.0%, holding other explanatory variables at their mean or mode. The probability of an alliance having a moderate level of rigidity remains relatively constant through the whole range of *Shared Language*, holding other explanatory variables at their mean or mode. On the other hand, the probability of an alliance demonstrating a high level of rigidity drops from 73.1% to 50.3% as the degree of *Shared Language* among alliance member states

changes from no member states sharing the same official language to all member states sharing the same official language.

It is important to note that in the dataset out of 451 alliances used in the model 108 alliances exhibit a low level of rigidity, while 36 and 307 alliances are categorized as having a moderate and a high level of rigidity, respectively. Given that the distribution of alliances in the dataset skews towards the high level of rigidity category, it is quite startling that the predicted probability for an alliance falling into the low level of rigidity category is actually higher than the predicted probability for an alliance being in the high level of rigidity category, when *Shared Language* is 1.

The findings suggest that shared language is a salient identity marker and when member states in an alliance share a common official language they prefer an alliance that is less costly by design. For this specific design feature, they tend to sign an alliance that has a low level of rigidity, holding other independent variables at their mean or mode. In other words, the more member states share a common official language, the more they prefer to keep their alliance flexible.

3.11.6 Centralization

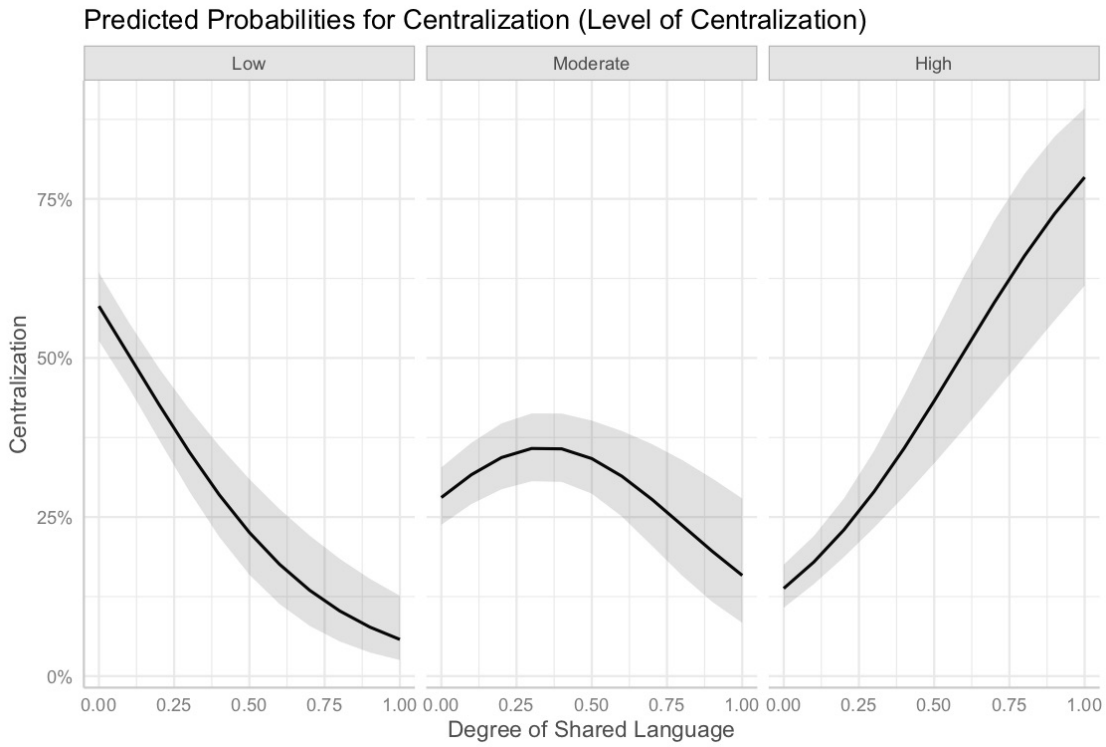


Figure 3.11: Predicted probabilities for low, moderate and high levels of centralization, as the degree of shared language increases.

Model 5 suggests that the *Sociolinguistic Theory of Alliance Design*, which predicts that when shared language has a constructive role as a communicative *functional* tool, it would have a positive effect on the probability that an alliance would exhibit a high level of centralization as more member states in the alliance share as an official language with each other. We reject the null hypothesis that *Shared Language* has no effect on alliance's *Centralization* at the 0.01 significant level and accept Hypothesis 8. This finding is in contrast to the above findings for *Shared Language*'s effect on *Membership Rules*, *Scope*, *Formal Rules*, and *Rigidity*, when language merely serves as a *heuristic* signal of shared interests. When *Shared Language* interacts with an alliance design feature that requires daily communication among member states, language's *functional* role takes precedence and it leads to

a design choice that is most effective at maximizing the security of the member states. In this case, that design choice is a high level of *Centralization*.

As shown in Figure 3.11, as the degree of *Shared Language* increases, the probability that an alliance would have a low level of centralization decreases. When alliance member states do not share any common official language, the probability that it would have a low level of centralization is 58.2%. However, when all member states in an alliance share a common official language that probability drops to 5.8%, holding other independent variables at their mean or mode. In the moderate level of centralization category, the graph exhibits as a curvilinear relationship between the degree of *Shared Language* and the level of centralization with a general downwards trend where the probability that an alliance would demonstrate a moderate level of centralization is 28.0% when no member states share a common official language, and is 15.8% when all member states share a common official language, holding other explanatory variables at their mean or mode. On the contrary, the probability of an alliance having a high level of centralization increases from 13.8% to 78.4% as the degree of *Shared Language* moves from 0 to 1, holding other independent variables at their mean or mode.

3.11.7 Robustness Checks

As mentioned at the start of the chapter, I perform robustness checks on these models by running the Brant tests and run a partial proportional odds regression on *Rigidity* and *Centralization* whose ordered logit model failed the Brant test. I conduct Stepwise AIC variable selection methods on all the models. The results are presented in Appendix A and Appendix B. These models suggest that *Shared Language*'s effect on the design features are strongly robust and that the *Sociolinguistic Theory of Alliance Design* holds.

3.11.8 Arab alliances in the 1950s and 1960s as an example

The inherent nature of the issue addressed by military alliances tend to necessitate that any alliance has a greater likelihood of incorporating design elements aimed at ensuring credible commitments. Thus, one effective approach to substantiate the assertions presented in this paper is to compare alliances that have credible

commitment-eliciting clauses, but differ in the degree of shared language and identify clues that demonstrate the difference in the difficulty in how those agreements were concluded. Holding the design constant, an alliance formed among member states sharing a common language should exhibit a more arduous and intricate negotiation process to establish design choices that manifest stipulations inducing credible commitments, than that of an alliance among member states that do not share a common language. Conversely, we should expect to see the process of arriving at a decision to include credibility-enhancing clauses among member states who do not share a language to be less complex and done in a frank, amicable manner.

To this end, Egypt's formal alliances with some of its regional common-language neighbors from 1950s to 1960s, as part of the country's pursuit of Pan-Arabism, provides an indicative case study when put in comparison with the competing system among non-Arab speaking states in the region.

The Pan-Arabism ideology's core foundation is the Arabic language. The concept owes much of its intellectual formulation to Jurji Zaidan, a Labanese Christian novelist and journalist active in late 19^{th} to early 20^{th} century. Through his collection of stories that Arabs could share, Zaidan was responsible for the development of the Modern Standards Arabic (MSA), a common form of Arabic that has been adopted by Arab nations. As Thomas Phillip notes, "For Zaidan, the existence of the Arabic language... as a functioning means of communication and information for society was proof that an Arab bond existed." (2010, p.85). A web of alliances, both bilaterally and multilaterally, among Arab countries were signed during 1950s to 1960s as part of the effort to unite the Arab-speaking countries. Starting with the Joint Defence and Economic Co-operation Treaty, also known as the Arab Collective Security Pact, in June 1950 among the Arab League members. Then, with the security of Israel and the threat from Communism in mind, the Western powers feared that Arab League and its associated defense treaty would be inimical to their interest. In February 1955, the UK, with the US support, sponsored a competing alliance in the northern part of the region which was first known as the Turkic-Iraqi Pact or the Baghdad Pact, and later became Central Treaty Organization (CENTO), with Iran, Iraq, Pakistan, Turkey, and the United Kingdom. Iraq was the only Arab-speaking member of the Baghdad Pact.

The signing of the Baghdad Pact triggered a strong reaction from Egypt, a major power in the region, because it was seen as an attempt to challenge the Arab unity. Egypt sought to build its own network of bilateral and multilateral alliances among Arab-speaking countries to balance the Baghdad Pact. A notable alliance which embodied Egypt's response was the ESS (Egypt-Syria-Saudi Arabia) Pacts, which was actually comprised of two similarly codified bilateral agreements Egypt-Syria and Egypt-Saudi Arab signed in October 1955.

In terms of design features, these alliances among Arab-speaking states and among non-Arab-speakers in the Middle East at the time were generally designed to include credible commitment clauses. These are expected because, due to the nature of the problem an alliance is meant to address, alliance design tends to favor credible commitment-eliciting choices, as demonstrated by the predicted probabilities from Figure 3.7 to 3.11. But also based on the predicted probabilities, we would expect that relative to an alliance where members do not share a language, the alliance forming effort among states that share a common language should be less likely to arrive at credible commitment-inducing features. Operationally, this should suggest that potential alliance member states that share a common language would find it more difficult, or more cumbersome, to achieve an agreement that contains credible commitment clauses than an alliance among potential member states that do not share a language.

To this end, the Arab Collective Security Pact, despite having achieved credible commitment clauses in all aspects, went through strenuous negotiation process before finally being signed and took a few more years to be ratified. Before the Pact was signed June 1950, it was reported that the drafting of the agreement started in October 1949 after a two-week long meeting (Ross, 1949) and in April 1950 the leaders of the Arab League met for six hours to discuss the content of the Pact (Times of India, 1950). The agreement required four out of seven Arab states to ratify before it came into force and it was not until August 1952 when this condition was met, a two-year delay from when it was signed. It was also reported that a clause was proposed at the last moment by Yemen for the Pact not be applied to defend any power outside the Arab world and this indicated Yemen's effort to limit the opportunity for the commitment to be invoked. Furthermore, the clause on a pledge for future economic cooperation was said to be "loosely

phrased" (Ross, 1950). For over 70 years, the Pact has failed to operationalize many of its stipulations and its efficacy continues to be in question.

Also, there were some indications that the negotiation process of the Egypt-Syria and Egypt-Saudi Arabia pacts, collectively known as the ESS Pacts, was arduous and cumbersome in order to arrive at their final design structure. The ESS Pacts were first discussed, and agreed on in principle, in March 1955 following a three-hour long meeting among the leaders, but the effort did not yield an actual signing until October 1955. The negotiation and the formation process was said to follow months of "strenuous diplomacy" among the participating states (Doty, 1955). Gamal Nasser, the Premier of Egypt, was Practically speaking, Western diplomats in that era commented that the value of the Egypt-Saudi Arabia Pact would simply be limited to a propaganda because Saudi Arabia was regarded as a liability militarily (New York Times, 1955) and some observers during those days felt that Egypt was merely establishing a "paper horse" (Caruthers, 1956). To the extent that there was an effect, it was mainly a psychological opposition of a few nations strewn together by a linguistic bond against the failing unity in the region. So, materially, there was little reason for these Pacts to be signed in the first place. In line with the theory developed earlier, the only feature that was repeatedly espoused by the leaders during the period leading up to the signing was the establishment of the joint military command, which signaled a priority given to *Centralization* over other design features. However, it was claimed that the joint command of, at least, the Egypt-Syria part of the Pacts was "nominal" and "proved to be a fiction" during the Six-Day War in June 1967 when the Egypt and Syrian forces failed to coordinate and the generals of the two forces had almost no contact with each other (Center for Israel Education, 1966).

On the contrary, the negotiation process of the Baghdad Pact, whose members do not share a common language and whose design features ended up including credible commitment clauses, specifically having a high level of complexity of *Formal Rules* and a high level of *Rigidity*, appeared to be much less strenuous compared how rival Arabic-speaking alliances, namely the Arab Collective Security Pact and the ESS Pacts, were agreed on. It is quite evident that the two main parties on the Baghdad Pact, Turkey and Iraq, had some lack of trust. Despite Iraqi Prime Minister Nuri Said's ability to speak Turkish as a second language

coupled with his stint at the Military Academy in Istanbul, he reportedly "did not remember his past experience with the Ottomans particularly favourably" (Sever, 2008, p.130) and that Nuri still held suspicion of Turkish irredentism (Yesilbursa, 2004). Therefore, we should then expect their alliance to contain credible commitment clauses and that these were relatively easier to achieve during the negotiation process. And there were evidences suggesting as such. Reportedly, in October 1954, Nuri and Turkish Premier Adnan Menderes met in Istanbul to discuss their bilateral relations. At first Nuri did not believe that Turkey shared the same interest with Iraq in containing the Jewish expansion. Nuri assumed Menderes was more pre-occupied with the Soviet Union and was even delinating that Iraq was considering a security pact with Pakistan. Menderes then requested that Nuri and himself exchange written *procès verbaux* to share with each other concerns of the region from each of their own perspective. Then, they engaged in "frankest manner to narrow field of disagreement" and established a common understanding. Nuri's week long visited to Istanbul ended with Nuri and Menderes agreeing on a Iraqi-Turkic pact with Nuri reportedly willing to sign in immediately, when Menderes suggested that the agreement be inked in Baghdad during Menderes' return visit to Baghdad (Warren, 1954). In January 1955, Menderes visited Baghdad and a communique was issued stating that the negotiation had been carried out in "a most friendly atmosphere" which resulted in full agreement among the parties and that they would move to swiftly "conclude a pact as soon as possible" (Manchester Guardian, 1955). In a little over a month after the initial meeting, in February 1955, the Baghdad Pact was signed and it was ratified two days later. United States and Britain were reportedly both surprised by the Baghdad-Istanbul decision to conclude a formal alliance, which neither of them had not expected, particularly with such binding commitments (Yesilbursa, 2004).

3.11.9 Conclusion

The results from the five models suggest evidence in support of the *Sociolinguistic Theory of Alliance Design*. A shared language among states will increase the probability that the members will choose design choices that are less costly to maintain, which in turns means that they will be more likely to opt for design

features that signal less credible commitment clauses, relative to the probability that states without a shared language will opt for similar design choices. Conversely, the likelihood that an alliance with a common language exhibit credible commitment clauses, signifying a higher form of cooperation, will increase relative to the likelihood that an alliance among members who do not share a language adopting credible commitment-inducing articles. Because states that share the same language also presume that they have shared interests, therefore when they engage in international commitments that require more burden in terms of monetary, time and other resources, the shared language will serve as a *heuristic* signal that will encourage states to default on lower cost design choices since states see less necessity to do otherwise, given the presumption of shared interests. In other words, a shared language discourages states from achieving a higher cost design choices, which may be materialized in a negotiation process that is more strenuous to finalize. This observation is true to four of the five dimensions of alliance design features, namely *Membership Rules*, *Scope*, *Formal Rules* and *Rigidity*. However, there is an anomaly which is explained by another role of language, i.e. as a *functional* tool in aiding communications. For *Centralization*, states that share the same language will tend to choose a design choice that represents a high level of centralization, which indicates a deeper, more costly form of cooperation. This is because *Centralization* is a design feature where language has a functional usefulness in its everyday operational situation. When communicating in the same language is useful, the barrier to cooperation is reduced, which in turn encourages signatory members to achieve a design that indicates a deeper form of cooperation. This is in contrast to other alliance design features, i.e. *Membership Rules*, *Scope*, *Formal Rules* and *Rigidity*, where sharing a language has no tangible and easily identifiable utility, which enables language's *heuristic* role to affect the design choices for these features.

Chapter 4

Shared Language and Alliance Duration

4.1 Recapping and the Third Puzzle

When states share an official language, they have higher tendency to also share alliance ties. Furthermore, among the different identities that states may share, language appears to be the most salient in encouraging states to maintain alliance relationships. States also tend to opt for defensive alliances rather than offensive ones when they share the same language. I argue that we observe these phenomenon because of a few reasons. As social identity theory predicts and social constructivism would agree, humans tend to favor those who are like them. We discriminate against those whose perceived categorization is different from us. We tend to prefer cooperating with and defend those who are similar to us, while exaggerating the differences among those are dissimilar to us. Given that language is among the most important identity markers of the nation-building process and states are a group of people, a shared language among states helps increase the likelihood that states will maintain alliance relationships.

However, there are two rationally-oriented explanations that contribute to the effect we observe. Firstly, a shared language plays a *heuristic* role in that it affects how states perceive their counter-party's interests and goals in the international arena. The bond through this most salient identity marker creates the assumption that the two states also share mutual interests and goals. Because of this calculation, states with a shared language have higher likelihood to maintain alliance ties

and they seek to protect these interests and goals more through defensive alliances. Secondly, a shared language serves a *functional* role as it helps facilitate the negotiation and the maintenance of the alliance between two parties. The perceived ease in conducting the affairs of the alliance helps bring the two parties to share alliance ties.

Compared to the effects of shared ethnicity, religion and colonial history, a shared language has the strongest impact in increasing the likelihood that states will maintain alliance ties. I argue that this is due to the fact that a shared language plays the most meaningful role as an identity marker of a national so it has the most impact on leaders' decision to maintain alliance ties as explicated by both the social identity theory and the *heuristic* role explanations. On top of that, language is the only identity that serves a *functional* role in the affairs of alliance as such it has an outsize impact on states' decision to maintain alliance ties between states that share the same language.

While states that share the same language have higher likelihood of maintaining alliance ties, those alliances tend to have to go through a long, strenuous negotiation process before arriving at design choices that would ensure credible commitments. A shared language among states lower the likelihood that they will decide on design choices that indicate a tighter, more costly cooperation, relative to the probability of states that do not share a language would have arrived at that form of cooperation. While *Membership Rules* in alliance design are typically restrictive in nature, a shared language lowers the likelihood that the alliance will be categorized as having a high level of restrictiveness. The *Scope* of an alliance can have a varying degree of broadness. Despite the fact that alliances tend to exhibit a high broadness of scope by and large, having a shared language means that the signatories will have lower tendency to agree on a design that has a high broadness in scope. *Formal rules* can have different levels of complexity. An alliance with a shared language identity tends to opt for a design choice that has a low level of complexity. Rigidity of the alliance, which captures how inflexible the rules are, can also come in various levels. A shared language tends to discourage a high level of rigidity in favor of a low level of rigidity. These observations hold true for these alliance design features for which a shared language has no significant operational role in the conduct of their daily affairs. However, for Centralization which is an

alliance design feature for which a shared language can serve a meaningful role in helping facilitate the daily operation, alliance members with a shared language will tend to select the design choice that indicates a high-level of cooperation.

Social identity theory and social constructivism may predict that states with a shared language will cooperate better as such we should expect the design features of their alliance to exhibit a tighter and more costly form of cooperation. However, a similarity in language only helps maintain alliance ties, but does not help with achieving designs that indicate credible commitment-inducing clauses. I argue that we observe the opposite effects of what social identity theory and social constructivism may have conjectured in four of the design features–namely membership rules, scope, formal rules, and rigidity–because the *heuristic* role of a shared language creates a phenomenon where states assume they share mutual interests and goals so they see less necessity to form high-cost agreements that would have been needed to ensure credible commitments without that assumption. For these design choices, language is not so relevant or useful to the daily operation of alliance affairs so its *heuristic* role dominates. On the other hand, centralization is a design feature that requires daily interactions among civil servants of the signatory members. For this feature, language's *functional* role dominates because it helps lower the cost of achieving a more cooperative design feature. Therefore, states that shared the same language are more willing to adopt a higher degree of centralization.

This chapter seeks to extend these findings further and looks to understand how shared social identities, specifically shared language, among member states of a military alliance affect its duration, specifically the likelihood that it will terminate as a result of violation.

The chapter will contribute to the literature through its engagement with the ongoing, broader research agenda that deals with compliance and violation of international agreements by bringing in a series of identity variables that have been overlooked by rational functionalist scholars. Unlike constructivist scholarship, however, I conceptualize and operationalize identity variables in such a way that my research still falls under the paradigm of the rational design of international institution. Specifically, this chapter fills a major void left by past scholars who have studied alliance duration and its termination by investigating the effect of

shared identities among states on whether they hasten the abrogation, or lengthen the life of an alliance.

4.2 Summary of the Argument

Building off insights from past empirical research (e.g. Gaubatz, 1996; Reed, 1997; Bennett, 1997; Leeds and Savun, 2007; Leeds et al., 2009) that explore a whole range of potential reasons that may affect alliance longevity, I show that, among many identities that states may share with their co-signatories in an alliance, shared language is extremely salient in its effect on the duration of an alliance. The result is robust when tested against different model specifications. While we might assume that states which share the same language, or other identities, would want to prolong their international security commitments, I find that an alliance whose member states share the same language has higher probability to terminate by an opportunistic abrogation of the signatory parties and are expected to be more short-lived when compared to an alliance whose member states do not share the same language, controlling for all other variables. Specifically, I found that an alliance of which all the member states share the same language is expected to last approximately 9.9 years short than an alliance whose member states do not share the same language. In terms of the hazard rate, an alliance with all co-signatories sharing the same language is associated with 138% increase in the hazard of opportunistic abrogation, compared to when members of an alliances all speak different official languages.

Consistent with the argument presented in the preceding chapters, I contend that we observe this phenomenon due to the significant "heuristic" role of language—going beyond its "functional" aspect—that shapes certain assumptions about the likely behavior of alliance counterparts throughout its duration. Given the rational nature of states, a reduction in the perception of uncertainty, stemming from the belief in shared interests, makes them more amenable to entering into an alliance with that particular state.

However, the presumption of shared interests, upon closer examination during the course of alliance activities, ultimately proves to be false. Consequently, a

state realizing that its interests are, in reality, not mutual would then seek an opportunistic abrogation of its alliance commitments.

Additionally, controlling for multiple shared identity characteristics and other potential factors that may influence alliance duration, I found that shared political ideology among member states, the presence of a great power as a member state, the change in international power, and the formation of new alliances reduce the expected duration of an alliance and increase the hazard rate of opportunistic abrogation. On the contrary, an alliance with wealthier states and the increasing size of an alliance seem to be the only two factors that may extend the expected duration of an alliance and reduce the likelihood that an alliance would terminate via violation.

4.3 Compliance and Violation of International Agreements

This study integrates itself and builds off a larger body of research that deals with treaty compliance and violation. Why do states comply or violate formal international agreements? This question has received significant interests from international law and international relations scholars since the beginning of the field itself. The answers from the early part of the twentieth century onward can be roughly grouped into four categories: realist, functionalist, domestic linkage, and constructivist views.

For realists, international agreements have never had sufficient explanatory power to explain why states maintain their international commitments. These scholars argue that states comply with a treaty they signed because they would do so anyway, even in the absence of that treaty. It is simply in their self-interest to behave that way internationally with or without the agreement (Downs et al., 1996). To these scholars, there is an overarching force that dictates states' actions in the international arena and that is not the international law regime. Realists give much more weight to the material power of states in determining the dynamics of international relations (Morgenthau, 1948; Mearsheimer, 1994). More powerful states will have more say in how the world functions. As such, compliance to–or violation of–a particular treaty is merely epiphenomenal; that is, state's behavior

rather reflects the balance of power in international politics, and its action is not a result of the design, the rules or any enforcement mechanism in that treaty. Aron (1966), a French political theorist, sums up the criticism of international law by this group of scholars as follows, "If treaties are the source for international law, it is because the subjects of the law are states. But by the same token, major historical events, those by which the states are born and die, are external to the juridical order." (See also Tillema and Wingen, 1982; Bork, 1989; Grieco, 1990; Goldsmith and Posner, 2005)

Another set of explanations employs a rational functionalist approach to explain why states comply with formal agreements. For these scholars, countries committed to formal international agreements because they believe that the benefits of cooperation and compliance outweigh the costs of non-cooperation and non-compliance. Furthermore, as long as the parties gain more from maintaining the agreements than abrogating them, they will continue to adhere to the stipulations spelled out in those agreements. For states, the costs for staying in the agreement may not only be in terms of monetary cost, but may also be in terms of costs that are less measurable, such as fear of losing international reputation and fear of retaliation (Keohane, 1984; Simmons, 2000; Guzman, 2002; Goldstein et al., 2007; Guzman et al., 2008). Unlike the realists who view 'power' as the central variable in their analysis of international interactions, the rational functionalist scholars see 'interests' as having the most weight in explaining states' compliance to international treaties. Furthermore, some of these scholars argue that the design of the agreement is important in maintaining compliance and signaling credible commitments. As discussed in earlier chapters, the design features of international agreements such as membership rules, scope, decision-making rules, level of flexibility and degree of centralization is viewed as having a vital role in encouraging compliance and discouraging violation of the agreement, according to scholars in this tradition (Koremenos et al., 2004). Even how the agreement is written, whether its stipulations are codified as hard- or soft- law or whether its clause on duration is finite or not, plays a role in determining compliance (Abbott and Snidal, 2000; Koremenos, 2005). Furthermore, rather than merely complying with the agreements that were originally agreed on, oftentimes states can actively engage international organizations to achieve its objectives (Abbott

and Snidal, 1998). On the other hand, international agreements, through their institutionalized bureaucratic apparatus, may actively engage states and mediate their conflicts, which ultimately helps in maintaining compliance (Mitchell and Hensel, 2007).

Then, there are studies that treat states' decision to agree on a treaty and staying in one as a function of domestic characteristics, particularly regime type. This line of argument traces its roots to the liberal theory of international relations. Scholars in this tradition believe that democratic regimes behave differently in the international arena from non-democracies. In fact, they have shown that democratic regimes are more likely to comply with international obligations. Slaughter (1995) argues that "the most distinctive aspect of Liberal international relations theory is that it permits, indeed mandates, a distinction among different types of States based on their domestic political structure and ideology." She extends this notion further in her later research and asserts that the future of international law is domestic, meaning that whether states comply or not largely depend on the domestic conditions and designers of international legal regimes must design these instruments such that they help build local capacities to comply (Slaughter and Burke-White, 2006). McGillivray & Smiths (2000), employing the 'audience cost' logic, asserts that in democracies the public is able to punish the leaders via elections when they violate international commitments. Other scholars point out that democracies tend to comply better with international trade agreements (Mansfield et al., 2002), human rights regimes (Hathaway, 2002; Hafner-Burton et al., 2011; Von Stein, 2016), and environmental commitments (Neumayer, 2002), among others. Still, there are those who disagree that the special qualities of democratic states means higher likelihood of compliance to international commitments. Busch (2000) shows that dyads of countries that are highly democratic tend to not comply with GATT rulings. Simmons (2000) contends that democracy contributes little to nothing to the adherence to Article VIII of the IMF among member states, while a strong domestic rule of law does. On the other hand, Dai (2006) attempts to reconcile the contrasting views on the role of liberal democratic characteristics and compliance to international regimes by urging scholars to consider the nuance of the liberal argument. She points out that democratic states' compliance to

international agreements is conditional on the political attributes of competing interests, while Rickard (2010) shows that different electoral systems in democratic countries may affect states' compliance or non-compliance to the GATT/WTO regimes.

Constructivists treat compliance to international agreements as a function of not only power and interests, but also of norms, values, identities, meanings and purposes that the signatory parties assigned to them. They argue that international organizations and regimes cannot be understood without considering the sociological nature of their development and evolution (Kratochwil and Ruggie, 1986). As such, whether states comply with international obligations, or not, depends more than just their utility calculation, fear of retaliation, aversion to loss of reputation, or other more measurable cost-benefit analyses. Scholars in this tradition also believe that states can be socialized into complying more to international laws through diffusion of norms or other persuasive strategies of the propagators on those laws. Franck (1995) claims that how states perceive 'fairness' of the international rules help determine their compliance. It is possible that states would obey rules that are powerless and without an enforcement mechanism because they view the rules as legitimately derived and fair to them. Chayes & Chayes (1998) argues that it is the iterative process of discourses among the parties involved, and also the public that help maintain compliance. Similarly, Brunnée and Toope (2010) emphasizes the importance of legitimacy and the reiterative process of the legal regimes in encouraging compliance. Sometimes, this is known as the 'acculturation' process where states are socialized, through various mechanisms, into adopting beliefs and behavioral patterns of their peers and culture (Goodman and Jinks, 2004; Smith, 2013). Other times, socialization can take a form of normative persuasion that aims to nudge states' actions into a certain direction (Alkoby, 2008; Checkel, 2001; Durkee, 2013; Tobin, 2010; Risse, 2000).

Having reviewed the debates within the literature on compliance and violation of international agreements based on IR paradigms, a few observations are worth further discussion. Firstly, it should be noted that these divisions are not always apparent. For example, the scholarship on socialization, oftentimes, resorts to incentive-based rational choice and domestic-quality related explanations

to demonstrate the mechanism of how socialization elicits compliance to international norms and agreements. For example, Risse (2000) demonstrates through his proposal of 'logic of arguing' that governments which have violated human rights norms can be rationally persuaded to change preferences after argumentative exchanges with transnational advocacy networks. He argues that states make tactical concessions to regain international legitimacy and foreign aid and in the process end up internalizing and accepting those norms. Checkel (2001) tries to bridge the rational and constructivist literature divides by arguing that the effectiveness of socialization, specifically argumentative persuasion, is conditional on domestic institutions and historical contexts. Bayram (2017) demonstrates through a quantitative approach that past experiences of the political leaders–whether they exhibit high degree of cosmopolitan social identity or not–affect in their sensitivity to compliance costs. However, despite increasing scholarships that attempt to explicitly bridge the divides, the field is still nascent in its embodiment of an eclectic approach to answer the question of why and when states would comply with international commitments.

Secondly, despite a rich research tradition on treaty compliance and violation, there is a dearth of studies that engage directly with how shared social identities affect the states' decision to comply. To the extend that rationalist scholars care about shared identity, they are engrossed in the Liberal peace theory that focuses on how shared political structure and ideology of states affect states' decision to comply as they participate in international regimes. None of the studies on compliance engage empirically with other dimensions of shared identity such as language, religion, colonial history, or even level of economic development. As for the constructivist paradigm, identity is treated as more of an ex post variable that is shifted and shaped during the course of states' interaction in the international society, rather than an ex ante factor whose impact has been endogenous since the advent of the agreements.

Thirdly, while non-compliance does not always lead to the termination of the international agreement, the most extreme result of non-compliance is the abrogation from the treaty by one or more member states before the agreed end date, or before the fulfillment of the international obligations, necessitating the collapse of the the agreement. Studies on compliance and violation tend to look at cases

where states fail to comply in a moderate sense, but rarely do we see research that focuses on extreme non-compliance that leads to treaty termination. To the extend that we see such studies, they are usually case specific or delve into the legal technicalities of international laws, but we do not see many studies that attempt to generalize causes of treaty termination, or factors that extend the durability of international agreements (Aufricht, 1951; Cohen, 1963; Graham Jr, 1988; Koremenos, 2005, 2019; Macdonald, 1955; Nyarko, 2019).

4.4 Alliance Violation and Termination

As a subset of the scholarship on international agreements, formal military alliances have received significant interests among IR scholars. Defined by Leeds et al. (2002) as "written agreements, signed by official representatives of at least two independent states, that include promises to aid a partner in an event of military conflict, to remain neutral in the event of conflict, to refrain from military conflict with one another, or to consult/cooperate in the event of international crises that create a potential for military conflict," formal military alliances and the theoretical and empirical research agenda around them have proliferated since at least the late 1970s.

Studies on the formation (e.g, Duncan and Siverson, 1982; Gibler and Wolford, 2006; Kimball, 2006; McGowan and Rood, 1975; Morrow, 1994; Smith, 1995; Walt, 1985), the effectiveness (e.g, Johnson and Leeds, 2011; Johnson et al., 2015; Johnson and Joiner, 2019; Kenwick et al., 2015; Leeds, 2003b,a; Morrow, 2017), the design (e.g. Chiba et al., 2015; Mattes, 2012b; Rapport and Rathbun, 2020) and the compliance and violation of military alliances (e.g. Bennett, 1997; Leeds and Savun, 2007; Leeds et al., 2009; Long, 2015; Reed, 1997) have made up an important part of the research tradition on alliances as international institutions. This study integrates itself into the alliance compliance and violation research agenda, which in turn engages a larger set of scholarly debates on compliance and violation of international agreements.

Specifically, this paper is interested in the extreme cases of non-compliance and violation, meaning those agreements that were terminated because one or more parties reneged on the commitments. The alliances that ended this way are

a subset of alliances that have terminated, which may alternatively have ended because parties negotiated a new agreement or because the commitments were fulfilled. To this end, several studies have attempted at discerning the factors that either influence the duration of alliances, or directly causing the termination. Gaubatz (1996) shows that alliances between democratic states lasted longer than alliances between non-democracies, or alliances that mixed between democracies and non-democracies. Reed (1997) cross-validates Gaubatz's findings with a different research design and operationalization of democratic measurement and found similar results. While Gaubatz and Reed focus on democratic similarity as the main explanatory variable,

Bennett (1997) specifically explores various reasons for alliance dissolution. His findings on that the democratic alliances tend to have longer duration are consistent with those of Gaubatz's and Reed's. But Bennett also finds that change in allies' capability and change in states' security positions have significant negative impact on alliance duration. Bennett's innovation in methodology recognizes the time-varying nature of the covariates and he breaks the alliance duration into five-year intervals to account for the changing characteristics of the alliances during the course of their active years.

Building on these prior works, Leeds and Savun (2007) major contribution is to differentiate among different types of alliance termination. They investigate only those cases that collapsed when one or more states abrogated the agreements before the agreed end dates. Their conceptualization of the changing characteristics of the alliances and their environment is also novel. They account for the time-varying covariates using one-year time intervals, instead of five-year time intervals like Bennett's, and define a changed characteristic as the difference between when the alliance was first signed and the subsequent active years of the alliance. However, unlike Bennett's study, Leeds and Savun limit their cases to only bilateral alliances where as Bennett includes both bilateral and multilateral alliances. Similar to past research, Leeds and Savun discover that the change in the security positions of the alliance members plays a significant role in shortening the life of an alliance. Moreover, the change in domestic political institutions the formation of new outside alliance by members also hasten the termination due to violation of the commitments. On the other hand, alliances among democracies seem to

last longer, thus having lower likelihood of ending through violation. Another interesting contribution by Leeds and Savun is that they include design features as determinants of alliance duration. They find that agreements that includes non-military cooperation tend to have longer life with lower probability of ending in violation, while alliances that require peacetime military coordination would have higher hazard rates, i.e. shorter life. As an extension to Leeds and Savun (2007), Leeds et al. (2009) employ a slightly different research design to delve more into the domestic political changes that may influence the termination of alliances. They are interested in discerning the probability of pre-mature abrogation and not specifically in investigating the duration of alliances. Using a bilateral alliance dataset, they argue and show that in non-democracies the changes in societal supporting coalitions tend to lead to pre-mature abrogation the alliance agreements before their scheduled end dates. However, this effect is not significant in alliances among democratic states. In sum, they conclude that the democratic institutions help moderate the impacts of political changes and help states maintain international commitments.

While all these past studies have their own strengths and weaknesses, a common gap in these analyses is that they are driven by a research paradigm that tends to give out-sized weight to explanatory variables that are the workhorse of traditional realist, rational functionalist, or liberal domestic institutionalist arguments. Missing from the theoretical and empirical perspectives as these scholars investigate determinants of alliance duration and termination are hard-to-quantify factors that are more commonly employed in the social constructivist literature. We should not discount the effects of socio-cultural characteristics in influence alliance duration and how an alliance might terminate. This study seeks to fill in this major void in the research tradition on alliance duration and its termination. It aims to investigate how shared identity–an important consideration in many international relations puzzles–among member states in an alliance may affect the duration of an alliance that ends through pre-mature abrogation. Specifically, I am most interested in showing that shared language is an important negative determinant of alliance duration and encourages pre-mature abrogation. Additionally, I plan to include various covariates that have been missing in past studies, but may theoretically have an impact on how long an alliance would last in order to

build a more complete explanation of factors that influence pre-mature ending of an alliance.

4.5 Shared Language as a Determinant of National Identity

The main argument for this paper rests on the theoretical foundation developed in the earlier chapters that shared language is arguably the most salient identity marker among all other dimensions of shared identities that two or more individuals or communities may share. As Bucholtz and Hall put it,

> among the many symbolic resources available for the cultural production of identity, language is the most flexible and pervasive. The fact that so much scholarship on identity in sociocultural anthropology draws on linguistic evidence –such as life stories, narratives, interviews, humor, oral traditions, literacy practices, and more recently media discourses –attests to the crucial if often unacknowledged role language plays in the formation of cultural subjectivities (2004, p. 369).

Extending this logic beyond an individual-level or a community-level unit of analysis to a state-level characteristic in the international system, it should not be difficult to imagine the role that language may play as a marker of national identity as leaders interact in the international arena. According to a survey by Pew Research Center (Stokes, 2017) which collected 14,514 responses from 14 countries, there is a strong agreement that language is the cornerstone of national identity. The respondents were asked to rate how important they think being able to speak a dominant language of their country in being truly a national of that country. The majorities of the respondents in all countries surveyed indicate that in order to be considered as a true national of a particular country, it is very important to speak the dominant language of that country. Among the European countries surveyed, 77% is the median responses that say language is very important to national identity, while 70% of the Japanese, 70% of the American, 69% of Canadian respondents think similarly. This is in contrast to responses on whether they think religion is an important quality in defining their national identity. Among

the countries polled, merely a median of 15% believe that religion is very important for being a true national. Only in Greece that the majority (54%) indicate that being Catholic is very important to being a Greek. Respondents in these countries even agree that language is more important than birthplace in determining one's national identity. With the exception of Japanese nationals who are more than 50 years old, less than 50% of the respondents across countries and age groups believe that birthplace is very important for being a true national of a nation.

The above result of the Pew Research Center's survey is not surprising. It highlights the role that language, specifically codified language, has played in the nation building process. The seminal works of theorists such as Ernest Gellner and Benedict Anderson can explain this phenomenon. Gellner (1983) argues that there are differences between traditional agrarian societies and modern industrial states. In pre-modern agrarian societies, people had specific social roles, were tied to specific local communities, each with diversified, overlapping languages and cultures. As humanity progressed and formed modern industrial states, we had to be mobile and interactive. Therefore, we needed to be exposed to a 'homogeneous high culture' that would standardize how we communicate and interact beyond the immediate context. Crucial to this standardization was an educational system promoted by the state and indispensable to that system was a formalized language. Such conditions–largely driven by the need for a homogeneous high culture to build a modern industrial state–begot nationalism and that led to a formation of a nation-state, as a result. To Gellner, while the agrarian world may have thousand of dialects, anyone of it can serve as the foundation of a national written language. Nations were formed deliberately, but in a highly arbitrary way, oftentimes with false consciousness and outright social fabrication to fortify homogeneity. As he puts it,

> Nationalist ideology suffers from pervasive false consciousness. Its myths invert reality: it claims to defend folk culture while in fact it is forging a high culture; it claims to protect an old folk society while in fact helping to build up an anonymous mass society [...] It preaches and defends cultural diversity, when in fact it imposes homogeneity

> both inside and, to a lesser extent, between political units (1983, p. 124).

In this sense, a formalized language was a tool, intentionally chosen to aid the process of industrialization that led to the formation of a nation and became representative of that national identity.

Whereas Gellner highlights the artificiality of the nation-building process, Benedict Anderson (1991) enhances Gellner's position further by positing that the nation-building process relies on ample of imaginations by the nationalists. Similar to Gellner, however, Anderson argues that a crucial factor that drove the process was the use of language disseminated through printed media. He coins the term 'print capitalism' to describe the phenomenon where entrepreneurs printed books and media in standardized vernacular languages and attempted to sell them to the mass. In Europe, Anderson points to the establishment of the Gutenberg Printing Press in 1454 as the watershed moment in the history of nation-state formation. The Gutenberg Printing Press allowed mass production of printed media, moved away from using only Latin as the formal printing language and start printing literature such as the Bible in vernacular language in order for the entrepreneurs to expand their markets. Because of the printing press, communities were able to form new relations, establish shared identities, and create linguistic homogeneity. As Anderson writes,

> Print languages [...] create unified field of exchange and communication below Latin and above spoken vernaculars [...] Print-capitalism gave a new fixity to language, which in the long run helped to build that image of antiquity so central to the subjective idea of the nation. (1991, p. 44)

Moreover, print capitalism gave certain languages power over the others. Those linguistic variations that were closer to each print-language and dominate the final form were elevated to a politically prominent status. A combination of capitalism and the advent of printing technology, therefore, allowed for the emergence of an imagined community, setting the stage for the nation-state with a unified, formalized language.

In this sense, language is not only an identity marker of a national of a particular state, but it has also help create that state in the first place. The importance that people attribute to language, such as those in the Pew Research Center's survey, in defining their national identity is by no means a coincidence and we should expect it to have implication to how states conduct their affairs in the international system.

4.6 Shared Language as a Determinant of Alliance Duration and Abrogation

The argument laid out below revolves the shared identity of a nation that has undergone an extended period of negotiations, conflicts, battles, and foreign occupation involving various domestic and international factions. This process led to the recognition of a specific language as the official one. The civilian and military leaders engaged in these negotiations are expected to embody and represent the collective desires of the masses tied to this linguistic identity. The elite cohort functions as the embodiment of the ideological perspectives and attributes associated with said identity. While possessing a degree of latitude for maneuvering and accentuating particular interests in specific scenarios, these elites fundamentally draw guidance from the overarching state identity they espouse. Furthermore, the linguistic identity of the state under consideration remains relatively stable over time. As a result, any leader assuming the role of a treaty negotiator would have internalized and would be projecting that collective identity onto the global stage. Therefore, for the purposes of this analysis, it is posited that a change in leadership does not significantly alter the state's immediate interests. Such a political transition is integrated as a control variable, thereby mitigating the influence of elite decisions on the ultimate outcome.

Having established that language has played an important role in creating and defining national identity, the next question central to this study is how would shared languages among states affect countries' international commitments? Specifically, this study is interested in the effect of shared language on the duration of and, by extension, the abrogation from military alliance of member states. Because deciding on an official language of a nation was a choice that came about

as a result of an arduous nation building process, I take the official language as the most important representation of a nation's linguistic identity. As such, by referring to a 'shared language,' I mean the situation when two or more states share the same official language. How does this linguistic similarity affect alliance duration and abrogation?

At first glance, one might think that when countries share the same language, that salient marker of identity would allow for countries to cooperate better, just like how we tend to work together better at an individual level when a group of us share common traits, particularly when we speak the same language. But I argue that while sharing a language may bring people close together and, by extension, encourage countries to cooperate, the anarchic nature of the international system induces countries to behave differently from what we may expect in at an individual level or within a Westphalian sovereign state where there is an overarching authoritative structure that governs how things ought to work. For military alliances, as outlined in the earlier chapters, the similarity in language encourages countries to come together and share alliance ties. Yet, when they are committed to forming an alliance their resulting designs tend to either be sub-optimal, meaning that they do not exhibit characteristics of agreements that encourage credible commitments, or even if they get to the design decisions that exhibit credible commitment-enhancing clauses, the course of negotiation leading up to the agreement would be more strenuous for the parties involved.

Although states that share a common language often form alliances, the design of such alliances is less likely to include stipulations that induce credible commitments. In practical terms, this implies that these states might face relatively greater challenges in reaching agreements on clauses that effectively ensure credible commitments. This tendency can be attributed to the *heuristic* role of a shared language, which generates a presumption of shared interests. Consequently, uncertainty is made clear and thus the cost-benefit calculation is influenced. A state might hold the belief that non-credible commitment-inducing design aspects would suffice in addressing its security needs, as it expects the counterparty to provide assistance in the event of conflict due to the presumed shared interests. As a result, it might perceive less necessity to agree on an alliance that heightens the probability of credible commitments, which would entail increased maintenance

costs. Therefore, in design aspects where daily language use is not imperative, such as *Membership Rules*, *Scope, Formal Rules,* and *Rigidity,* states sharing a language are more likely, relative to those without a shared language, to opt for designs that are less costly for the alliance. This entails less restrictive membership rules to attract more members and alleviate alliance burdens, a narrower scope to minimize cooperation costs, less intricate formal rules to expedite decision-making, and reduced rigidity, allowing members to exit if sustaining the alliance becomes untenable. And if states are able to achieve high-cost design choices, i.e. containing credible commitment-inducing stipulations, the process for them to arrive at those designs would expect to be more difficult.

However, a shared language has a *functional* role that allows for communication in alliance affairs to take place more easily. This role of language makes it easier to achieve an agreement with credible commitment clauses. The heuristic and *functional* roles work in opposite directions. Language's heuristic role leads to lower likelihood that states will arrive at credible commitment-eliciting design choices after the negotiation, while language's functional role increases the probability that design choices, among states that share an official language, will exhibit credible commitment-inducing stipulations. These different effects are shown in different features of the alliance design.

Aspects that don't necessitate active daily communication among signatory parties– such as the restrictiveness of *Membership Rules*, the broadness of *Scope*, the complexity of *Formal Rules*, and the level of *Rigidity*–exhibit a greater likelihood of adopting design choices that help save cost and do not contain credible commitment-inducing clauses, i.e. a lower level of the restrictiveness of *Membership Rules*, a lower level of broadness of *Scope*, a lower level of complexity of *Formal Rules* and a lower level of *Rigidity*, relative to those designs of an alliance without a shared language. In these aspects, the *heuristic* role of language holds the upper hand.

On the other hand, when it comes to *Centralization*, a design feature where language plays a crucial role in facilitating cooperation, the similarity in language has the opposite effect in that it encourages a higher level of centralization. This is where language's *functional* role is at play. In both cases, shared language helps serve to lowing the cost of maintaining an active alliance. In the first case, it did

so by helping obviate the need to design costly alliance in order to elicit credible commitments due to the presumption of shared interests. In the second case, similarity in language lowers the cost of institutionalizing an alliance.

This brings us to the question of how alliance duration is affected by a shared language among member states. As pointed out above, similarity in language encourages countries to share alliance relationships, but those alliances among states with a shared language tend to adopt design features that are less costly to maintain and not ideal in guaranteeing credible commitments. I argue further that when the designs are finalized and the affairs of the alliance are carried out, the shared language among member states hastens the violation of an alliance that ends in termination.

This claim stands in contrast to the theoretical expectation if we apply the analytical lens of a social identity theorist to understand states' behavior in international affairs. Social identity theory (SIT) posits that humans tend to favor those who share salient in-group identities and discriminate against those who are in the out-group. SIT also claims that humans tend to positively promote their identity to increase their self-esteem. As the earlier chapters have demonstrated social identity theory and, by extension, social constructivism are able to explain why states with a shared language have higher likelihood of being in an alliance together. But they have failed to explain why once the decision is made to form an alliance, the likelihood of such an agreement exhibiting design choices to maintain credible commitments is lower, relative to an alliance among member states that do not share the same language.

SIT and social constructivism would have expected that alliances among members with the same language should also last longer as the bond through the same identity should serve to keep the in-group in tact. But if we approached this puzzle through a rational lens then we would have arrived at a different conclusion and one that would complete our understanding of the role of a shared language in determining the duration of an alliance.

A shared language among states within an alliance operates through two distinct mechanisms. Not only does it play a *functional* role, but it also assumes a *heuristic* role that influences how states gauge their interests, objectives, and

the value of the alliance agreement. Upon signing an alliance, member states engage in alliance-related activities and participate in alliance-oriented interactions, providing firsthand experience of the functional utility of language in this context.

However, an even more potent force comes into play, driven by the substantial influence of language in shaping state identities. A shared language has a misleading *heuristic* effect that might prompt states to initiate alliance agreements due to the perceived existence of shared interests. This perceived alignment of interests reduces states' calculations of uncertainty. Nevertheless, as the alliance progresses, these states gradually recognize, through the course of alliance operations, that their assumed shared interests do not hold true. Consequently, they breach the terms of the contract and prematurely dissolve the alliance before the agreed-upon end date, aiming to evade the costs associated with the continued maintenance of the alliance.

Hypothesis 9. *A shared language will increase the likelihood that an alliance will end in violation, thus shorten its duration.*

As discussed above, language is central to any national building process. It is the identity through which other identities are socialized, negotiated and formed. In the earlier chapters, we see that the magnitude of a shared language outweighs the impact of other cultural identities such as shared ethnicity, shared religion and shared colonial history. A shared language increases the likelihood that a dyad will share an alliance relationship more than other identities. Furthermore, a shared language affects the design choices more than other identities. As such, we should expect that a shared language will also have greater magnitude in its impact on states' decision to abrogate the agreement through violation and therefore shortening the alliance duration, compared to other cultural identities.

Hypothesis 10. *A shared language, because of its importance as a salient identity marker, will have the greatest impact, compared with the effects of shared ethnicity, shared religion and shared colonial history, in determining states' decision to abrogate through violation of an alliance and therefore shortening its duration.*

4.7 Research Design & Methodology

In order to test Hypotheses 9 and 10 laid out above, I rely on a subset of the Alliance Treaty Obligations and Provisions (ATOP) dataset (Leeds, 2005) that contains information about military alliance from 1914 to 2016. While the full dataset contains information from 1819 onwards, the majority of military alliances in the pre-World War I period are among the European countries. Focusing on military alliances signed from post World War I onward gives us the confidence that the data used is more complete and largely represents the population of formal military alliances. The co-variates used to control and isolate the effect of shared language are also more complete, allowing us to be more confident in the conclusion of the analysis. In total, there are 507 formal alliances, excluding non-aggression pacts, in the ATOP dataset from 1914 to 2016. I exclude non-aggression pacts because they do not require active responsibilities of the signatories. For the alliances that have multiple phases, I count them as different agreements because they may include different member states and the design features may be dissimilar.

The dependent variable of interest is the duration of active military alliances and this study is particularly interested in those agreements, which end in termination when one signatory or more abrogate the agreement. For the 507 alliances in the data set, 51.5 percent, or 261 alliances, are either still active or have ended due to a cause not related to alliance obligations, e.g. a country might lose independence. The remaining are those that are no longer active and have ended with reasons related to alliance obligations. 8.5 percent, or 43 alliances, out of 507 alliances in the data set are alliances that ended because their obligations have been fulfilled. Alliances terminated in this manner have an average lifespan of approximately 7.8 years. Of 507 alliances in the data set, 18.7 percent, or 95 alliances, are those that have been terminated due to one or more signatory violating or abrogating the agreements. These alliances have an average lifespan of approximately 9.7 years. Lastly, there are 21.3 percent, or 108 alliances, which have been renegotiated into new agreements. On average, these alliances would have been active for 13.6 years before they were renegotiated. Following the work of Leeds and Savun (2007), this study focuses on the duration of alliances that have terminated due to a violation of one or more signatory states. By evaluating alliances

that ended in this manner, we can investigate if a certain factor contributes to an active decision to abrogate an alliance agreement before its supposed end date.

The independent variable of interest is shared language. I operationalize the concept using official languages of each member in alliance. Based on the language information from Ethnologue database by SIL International (Simons, 2017), I code each member state with their official language. If a state has multiple official languages, or does not designated a particular language as official, then I use the language with the most number of speakers. For each alliance in a given year, its *Shared Language* value is equivalent to the sum of all pairs of member states that share the same language divided by all possible pairs among all the member states of that alliance. For example, the Grand Alliance, signed in 1945, as three member states, namely the US, UK and the Soviet Union. Note that the languages of the US and the UK are coded as English, while the language of Soviet Union is coded as Russia. Only one pair, that is US and UK, out of three pairwise combinations among these member states shares the same language. Therefore, the *Shared Language* value for the Grand Alliance in 1945 is equivalent to $\frac{1}{3} \approx 0.33$.

I use the same approach to calculate the values for other dimensions of shared identity, namely *Shared Ethnicity*, *Shared Religion*,*Shared Colonial History*, *Similarity in Level of Economic Development*, and *Similarity in Regime Type*. This allows us to evaluate Hypothesis 10 and compares the effects of other dimensions of shared identity with that of *Shared Language*.

Table 4.1: Distribution of shared identity-related scores of ATOP alliances from 1914-2016

	Value = 0	**0 <Value <1**	**Value = 1**
Shared Language	83.92%	7.35%	8.74%
Shared Ethnicity	92.63%	6.02%	1.36%
Shared Religion	73.93%	11.25%	14.8%
Shared Colonial History	76.14%	19.20%	11.78%
Similarity in Level of Economic Development	52.43%	10.04%	37.53%
Similarity in Regime Type	71.65%	10.88%	17.46%

Other controls are also used in order to isolate the effect of *Shared Language*

on the duration of military alliances.

The level of *GPD Per Capita* may influence the duration of the military alliances as we should expect that countries with higher income could afford to maintain longer alliances and could withstand economic shocks that may lead to abrogation.

If an alliance membership includes a *Great Power*, we may expect to observe a longer alliance because great powers should have more resources, in both materials and non-materials terms, to maintain their alliance. The ending of an active war in a given year may lead to a termination of the alliance. As such, I incorporate a *War Status Change* into the model.

Contiguity among states maybe a factor that dictates the duration of an alliance. States that share borders have higher likelihood of engaging in skirmishes and these might trigger a termination of an alliance. The size of the alliance, i.e. the number of members, should matter in determining the duration of an alliance.

We should expect to see an alliance with higher *Number of Actors* to last longer because there are other members to help maintain the alliance when and if a member abrogated. If in a given year, a member in a particular bilateral alliance or a majority of members in a multilateral alliance engage in a newly signed alternative alliance, then we should expect higher likelihood that they might abrogate from an existing alliance.

System threat against an alliance may also change over time. If the threat decreases significantly, the alliance may disintegrate faster. I operationalize system threat change of an alliance in a given year calculating the combined Composite Indicators of National Capability of politically relevant states to alliance members and if this value changes by more than 30-percent from the previous year, then I code 1 for *Threat Change* for that alliance in that given year.

The capabilities of the members in a given alliance may also change during its course of action, which may affect alliance duration. *Capability Change* is operationalized by adding up all Composite Indicators of National Capability of the alliance member states and code 1 if the change is more than 10-percent from the prior year.

An abrupt change in the political systems of the member states may cause their alliance to disband. I account for the potential effect of *Political Change* by

coding 1 for the year in which the average polity score of member states of an alliance changes more than 2 points compared to the previous year.

Past studies on alliance duration has shown that asymmetric alliance last longer (Morrow, 1991; Leeds and Savun, 2007). I reevaluate the claim by including a *Power Asymmetry* that indicates whether an alliance contains asymmetrical of powers among members. If the difference between the state with the highest composite index of national capability score and the state with lowest score is more than 50 percent, then the variable is coded 1.

Past experiences among alliance members may also affect the likelihood of abrogation when a challenge arises. I include *Past Violent Conflict*, which indicates whether alliance members have engaged in violent conflicts within the last 30 years, to control for the potential effect of historical experiences among alliance members.

Given that the dependent variable is time, the appropriate statistical approach to use for the analysis is the Cox proportional hazard model. The key assumption of the Cox model is the idea that the effect of a change in an independent variable on the hazard is proportional and constant over time. However, most data in political science do not lend itself to properly fit with the proportional hazard assumption. The effect of an independent variable may shift as time passes by and it is important to account for this time-varying element in the model. Therefore, the data set, while comprising 507 alliances, is recorded into yearly observations. This means that each alliance's duration has one observation for each calendar year and the unit of analysis is the alliance-year. The purpose of the division is to allow for some co-variates that are measured on an annual basis to be included. The expansion of the data set results in 9,077 observations. However, upon running the estimation, some missing data in the yearly GDP Per Capita of some countries had reduced the number of observation to 8,977.

To comply with the proportional hazard assumption of the Cox regression, after running the model with the set up described, I run the relevant checks by calculating scaled Schoenfeld residuals for each co-variate and for the overall model. I detect evidence of non-proportionality in a few variables, namely *Similarity in Political Ideology*, and *Threat Change*. Therefore, to address this violation, I re-estimate the model to include an interaction effect between each co-variate that

violates the assumption and logarithm of time. The result is presented in Table 4.2 below.

Furthermore, as a robustness check for the claim that *Shared Language* matters in determining alliance duration, I incorporate *Shared Language* into the model by Leeds and Savun (2007), which investigates reasons for alliance termination. While Leeds and Savun rely on ATOP data from 1816 to 1989, I use language and ATOP data from 1914 to 1989 in order for the result to be comparable to the main model of this study and to be able to account for co-variates whose information may not be available before 1914. Leeds and Savun are also interested in how alliance design features affect the duration of an alliance. So, they have included certain design features into their model as independent variables. However, this study, as presented in the earlier chapter, has already claimed that language has a significant role in determining various alliance design features. As such, in my model, I exclude those independent variables related to alliance design in order to avoid a conceptual clash between my argument with that of Leeds and Savun. The result is presented in Table 4.4.

4.8 Results & Discussion

Both hypotheses are supported by the results. We reject the two null hypotheses that *Shared Language* has no effect in increasing the likelihood of an alliance ending through a violation of its terms and also that *Shared Language* does not have the greatest impact on determining alliance violation, compared to the effects of other cultural identities. As shown in Table 4.2, when alliance members share the same language, controlling for other variables, the hazard rate of alliance termination through a violation increases by 138% compared to an alliance whose members do not share the same language. Other shared cultural identities, namely *Shared Ethnicity*, *Shared Religion*, and *Shared Colonial History*, do not have statistically significant effects at the 0.05 level. This suggests the importance of a shared language identity in shortening the duration and hastening the demise of an alliance. While a shared language enables it to perform a *functional* role by easing the communication among member states that are conducting alliance affairs, its *heuristic* role, which creates an assumption of shared interests, makes member states value

the binding contract less than an alliance whose member states do not share the same language. This results in an expected shorter duration, i.e. higher hazard, of an alliance with a shared language.

Table 4.2: Cox Proportional Hazard Model showing Estimates of Alliance Termination by Violation, from 1914-2016, with Shared Language as an Independent Variable

	(1)	
	Estimated Coefficients	*Percent Change in Hazard Rate*
Shared Language	0.868***	138% Increase
	(0.337)	
Shared Ethnicity	1.359	N.S.
	(0.464)	
Shared Religion	−0.157	N.S.
	(0.324)	
Shared Colonial History	0.157	N.S
	(0.381)	
Similarity in Level of Economic Development	−0.058	N.S.
	(0.273)	
Similarity in Political Ideology	1.495***	346% Increase at Time = 1 Day
	(0.752)	28% Decrease at Time = 10 Yrs.
Similarity in Political Ideology x ln(Time)	−0.222***	Time-varying Change
	(0.106)	
Log of Average GDP Per Capita	−1.043***	65% Decrease
	(0.168)	
Average Regime Type (Polity II score)	−0.006	N.S.
	(0.024)	
Major Power Presence	1.314*	272% Increase
	(0.299)	
War Status Change	0.293	N.S.
	(0.494)	

	(1)	
	Estimated Coefficients	*Percent Change in Hazard Rate*
Contiguity	−0.218	N.S.
	(0.284)	
Number of Actors	−0.092*	9% Decrease
	(0.043)	
Threat Change	−4.999***	100% Decrease at Time = 1 Day
	(2.382)	29% Increase at Time = 10 Yrs.
Threat Change x ln(Time)	0.640***	Time-varying Change
	(0.297)	
Capability Change	0.752*	112% Increase
	(0.260)	
Domestic Political Change	−0.064	N.S.
	(0.263)	
Past Disputes	0.656	N.S.
	(0.381)	
Past Violent Conflicts	0.873***	139% Increase
	(0.236)	
Observations	8,977	
R^2	0.017	
Max. Possible R^2	0.112	
Log Likelihood	−460.102	
Wald Test	79.740*** (df = 19)	
LR Test	150.685*** (df = 19)	
Score (Logrank) Test	168.981*** (df = 19)	
Note:	*p<0.05; **p<0.01; ***p<0.001	

To present the outcomes of the primary variable of interest in a more lucid manner, a helpful approach involves a comparison of survival probability curves. These curves delineate the likelihood of an alliance surviving up to a specified number of years. In Figure 4.1, while maintaining other covariates at their means, I depict survival probabilities for alliances with shared language among members as well as those without such linguistic similarity.

The two graphs distinctly reveal a divergence between alliances with shared language and those without. An alliance comprising members who share a common language exhibits a lower survival probability at any given point in time, and this disparity becomes more pronounced as the years progress. For instance, considering a 10-year timeframe, the probability of survival for an alliance lacking linguistic similarity is approximately 95%, whereas the probability decreases to about 87% if the members share a language. At the 30-year period, the survival probability for an alliance without a shared language is about 88%, but that probability for an alliance whose members share the same language is approximately 73%. In Table 4.3, I also showcase the expected mean and median durations, derived from simulated data, for alliances formed among members who share a common language and for alliances that lack linguistic similarity. The disparity in the expected mean duration becomes evident when comparing alliances formed by member states sharing a common language versus those that do not. This difference amounts to approximately 9.9 years, with an alliance that shares a common language lasting shorter. Additionally, the expected median duration for these two hypothetical alliances diverges by 9.24 years, further underscoring the indication that alliances sharing a common language tend to have shorter lifespans.

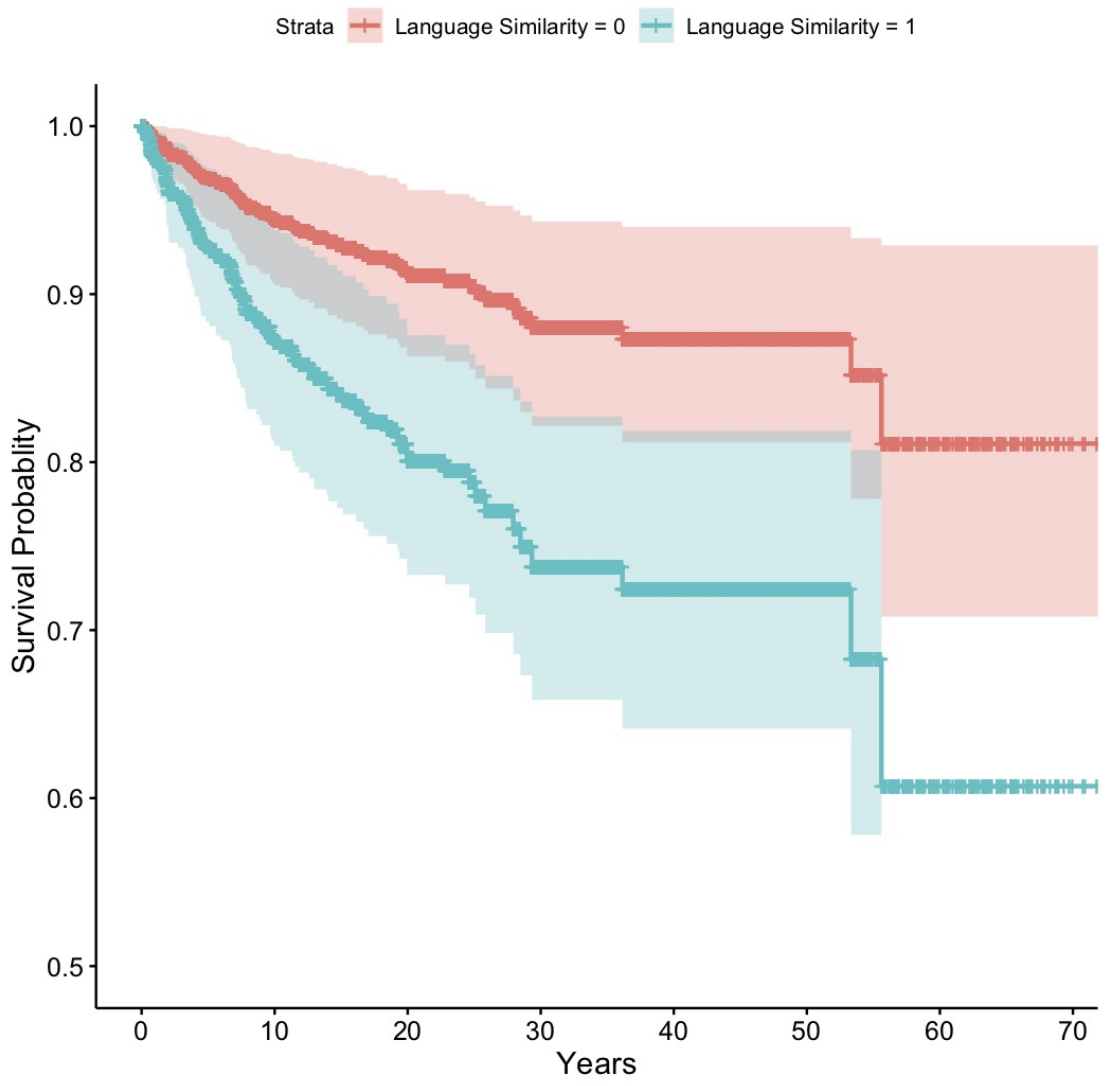


Figure 4.1: Survival probabilities of an alliance with & without a shared language

	Shared Language = 0	**Shared Language = 1**	**Difference**
Expected Mean Duration	59.60 Years	49.69 Years	9.90 Years
Expected Median Duration	64.72 Years	55.15 Years	9.24 Years

Table 4.3: Expected Mean Duration and Expected Median Duration Comparing Scenarios For Shared Language = 0 and Shared Language = 1

Referring back to the result of Table 4.2, similar to *Shared Ethnicity*, *Shared Religion* and *Shared Colonial History*, a similarity in the level of economic development appears to not have a statistically significant effect as a determinant of alliance termination through a violation of the agreement. Interestingly, however, when alliance is formed among members with a similar regime type, there is a significant effect, but the hazard of alliance ending through a violation varies over the life time of the alliance. At the start, the hazard rate of an alliance whose members share a regime type is 346% more than the hazard rate of an alliance whose members do not have a similar regime type. This means that an alliance with a similarity in political ideology starts off with a great risk of breaking apart and an expectation of a short duration. But the effect dissipates over time and at 10 years the hazard of alliance ending through a violation for an alliance with a shared language is actually 28% lower than the hazard rate for an alliance without a shared language.

Other interesting results from the model include a 65% change in the hazard rate for a unit increase in the log of the average GDP Per Capita of all the member states in an alliance. What this means in an easily understandable way is that a 10% increase in the average GDP Per Capita in an alliance is associated with a 9.4% decrease in the hazard rate. This suggests that an alliance among richer member states will last longer and has less likelihood of ending by a violation of terms. This fits with the expectation that more developed states that have more resources to maintain their alliances. However, this finding, at a glance, stands in contrast to the effect of having a major power presence in an alliance. The presence of a major power in an alliance increases the hazard rate by 272%. It is possible that major powers tend to view alliance ties as a short term engagement and they do not want to be hand-tied by any group for a long period of time. Perhaps, highly developed states with a high level of GDP Per Capita, that are not considered a major power view formal alliances differently from the major powers. For them, they need and can afford to maintain alliances for their security whereas for the major powers, despite being able to afford formal alliances for a long period of time, tend to prefer not to stay in an alliance. Number of actors in an alliance seems to also play some role in determining alliance duration. An additional member of

an alliance results in a 9% decrease in the hazard rate. That means with more members, an alliance is expected to last longer.

A change in threat has an effect that varies with time. At the beginning, there is a 100% decrease in the hazard rate, meaning that it is virtually impossible for the alliance to collapse immediately despite significant threat change, defined as a 30% change or more in the combined composite index of national capabilities among the states that are in the politically relevant international environment of the alliance's member states. To put simply, a newly signed alliance is robust against the change in threat. However, as time progresses, an alliance will become more sensitive to such a significant change in threat. For example, after 10 years, a threat change will result in a 29% increase in the hazard rate.

A capability change among the member states, on the other hand, does not indicate that its effect on the hazard rate varies with time. When the aggregated capability of alliance changes, defined by a 10% change in the combined composite index of national capabilities among the member states of an alliance, there will be a 112% increase in the hazard rate, meaning that an alliance falls apart more easily and with an expected shorter duration than when their combined capability remains stable.

The model includes two kinds of negative experience among member states, namely past disputes without violence and past violent conflicts within the last 30 years. Only an alliance whose majority of the members have engaged in violent conflicts with each other during the past 30 years appears to have a significant impact on alliance duration and its ending through a violation of the agreed terms. A violent past experience results in a 139% increase in the hazard rate. This is understandable due to the lack of trust that these states may have with each other to begin with which causes their alliance to be sensitive to a collapse. The lesser degree of negative experience, i.e. past disputes without violence, does not appear to have a statistically significant effect on the hazard rate.

Table 4.4: Cox Proportional Hazard Model showing Estimates of Alliance Termination by Violation, from 1914-1989, based on Leeds & Savun (2007), with Shared Language as an Independent Variable

	(3)	
	Estimated Coefficients	*Percent Change in Hazard Rate*
Shared Language	0.696*	**100% Increase**
	(0.316)	
Change in International Power Since Alliance Formation	1.389***	**300% Increase**
	(0.400)	
Change in Political Institutions Since Alliance Formation	0.394	N/S
	(0.279)	
Decrease in External Threat Since Alliance Formation	0.376	N/S
	(0.283)	
Formation of New Outside Alliance	0.887**	**143% Increase**
	(0.267)	
Democratic Members	0.019	N/S
	(0.226)	
Asymmetric Power	-0.391	N/S
	(0.286)	
Agreement Includes Non-Military Cooperation	-	-
	-	
Treaty Requiring Ratification	-	-
Agreement Requires Peacetime Military Coordination	-	-
Observations	2693	
Unique Alliance Phases	210	
Alliance Termination by Violation	68	
Log Likelihood	−303.604	
Wald Test	37.320*** (df = 7)	
LR Test	37.211*** (df = 7)	
Score (Logrank) Test	35.966*** (df = 7)	
Note:	*p<0.05; **p<0.01; ***p<0.001	

As a robustness check on the result from Model 1, I include *Shared Language* into a replication of Leeds and Savun (2007)'s model that investigates why states terminate alliances. To accommodate, the limitations on both the *Shared Language* variable and the control variables from their study, the replicated model has a change in the time period from 1816-1989 to 1914-1989. Leeds and Savun (2007) limits their study only on bilateral alliances. Also, whereas Leeds and Savun include a few characteristics of alliance designs into the model, I do not include them in order to keep the model consistent to the argument from the earlier chapters that these design features are affected by whether the alliance members share a common language or not. The result shown in Model 2 in Table 4.4 shows that when two states share the same language, they are 100% more likely to terminate due to a violation by one of the parties. This confirms the finding in Model 1. Furthermore, it is worth noting that when *Shared Language* is included into the model, a change in international power since the alliance formation increases in magnitude and has a stronger impact on the hazard rate, from 152% to 300% increase. A state forming new outside alliance increases the hazard rate by 143%, compared to 125% in the original model by Leeds and Savun (2007). However, whereas in the original model a change in the political institutions since alliance formation is statistically significant and increases the hazard rate, the variable is not statistically significant in the replication model. Lastly, both members being democratic and the alliance having asymmetrical power between the two members are statistically significant in the original model by Leeds and Savun (2007), they are not statistically significant in the replication with *Shared Language*.

4.9 Addressing Tension Between Findings

While the findings of the first and third papers may appear conflicting, they are, in fact, interconnected. The first paper argues that a state tends to form alliances with other states that share a common language. However, the third paper demonstrates that alliances among members who share a language are more prone to opportunistic abrogation compared to alliances among states with no shared language.

Expanding upon these insights, we can anticipate that a state, despite previously experiencing the premature dissolution of a common-language alliance, might still actively pursue another state sharing its language to establish a formal alliance. This pursuit does not necessarily imply a repetition of alliances among the same states; rather, it suggests that a state would seek alliance partners among any states with which it shares a language.

Returning to the examples from the Arab world in 1950s cited in Chapter 3, from 1955 to 1958, Egypt signed a series of short-lived bilateral alliances with Syria, Saudi Arabia, Yemen and Iraq. Multilaterally, it had one with Syria and Jordan and another one with both Saudi Arabia and Yemen, which did not last particularly long. The advent of these alliances had strong roots in Arab nationalism, bonded together by a common language (Philipp et al., 2010), but they collapsed when the presumption of shared interests–originally signaled by a shared language–turned out to be false. Despite these setbacks, Egypt persisted in its pursuit of alliances. In 1962, it once again entered into an alliance with Yemen, only for it to dissolve in 1967. The Egypt-Syria alliance was rekindled in 1967 but concluded in 1979. Egypt's endeavors were not unique; Iraq also sought alliances with Arab-speaking nations. Its alliance with Jordan faltered prematurely, only to be reinstated later. Similarly, Saudi Arabia had multiple ties with Yemen, which ended in abrogation, but went onto forge an alliance with Jordan.

4.10 Conclusion

How does a shared language among member states affect the likelihood of an alliance terminating by a violation of its terms and thus affecting the duration of an alliance? Based on the results of this study, a shared language among an alliance's member states increases the likelihood that the alliance will be violated by one or more of its members, leading to its termination. This in turn means that an alliance whose members share the same language is not expected to survive as long as an alliance whose members do not share a common language. Furthermore, a shared language has the greatest impact on the likelihood of an alliance termination by violation and the alliance duration, compared to other social identity markers. In fact, it is the only salient identity marker in this study. I argue

that we observe such a phenomenon because language has played an instrumental role in the nation building process and it is the first identity, through which other national identities are built. However, a shared language, instead of making the alliance members adhere to the terms of the agreement and increasing the longevity of the cooperation, actually increases the likelihood that member states will violate the terms and shorten the lifetime of the alliance. The main reason for this observation is the fact that language plays a *heuristic* role which creates a presumption of shared interests. Such a role of language discourages long-term alliance engagements because states eventually realize that the presumed shared interests are actually false. As a result, the agreement tends to end in violation of the terms. States with a common language, therefore, have higher likelihood to choose to end their alliance early. While language has a *heuristic* role which discourages long-term alliance commitments, its *functional* role works in the opposite direction. While the *heuristic* role of a shared language hinders states from achieving long-lasting alliances, the *functional* role of a shared language among states fosters a deeper form of cooperation and aids in the maintenance of alliances through enhanced communication ease. However, the positive impact of the *functional* role, beneficial for alliance duration, is overshadowed by the *heuristic* role that eventually drives states to prematurely abrogate their alliance commitments. This underscores the significant influence of a psychological phenomenon, elicited by a shared linguistic identity, on states' rational capacity to comprehend their own interest calculations, in comparison to the anticipated functional advantages of sharing a common language.

Chapter 5

Conclusion

The arguments in this manuscript are positioned within a larger paradigm, which holds that culture and identity matter in the conduct of international affairs. Yet, that paradigm suffers from a lack of sufficient explanation on how culture and identity actually operate. This dissertation takes on the challenge and show that culture and identity do not operate in a vacuum, but depends on considerations raised by rational choice. It goes further to claim that among all cultural and identity related variables, language holds the most explanatory power on how states behave in the international arena.

The three papers unpack culture and identity into their different elements, i.e. language, ethnicity, religion, and colonial history and demonstrate that linguistic identity, because of its contribution to the national identity building process, is the most robust determinant of how states decide who they will maintain alliance relations with, how they would design those alliance contracts, and how long such alliances would last.

In doing so, I fill the void and advance the knowledge in IR scholarship in at least two ways. Firstly, as an engagement with grand theories, I bridge the gap between constructivist literature, which values non-material factors, such as cultural and identity, and the rational choice literature that focuses on a cost-benefit analysis of a rational actor as a motivation for international behaviors. I use a variable, i.e. shared language, which would be more familiar to constructivist scholars, and argue for its role in international affairs by drawing on assumptions and using methodologies that are central to the rational choice approach.

Secondly, I engage with the existing literature on military alliance, which to date have not paid sufficient attention to cultural and identity. While I integrate these variables into my studies, I also challenge those who believe that all cultural and identity related variables are of equal importance, by arguing that in fact only shared language really matters as it has robust effects across the three different investigations, albeit not in ways that we might expect.

Through the three papers in this manuscript, I have demonstrated the importance of language in military alliance affairs. In the first paper, I show that when states share a language, operationalized as a similarity in their official language, they will have a higher likelihood in sharing alliance relations than states that do not share a language. Based on the results, two states that share a language are 8.85 to 16.58 times more likely to ally, compared to a pair of states that do not share a language. Additionally, this effect is particularly true for defensive alliances. A shared language makes states 10.90 times more likely to share a defensive alliance, while only making states 1.66 times more likely to share an offensive alliance.

The second paper puts forward the *Sociolinguistic Theory of Alliance Design*, which stipulates that while states with a shared language tend to also share alliance relations, the probability of their alliance lacking the characteristics of an agreement that invokes credible commitments will rise. For example, the probability of the *Membership Rules* of an alliance being classified as having a low level of restrictiveness increases from 2.5% to 9.1%, while the probability of an alliance's *Scope* exhibiting a low level of broadness rises from 6.4% to 23.1%, when we compare states that have a shared language to states that do not. Furthermore, the probability that the *Formal Rules*, i.e. the decision-making process, of an alliance being categorized as not complex, i.e. low level of complexity, among states that do not share a language is 18.1%, but the figure increases to 55.9% for states that share a common language. The probability that an alliance exhibiting a low-level of *Rigidity* increases from 16.5% to 59.0% when we compare an alliance whose members do not share a common language to an alliance whose members do.

ntity would encourage closer cooperation and more credible commitment-eliciting designed agreements. In fact, among all the cultural and identity variables, only shared language has the power to explain all dimensions of alliance design and, for most features, it behaves in ways that deviate from what we would expect.

The findings illustrate the impact of a shared language on fostering alliance design characteristics that do not strongly encourage credible commitment. Conversely, it suggests that a shared language may discourage the inclusion of credible commitment-enhancing provisions in an alliance. This implies that alliances among members who share a common language are more likely to lack elements that could ensure credible commitments from all parties involved.

Furthermore, if states with a shared language manage to transcend the obstacles that hinder achieving a higher level of cooperation, they would likely require a more intricate negotiation process to establish such an agreement. These insights challenge our conventional assumptions, as we often assume that cultural and identity similarities would promote closer cooperation and lead to the formulation of agreements with more credible commitment-inducing features.

Remarkably, among all the cultural and identity variables considered, shared language alone possesses the capability to account for all dimensions of alliance design. Surprisingly, it behaves in ways that deviate from our anticipated expectations for most of these design features.

There is an important anomaly to the above observations that should be noted, however. While shared language among states discourages credibility-enhancing design choices in four out of five dimensions, the fifth one identified in this study has a different relationship with shared language. For *Centralization*, a design feature that involves a creation of a new institution to manage the affairs of an alliance and centralizes some of the decision making power, shared language actually encourages a design choice that increases the likelihood of credible commitments. For this study, the probability that an alliance would have a low level of centralization if the members do not share a language is 55.7%. But when all member states in an alliance share a common language that probability drops to 6.8%, meaning that with a shared language it would be easier for potential alliance members to agree on a more centralized management of the alliance.

In the third paper, I demonstrate that an alliance between states that share a language tends to be more short-lived than an alliance between states that do not share a language. Specifically, when alliance members share the same language, the hazard rate of alliance termination through a violation increases by 138% compared to an alliance whose members do not share the same language. I also

show that when the survival probabilities are compared over their lifetime duration, the survival probability of an alliance with the shared language decreases at a faster rate than an alliance without a shared language. I also discover that no other cultural and identity variables, i.e. shared ethnicity, shared religion and shared colonial history, are statistically significant enough to explain the duration of an alliance that ends in a violation of the agreement.

The arguments for the three observations are related and built on the same logical foundation. I argue that language operates through two mechanisms. Firstly, language has a 'false' *heuristic* role, meaning that when states share a language they tend to mistakenly presume that they also share interests. When interests are thought to be aligned, states have higher likelihood to cooperate. But the presumption of shared interests is not always good news when it comes to the design of an alliance. The *heuristic* quality of sharing a language misleads states into believing that they already have mutual interests and would have acted with the counter-party's interest in mind anyway, so they see less value in designing an agreement that would have ensured credible commitments, which would require higher cost to set up and maintain. To the extent that the states with shared language are able to agree on design choices that demonstrate credible commitment-eliciting clauses, and overcome the drag from the false assumption of shared interests, their process of negotiation would be more strenuous and difficult to conclude. This observation is true for design features where language is not particularly needed in an alliance's daily operation, namely *Membership Rules*, *Scope*, *Formal Rules*, and *Rigidity*. However, when states realize that such a presumption is false after engaging in an alliance together for sometime, they see no use in maintaining the alliance and would seek to change the status quo by abrogating from the agreement.

Secondly, language plays a 'functional' role in alliance relations. This is straightforward and is the role that we expect. A shared language encourages cooperation because it eases the communication between parties. We observe that states that share a language tend to share an alliance as well because it is simply easier to communicate with the counter-party that speaks, reads and writes the same language. This explains why we observe a different effect of shared language on *Centralization* from the other four design features. Because *Centralization* is the only design

feature out of the five identified in this study in which language is crucial and meaningful in its operation, the 'functional' benefit brings an ease of communication that in turn makes a deeper-level of cooperation possible to achieve. This is contrary to the *heuristic* effect of shared language, which increases the likelihood that a design choice exhibits a lower-form of cooperation, as witnessed in the other four dimensions of alliance design. For the duration, we expect that shared language as a 'functional' tool allows for a longer lifetime of an alliance. However, the *heuristic* effect has a much stronger adverse impact on alliance duration. The presumption of shared interests that turns out to be false eventually helps hasten the termination of an alliance among member states.

The three papers are interconnected as follows: 1) States sharing a common language have a higher likelihood of maintaining alliance relationships. 2) They possess a lower probability of reaching an alliance that signifies closer cooperation, exemplified by credible commitment-enhancing clauses, compared to alliances among members without a shared language. Despite alliances tending to inherently incorporate credible commitment-eliciting provisions, such agreements are reached through more arduous and intricate processes among language-sharing member states, unlike their non-language-sharing counterparts. 3) Alliances among states with a shared language demonstrate a heightened probability of dissolution due to opportunistic termination when initial assumptions about shared interests prove inaccurate. This leads to shorter expected duration in comparison to alliances formed among speakers of different languages. 4) However, in the aftermath of alliance breakdowns, these states subsequently reengage in alliance relationships, with a preference for those states they share a language with.

While the scope of this manuscript is limited to the study of military alliance, similar results should apply to other international agreements more broadly and may even be stronger in non-security realms. This is because stakes are higher in the security arena and we may expect that a non-material variable, such as language, would hold less explanatory power than other realist-oriented factors such as threat and material power. Future scholars maybe interested in investigating whether similar effects of a shared language would be observed in the formation, the design and the duration of other types of international cooperation such as eco-

nomic and environmental agreements. And if so, whether the effects are stronger than what have been shown in this study of formal military agreements.

In any case, from these three papers on military alliance, we can learn the positive and negative impacts of shared language in alliance affairs. Leaders and policymakers should be aware that sharing a language with their counter-party is not all good news. To create an effective security contract among states that share the same language and ensure credible commitments, the negotiators will need put more efforts and give careful considerations when they draft and agree on the agreement in order to overcome the tendency to give into the 'false' *heuristic* power of sharing a language.

Appendix A

Brant Tests for Models in Chapter 2 and Partial Proportional Odds Models

A.1 Membership Rules

Table A.1: Brant Test for Model 1 in Chapter 2, with Membership Rules as the Dependent Variable

	X2	df	probability
Omnibus	-295.021	14	1
Shared Language	3.607	1	0.058
Shared Ethnicity	1.563	1	0.211
Shared Religion	1.494	1	0.222
Shared Colonial History	0.00002	1	0.997
Similarity in Level of Economic Development	2.000	1	0.157
Similarity in Political Ideology	0.139	1	0.709
Log of Average GDP Per Capita	0.374	1	0.541
Average Regime Type	5.563	1	0.018
Threat	0.209	1	0.647
Existing Alliances	0.354	1	0.552
Past Alliances	26.851	1	0.00000
Number of Actors	-73.190	1	1
Major Power Presence	6.047	1	0.014
Geographical Proximity	0.301	1	0.583

A.2 Scope

Table A.2: Brant Test for Model 2 in Chapter 2, with Scope as the Dependent Variable

	X2	df	probability
Omnibus	-17.437	14	1
Shared Language	5.853	1	0.016
Shared Ethnicity	0.184	1	0.668
Shared Religion	0.067	1	0.796
Shared Colonial History	2.291	1	0.130
Similarity in Level of Economic Development	0.549	1	0.459
Similarity in Political Ideology	2.666	1	0.103
Log of Average GDP Per Capita	1.884	1	0.170
Average Regime Type	2.472	1	0.116
Threat	2.612	1	0.106
Existing Alliances	0.133	1	0.715
Past Alliances	115.385	1	0
Number of Actors	0.016	1	0.899
Major Power Presence	0.106	1	0.745
Geographical Proximity	0.689	1	0.406

A.3 Formal Rules

Table A.3: Brant Test for Model 3 in Chapter 2, with Formal Rules as the Dependent Variable

	X2	df	probability
Omnibus	18.339	14	0.192
Shared Language	0.465	1	0.495
Shared Ethnicity	0.621	1	0.431
Shared Religion	3.954	1	0.047
Shared Colonial History	0.181	1	0.671
Similarity in Level of Economic Development	1.425	1	0.233
Similarity in Political Ideology	0.233	1	0.629
Log of Average GDP Per Capita	0.891	1	0.345
Average Regime Type	3.295	1	0.069
Threat	5.382	1	0.020
Existing Alliances	0.00001	1	0.998
Past Alliances	-2.417	1	1
Number of Actors	0.479	1	0.489
Major Power Presence	5.384	1	0.020
Geographical Proximity	0.302	1	0.583

A.4 Rigidity

Table A.4: Brant Test for Model 4 in Chapter 2, with Rigidity as the Dependent Variable

	X2	df	probability
Omnibus	76.460	14	0
Shared Language	3.741	1	0.053
Shared Ethnicity	0.156	1	0.693
Shared Religion	0.368	1	0.544
Shared Colonial History	0.002	1	0.969
Similarity in Level of Economic Development	1.619	1	0.203
Similarity in Political Ideology	0.803	1	0.370
Log of Average GDP Per Capita	0.017	1	0.897
Average Regime Type	0.575	1	0.448
Threat	3.690	1	0.055
Existing Alliances	1.929	1	0.165
Past Alliances	19.459	1	0.00001
Number of Actors	6.000	1	0.014
Major Power Presence	0.267	1	0.605
Geographical Proximity	0.017	1	0.896

A.5 Centralization

Table A.5: Brant Test for Model 5 in Chapter 2, with Centralization as the Dependent Variable

	X2	df	probability
Omnibus	691.383	14	0
Shared Language	0.099	1	0.753
Shared Ethnicity	0.036	1	0.850
Shared Religion	0.112	1	0.738
Shared Colonial History	1.162	1	0.281
Similarity in Level of Economic Development	2.431	1	0.119
Similarity in Political Ideology	2.114	1	0.146
Log of Average GDP Per Capita	0.640	1	0.424
Average Regime Type	3.382	1	0.066
Threat	0.843	1	0.359
Existing Alliances	10.413	1	0.001
Past Alliances	0.745	1	0.388
Number of Actors	42.015	1	0
Major Power Presence	5.247	1	0.022
Geographical Proximity	11.400	1	0.001

A.6 Partial Proportional Odds Models

Table A.6: Ordered logit analyses of the effect of shared language and other dimensions of shared identity on the design of alliances, 1914-2016

	Rigidity	Central -ization
	(4)	(5)
Shared Language	−1.006**	3.115***
	(0.394)	(0.486)
Shared Ethnicity	−1.093	−0.982
	(0.772)	(0.823)
Shared Religion	−0.747**	0.079
	(0.319)	(0.282)
Shared Colonial History	−0.459	0.132
	(0.369)	(0.327)
Similarity in Level of GDP Per Capita	−0.137	0.072
	(0.274)	(0.233)
Similarity in Regime Type	0.405	−0.356
	(0.361)	(0.313))
Log of Average GDP Per Capita	0.786***	0.207
	(0.189)	(0.168)
Average Regime Type	−0.056**	0.081***
	(0.024)	(0.021))
Threat	−0.687**	−0.088
	(0.337)	(0.350)
Existing Alliances	0.104	0.093
	(0.148)	(0.086)
Past Alliances	0.067	−0.118**
	(NA)	(0.049)
Number of Actors	−0.082	0.069
	(NA)	(NA)
Major Power Presence	−0.870***	0.390**
	(0.279)	(0.161)
Geographical Proximity	0.824***	0.096
	(0.285)	(0.180)
Observations	451	451
Log-likelihood	-320.163	-320.163
AIC	676.325	815.935

Notes:
***p < .01; **p < .05; *p < .1

Appendix B

Variable Selection for Models in Chapter 2

B.1 Models with Stepwise AIC Variable Selection Method

Table B.1: Ordered logit analyses of the effect of shared language and other dimensions of shared identity on the design of alliances from 1914-2016 with selected variables based on Stepwise AIC variable selection method for each model

	Member Rules	Scope	Formal Rules	Rigidity	Centralization
	(1)	(2)	(3)	(4)	(5)
Shared Language	−2.151***	−1.585***	−1.918***	−1.231***	2.951***
	(0.390)	(0.383)	(0.411)	(0.353)	(0.391)
Shared Ethnicity		−0.594**			
		(0.288)			
Shared Religion				−0.781**	
				(0.304)	
Similarity in Political Ideology		0.899**			
		(0.385)			
Log of Average GDP Per Capita	0.814***	0.992***	0.371*	0.817***	
	(0.210)	(0.172)	(0.200)	(0.179)	
Average Regime Type			−0.037	−0.059***	0.099***
			(0.025)	(0.023)	(0.017)
Threat			−1.522***	−0.680**	
			(0.366)	(0.335)	
Existing Alliances		0.696***	0.294*		
		(0.184)	(0.171)		
Past Alliances	0.524**	0.030	0.157**	0.099	−0.111**
	(0.240)	(0.057)	(0.079)	(0.066)	(0.047)
Number of Actors		0.059*		−0.086**	0.072**
		(0.031)		(0.034)	(0.033)
Major Power Presence		−1.657***	−1.053***	−0.751***	0.372*
		(0.293)	(0.283)	(0.252)	(0.197)
Geographical Proximity	−0.882*		0.638**	0.829***	
	(0.524)		(0.292)	(0.269)	
Observations	451	451	451	451	451
Notes:	***p < .01; **p < .05; *p < .1				

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