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Proxy War in the Gray Zone

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Gray Zone Conflict and Proxy War

Proxy wars provide a mechanism for major powers to challenge each other without engaging in direct confrontation. In a proxy war, major powers compete for influence by supporting opposing sides in a conflict. While proxy wars have been fought throughout history, the Cold War brought many examples of proxy war because communist and anti-communist powers were vying for dominance throughout the world, but the risk of direct confrontation was extremely high due to nuclear weapons (Kalyvas and Balcells 2010).

The end of the Cold War and subsequent evolution of the military and political atmosphere has led to an increase in the use of gray zone activities. Gray zone conflict consists of "activity that is coercive and aggressive in nature, but that is deliberately designed to remain below the threshold of conventional military conflict and open interstate war" (Brands 2016). These actions violate international norms and are motivated by broader security objectives (Bragg 2016). Other terms for this concept include irregular warfare and military operations other than war, among others (Kapusta 2015). A variety of reasons exist for the increase in use of gray zone tactics, including globalization and asymmetric reactions to conventional tactics (Barno 2015).

A common model of gray zone conflict involves a revisionist power, either state or non-state, that wants to alter the current power structure in a region (Brands 2016). This revisionist power uses tactics that it believes will further its goals without drawing direct conflict from a status quo power. The status quo power prefers the current power structure and is willing to take military action to keep it as is. The revisionist power's gray zone activities are often targeted at a vulnerable area of strategic interest. The revisionist power may take actions such as promoting political instability in the vulnerable area, engaging in information operations designed to make it more popular in the vulnerable area, and small, sub-conflict actions to gain land in the vulnerable area or position the revisionist power more strategically within the vulnerable area.

Proxy wars can be considered a gray zone tactic. Similarly, gray zone conflict can be considered, in some cases, a substitute for conventional proxy war. We designed a model that looks at the decision-making process behind engaging in gray zone conflict and protecting vulnerable areas from harm caused by gray zone activities. We focus on these actions as a mechanism for power struggles between the revisionist and status quo powers, as in proxy war. This model fits a variety of real-world scenarios, and can help in identifying mechanisms for reducing gray zone activities, and potentially for reducing the likelihood of conventional conflict.

Conceptual Model

Our conceptual model (Robinson et al. 2015) of the high-level generic structure behind gray zone actions for proxy war is shown in figure 1. At the bottom of the diagram is the revisionist state's desire to revise the current order, which influences its decision to conduct gray zone activities in the vulnerable area. If the revisionist state does this too quickly, the status quo state will have high discordance (Bernard et al. 2016) about the gray zone activities and will actively resist them. Discordance is the normalized difference between perceptions and expectations, and is highly dependent on the speed of change in gray zone activities. The status quo state's resistance to gray zone activities will increase the perceived cost of gray zone conflict, which may lead the revisionist state to reduce gray zone activities. However, Resistance from the status quo state is interpreted as a power struggle by the revisionist state, which increases their desire to revise the current order and subsequently increases their gray zone activities.

The status quo state can also react to gray zone activities through political resistance. Most directly, this increases the perceived cost of the conflict, incentivizing the revisionist state to reduce gray zone activities. However, this action also decreases the economic and political interdependence between the status quo and revisionist states, which has two major paths of effect on gray zone activities. First, reducing interdependence harms the revisionist state's economic and political strength. When these domestic factors are not doing well, the revisionist state's leaders increase their desire to revise the current order (Levy 1988), both to deflect attention from domestic conditions and to attempt to improve their situation. Second, reducing economic interdependence will decrease the perceived cost of conflict, reducing a barrier to gray zone activities.

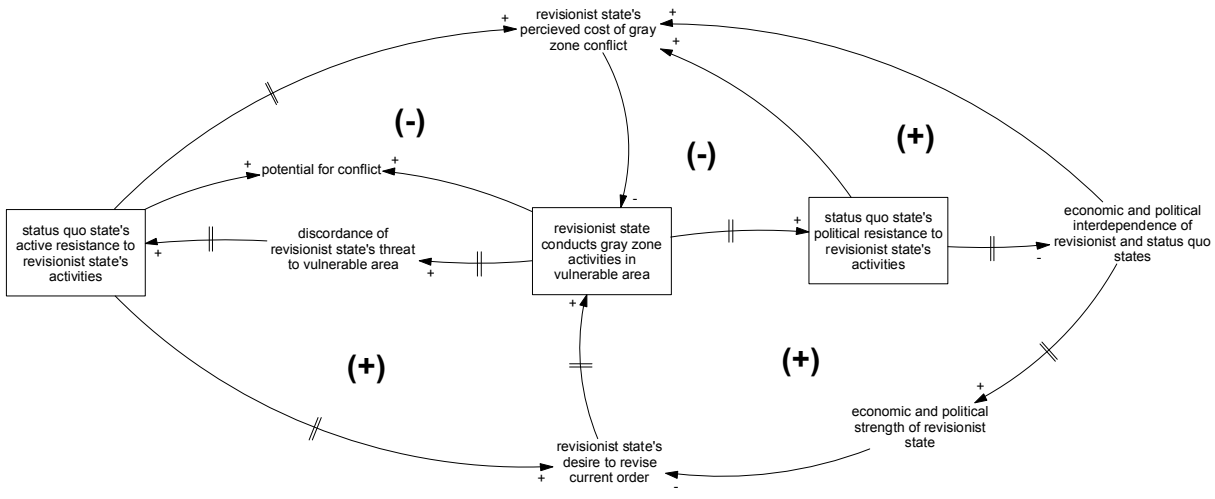

Figure 1: Causal loop diagram of high-level decision making about gray zone actions for proxy war

Examples

The conceptual model in figure 1 is generic enough to apply to a variety of real world scenarios. The basic set of actors and interactions is shown in figure 2. Three historical examples are shown in figure 3. The first is the American Revolution, in which France acted as the revisionist state in assisting revolutionary forces in the USA, with Great Britain acting as the status quo state. In the Sudetenland Crisis, revisionist Germany used gray zone tactics against status quo Great Britain. Finally, the Cuban Missile Crisis and related activities involved a revisionist USA competing with status quo Russia.

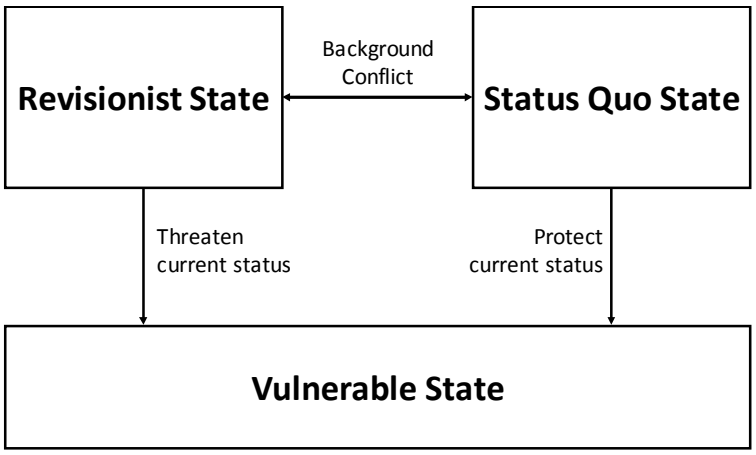

Figure 2: Actors and interactions

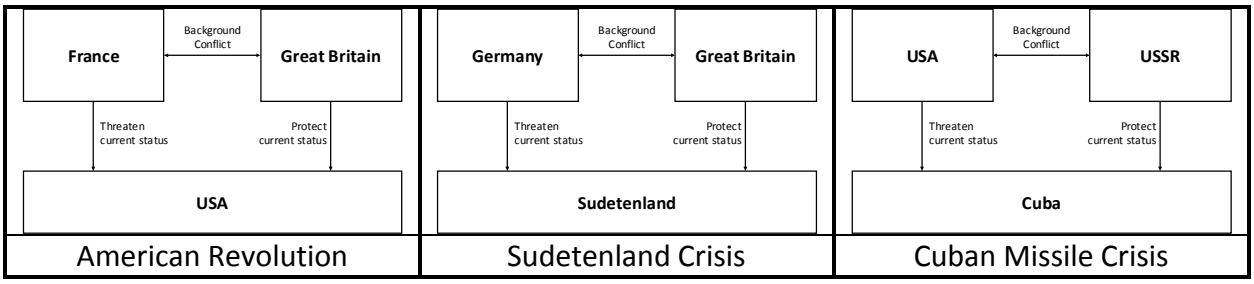

Figure 3: Examples

Computational Model

Since this model focuses on decision making surrounding gray zone activities, we used the DYMATICA framework to build the computational system dynamics model. DYMATICA is a system dynamics-based modeling framework for simulating systems that involve human behavior and decision making. The theoretical framework is based on well-established psychological, social, and economic theories that have been incorporated into a single structure that is both self-consistent and dynamic. Details can be found in Bernard et al. (2016). DYMATICA uses a hybrid architecture with cognitive models implemented using system

dynamics and embedded into an encompassing system dynamics model, which simulates interactions between people, groups, and physical, economic, or other system components. Figure 4 shows the computational structure of DYMATICA's cognitive framework.

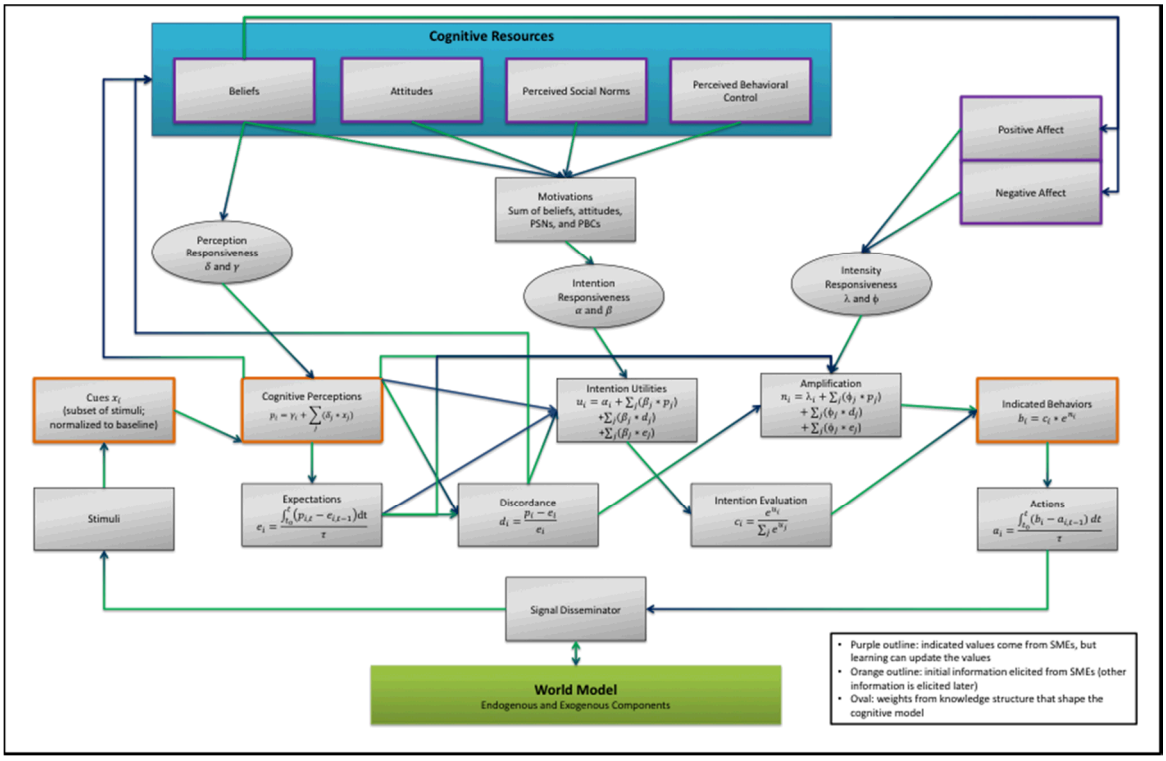

Figure 4: Computational structure of DYMATICA's cognitive framework

The cognitive portion of DYMATICA begins with individuals or groups being exposed to cues (stimuli relevant to the decision maker). These cues are processed to create cognitive perceptions, the decision maker's assessment of the world or situation. Over time, cognitive perceptions become expectations, which are compared to cognitive perceptions to determine discordance with the current situation. Intentions are calculated using utility functions, and a multinomial logit function (McFadden 1982) compares intentions to determine behaviors, which over time become realized actions. One of these cognitive models is populated for each individual or group being included in the model. The cognitive models are connected to each other and to a world model sector using system dynamics. The world model sector includes the non-cognitive components of the system of interest, including physical systems, economics, etc. Outputs from the world model and the cognitive models act as inputs, or stimuli, for the cognitive models in subsequent time steps.

Initial Results

Our first step in building and analyzing the gray zone proxy war model was to simulate the Vietnam War example shown in figure 5. The model is spurred by a drop in the political strength of North Vietnam, caused by the split of the country into North and South Vietnam,

and a subsequent coup in South Vietnam. The USSR, in this model, also perceives this as a political loss. This leads to a desire on the part of the North Vietnam-USSR alliance to revise the current order. While this sequence of events did lead to war, we focus on the gray zone aspect of the interaction.

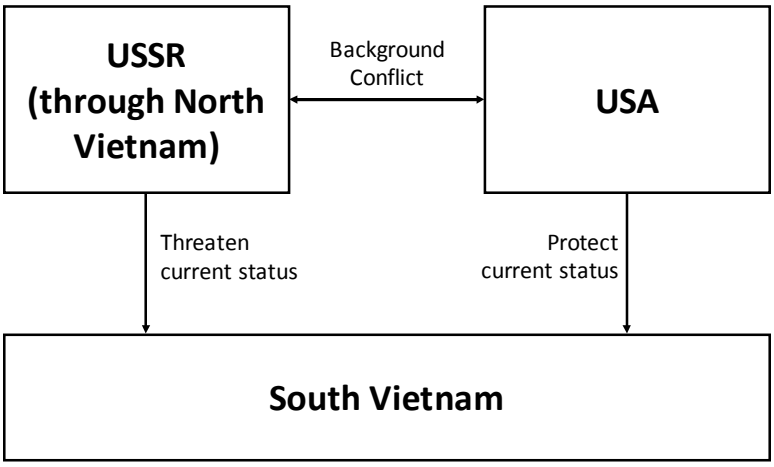

Figure 5: Actors and interactions in the Vietnam War example

Initial results of the Vietnam War parameterization of the model are shown in figure 6. After the initial, exogenous political loss, North Vietnam and the USSR's desire to revise the current order increases substantially. Gray zone activities ramp up, followed by both active from the United States via assistance to South Vietnam in the war and increased political resistance from the United States via the Cold War. The bottom center image in figure 6 shows model results compared to data on US and allied troops fighting in Vietnam over time, and shows that the model aligns fairly well with data in this instance.

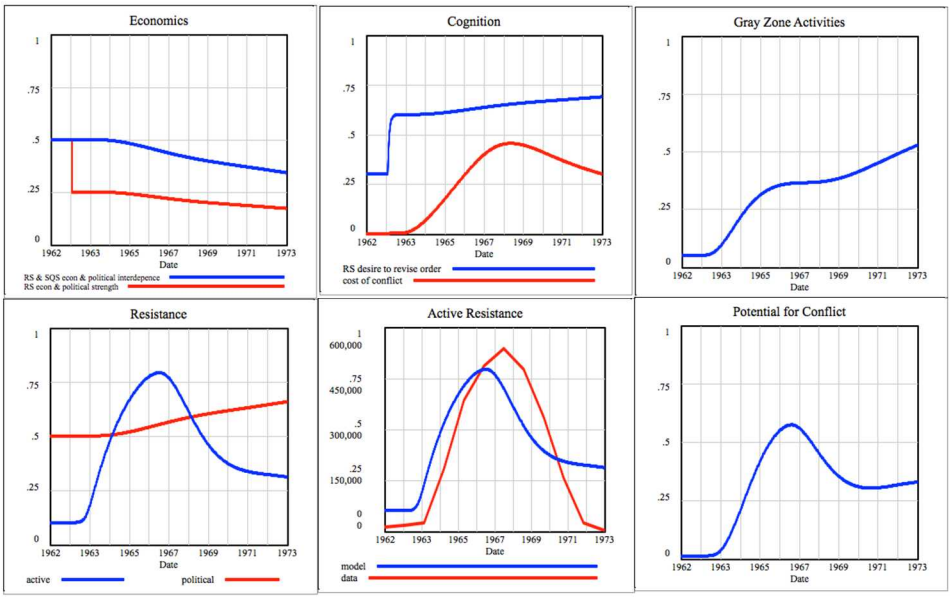

Figure 6: Initial results of the Vietnam War parameterization of the model

Future Plans

This is a continuing project, and we plan to expand this work substantially. First, we plan do a statistically rigorous calibration of this model to data, including more data sets than shown above. Next, we will re-parameterize this model to fit a variety of other historical scenarios, including but not limited to those shown in figure 3. From this set of model parameterizations, we hope to develop theory on how to parameterize this model given different conditions, and use this calibration information to validate the model on at least one more historical dataset. The validation step will help us to understand how much confidence we should have in this model, including for use with current and potential future scenarios. We can then use the model to explore courses of action that are most likely to reduce risk of conflict or create other desired conditions in scenarios where gray zone tactics are being used as proxy war surrogates.

We also plan to expand our conceptualization of gray zone activity to a more comprehensive model that includes internal dynamics of the vulnerable area. Figure 7 shows a potential version of that model, focusing heavily on internal dynamics of the vulnerable area and whether its population supports the revisionist or status quo states. We also hope to use these models to assess specific gray zone activities and effects of countermeasures.

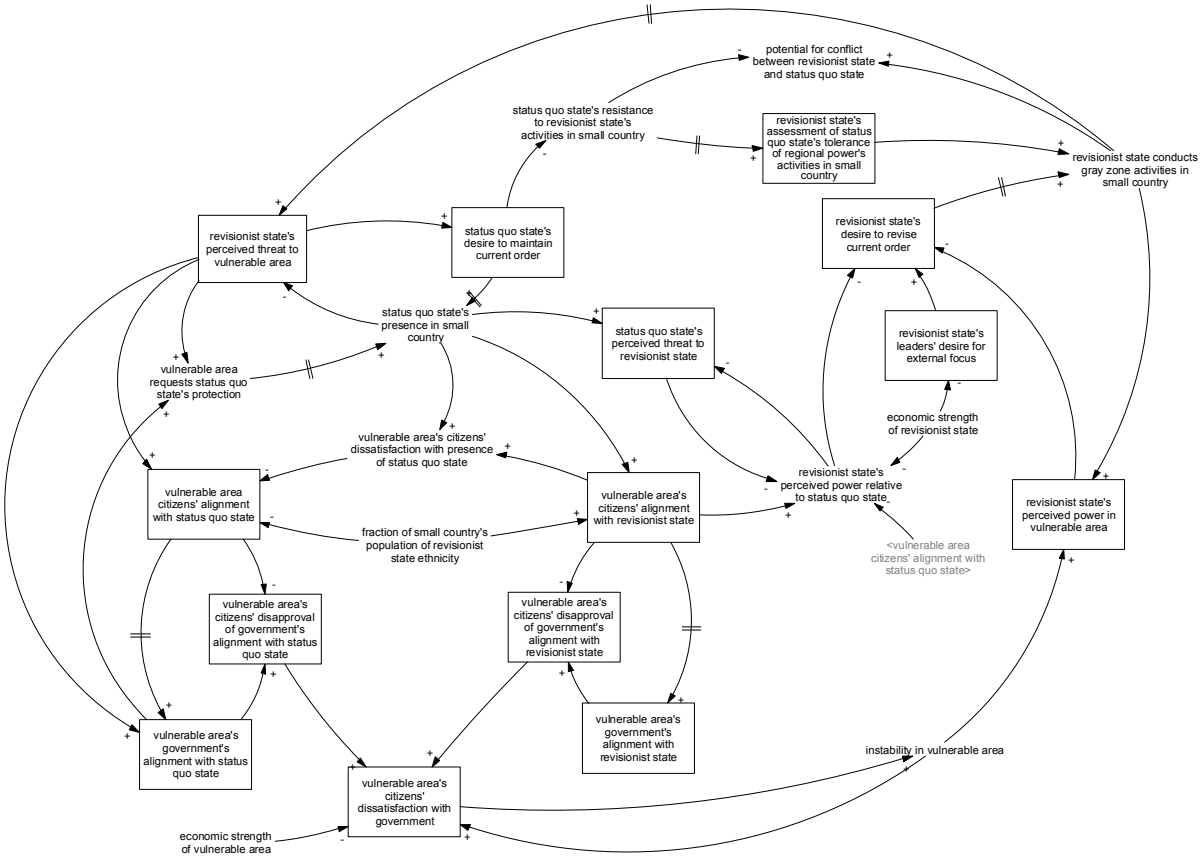

Figure 7: Potential future model extension

This project offers many opportunities for expansion, and theory on gray zone conflict has not yet been explored with dynamic simulation or systems thinking. The high level model described here is a first step toward dynamic exploration of this topic, and could develop into useful models for understanding a new generation of conflict.

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