

Control & Collaboration: Simulating the Logic of Violence in Civil War for Political Science Students

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Abstract

This paper outlines a classroom simulation of Kalyvas' control-collaboration model of violence in civil war. Though central to conflict studies, the control-collaboration model has not been previously simulated so that it may be taught in an intuitive manner to advanced undergraduates. The simulation presents students with the strategic choices available to both armed actors and non-combatants in a contested village. The simulation captures three core elements of the control-collaboration model: the joint production of violence by combatants and non-combatants, the concentration of selective violence in zones of partial control, and the disjuncture between a conflict's master and local cleavages.

1 Introduction

Since its publication in 2006, Stathis Kalyvas' (2006) landmark classic *The Logic of Violence in Civil War* has occupied a central place in the study of civil war and conflict processes. The control-collaboration model of violence, outlined in Kalyvas' book, has been the subject of numerous empirical tests, extensions, and refinements (Balcells 2017; Bhavnani, Miodownik, and Choi 2011; Kalyvas and Kocher 2009; Steele 2017; Vargas 2009), and has helped spark a far-reaching research agenda on the micro-level dynamics of civil war (Kalyvas 2012). The book has also increasingly appeared on political science syllabi, thanks in part to its accessible and gripping style—ideal for undergraduate audiences—as well as the proliferation of peace and conflict resolution majors and M.A. degrees. These developments respond to a pressing need in policy circles for sophisticated analysis of conflicts in an increasingly conflict-ridden world.

Yet despite its importance to conflict scholarship, Kalyvas' control-collaboration model has not been previously simulated so that it may be taught in an intuitive manner to advanced students. This is unfortunate, as simulations have proven to be valuable pedagogical tools for teaching abstract models of political behavior (Asal 2005; Brynen 2010; Haynes 2015; Kollars and Rosen 2017; Levin-Banchik 2018; Shellman and Turan 2006). Moreover, while *The Logic of Violence in Civil War* builds its theoretical scaffolding with exceptional clarity, the core of the control-collaboration model and its empirical implications may be less clear to undergraduates. This is because Kalyvas (2006, 197–207) presents the theory's key insight in a formal model that may prove difficult for some students to translate into concrete terms. Further, the book makes large demands upon its readers' ability to empathize with the choices made by individuals caught up in wartime situations.

In this paper I describe a classroom simulation based on the logic of Kalyvas' control-collaboration model, which presents students with the strategic choices available to both armed actors and non-combatants in a contested village. The simulation is adapted from the game *Mafia*, in which a group of innocents attempts to identify an unknown killer before all are killed (Davidoff 1999). In my adaptation, the killers are known (soldiers belonging to two armies, Red and Black), while the civilian loyalties necessary to select their targets are private information partially known by the other students (the villagers, divided into four clans: Clubs, Diamonds, Hearts, and Spades). The soldiers attempt to arrest their opponents' loyalists, while the villagers attempt to manipulate the soldiers into arresting local rivals. The simulation captures three core elements of Kalyvas' control-collaboration model: the joint production of violence by combatants and non-combatants, the concentration of selective violence in zones of partial control, and the disjuncture between a conflict's master and local cleavages.

2 Describing Kalyvas' Control-Collaboration Model

Kalyvas argues that both indiscriminate and selective violence are ultimately functions of the level of local control exercised by competing armed actors. The model assumes that armed actors engaged in irregular warfare prefer to employ selective violence in territories under their control. Specifically, government and rebel forces seek to arrest or kill their opponents' supporters scattered among the civilian population, but lack information on individual civilian loyalties which are, after all, easily falsified. Armed actors can overcome this "identification problem" by relying on denunciations from civilian informants (Kalyvas 2006, 89–91). This is because civilians possess the local knowledge necessary to identify defectors that armed groups lack. Yet civilians' goals do not necessarily align with those of occupying armies. While denouncers may proffer accurate information, they may also falsely denounce their rivals in local familial, economic, and romantic disputes. That is, denunciations are often driven by "local" dynamics rather than the conflict's "master cleavage" (Kalyvas 2003).

Selective violence therefore results from a "joint process" in which civilians provide (often inaccurate or malicious) information, and armed actors provide violence. However, civilians are only likely to proffer the necessary denunciations where an armed actor controls a territory strongly enough to credibly protect the civilian from its opponent's retaliation. Thus, levels of selective violence can be predicted by the local balance of military control between the competing armies.

Figure 1 shows the complicated relationship between the level of control by each armed group in any given region and the amount of selective violence predicted by the theory. Kalyvas divides control into five zones. Zones 1 and 5 are completely controlled by Actor A and Actor B respectively, and should thus see "no defection, no denunciation, and no [selective] violence" (Kalyvas 2006, 203).¹ In Zone 3, Actors A and B have equal levels of control (for example, one side controls a village during the day, while the other controls the village during the night). In this zone, while the actors have a large incentive to punish civilian defectors in order to gain control of the zone, they can offer no credible protection to potential informers. Thus, civilians have no incentive to inform, and again, very little violence takes place. In Zones 2 and 4, however, the incentives of armed actors and civilians align. In these zones, one armed actor possesses dominant, but incomplete control. This actor possesses a strong incentive to identify and punish defectors, and they can offer credible protection to informers. Thus, the model predicts high levels of selective violence in Zones 2 and 4.

¹In zones where one armed actor exhibits "full" control, their excluded opponent may rely on indiscriminate violence (Kalyvas 2006, 146–149, 204). The classroom simulation developed here does not simulate indiscriminate violence.

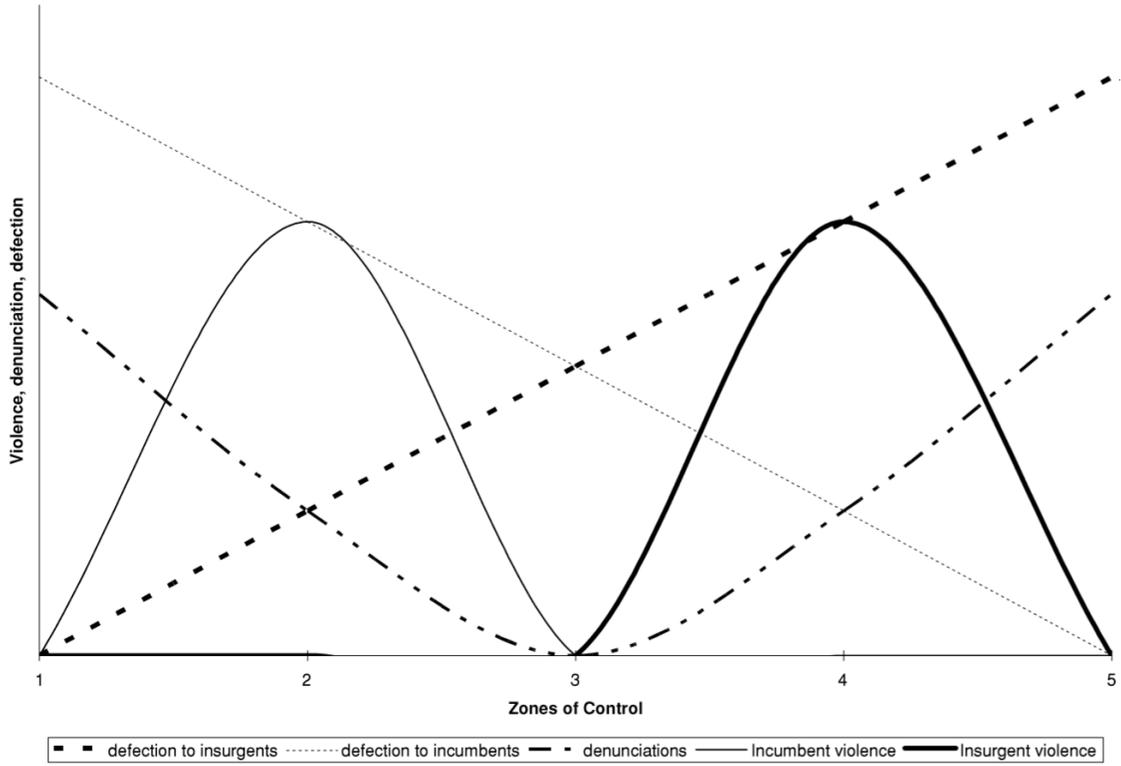


Figure 1: Predicted Pattern of Selective Violence, Defection, and Denunciation (Kalyvas 2006, 204)

3 Describing the Simulation: Setting and Roles

The simulation is set within a village contested by two occupying armies in a civil war, with students taking on the role of either a soldier or a villager. These roles are randomly assigned using a standard 52-card deck that has been carefully prepared prior to the simulation. Students who are dealt number cards are villagers while those receive Jacks (and in larger classrooms, Queens) are soldiers, with the ratio of villagers to soldiers roughly 4:1. The instructor should remove all extraneous cards; for example, in a minimal class of ten students, the deck should contain ten cards: the 2 and 3 of clubs, the 2 and 3 of diamonds, the 2 and 3 of hearts, the 2 and 3 of spades, a red Jack, and a black Jack. For twenty students, the instructor should add the 4 and 5 of each suit, and a second red and black Jack. Red and Black represent different sides of the civil war (that is, the opposing sides of the “master cleavage”), while the different suits (clubs, diamonds, hearts, and spades) represent different village clans (that is, villagers’ identities with respect to “local cleavages”). The students should keep their cards hidden as they are being dealt.

Table 1: Rock-Paper-Scissors Decision Rule

Winner 1	Winner 2	Tie-break	Zone
Red	Red		1
Red	Tie		2
Red	Black		3
Tie	Red		2
Tie	Tie	Red	2
Tie	Tie	Black	4
Tie	Black		4
Black	Red		3
Black	Tie		4
Black	Black		5

Discovery Round

After the instructor has dealt the cards, she should ask the soldiers to hold their cards up and publicly identify themselves. The soldiers must then close their eyes and put their heads down as the villagers hold up their cards. The villagers thus learn all the identities within their village: who belongs to their own clan and who belongs to opposing clans, and who supports Red and who supports Black. However, soldiers are not privy to any of this “private” information.

At this point, the simulation begins.

Battle Round

The soldiers now must battle for control of the village, determining where the village falls within Kalyvas’ typology of zones of control: Zone 1 (total incumbent control), Zone 2 (partial incumbent control), Zone 3 (fragmented control), Zone 4 (partial insurgent control), and Zone 5 (total insurgent control). Here I outline two different battle decision rules that the instructor might choose: rock-paper-scissors, or using six-sided dice.

Rock-paper-scissors: One soldier from each army (chosen on a rotating basis) plays rock-paper-scissors. They should “shoot” two matches, unless this results in two ties, in which case a tie-break match determines “partial” control.² Table 1 shows the different rock-paper-scissors outcomes and the resulting zone of control.

6-sided dice: This decision rule is even simpler. A soldier from each army rolls a six-sided dice. If each soldier rolls the same number, the village will come under “fragmented” control (Zone 3). If one army’s roll is +1 or +2 larger than the others, then the village will come under “partial” control (Zone 2 or 4) of the

²Without this rule, “fragmented” control would occur far too often, as ties are the most common outcome in a best-of-two game of rock-paper-scissors.

winning side. If one army's roll is +3 or more larger, the village will come under "full" control (Zone 1 or 5) of the winning side.

If the village is under "full" or "partial" control at the conclusion of the Battle Round, the losing army's soldiers must leave the room for the subsequent Denunciation Round. These soldiers are not allowed to observe the subsequent Denunciation Round. If the village is under "fragmented" control, all soldiers remain in the room during the Denunciation Round.

Denunciation Round

During the Denunciation Round, the soldiers who remain in the classroom have three minutes to ask the villagers questions (the instructor should consider setting an alarm to ensure that the round does not drag on if villagers do not share information). The soldiers' goal is to ascertain the identities of the opposing army's supporters within the village, so that they may then arrest them (Kalyvas' "identification problem"). The villagers' goal is, first, to avoid individual arrest, and second, to direct soldiers to arrest members of opposing clans. The scoring system described below incentivizes these goals, though villagers may also discover personal motivations: in past simulations, for example, students have sometimes sought revenge after having been denounced in previous rounds, even at the expense of their own (simulated) safety.

At the end of the Denunciation Round, each army in the classroom may arrest one villager of their choice. Therefore, in Zones 1 and 2, where the Black Army has been sent out of the classroom, the Red Army soldiers will briefly confer at the end of the Denunciation Round and agree on which villager to arrest. In Zones 4 and 5, only the Black Army soldiers will make confer and make an arrest. In Zone 3, or "fragmented" control, both armies may make an arrest. The armies may also choose to forgo arresting a villager if they feel they lack enough information to select a target.

Upon being arrested, the villager reveals her card and all players observe the outcome of the round.³ If an army has been sent out of the room, the instructor will recall them at this point and inform them of the outcome. The instructor calculates any team points won or lost. At this point, the next round of the simulation begins, starting with a new Battle Round.

Villager strategies in the Denunciation Round: The Denunciation Round produces villager strategies that often closely align with the expectations of Kalyvas' theory. In zones of "full" or "partial" control, where only one army is present in the room, denunciations should abound. In zones of "fragmented" control, with both armies present, theory predicts few denunciations: villagers should not be willing to risk publicly identifying their loyalties in front of the opposing army. However, students often behave less rationally than we would expect of real-life security-maximizing villagers, and some tend to talk freely under "fragmented"

³Arrested villagers may continue observing the simulation, but may not influence the outcome of subsequent rounds.

control. These students are likely to find themselves rapidly arrested, reflecting a Colombian campesino's pithy statement, "Aquí el que habla, no dura" (Kalyvas 2006, 227).

Other behaviors predicted by Kalyvas can commonly be observed in this classroom simulation. These include "preference falsification" (Kalyvas 2006, 93–101): in zones of "full" or "partial" control, villagers who are loyal to the absent army should feign loyalty to the occupying army. The students will also likely observe "counterdenunciations" (Kalyvas 2006, 195), and even mutually destructive cycles of revenge between clans (Kalyvas 2006, 58–61).

It is important to note that soldiers' and villagers' goals only partially align. While soldiers seek to identify which villagers support Red or Black (the "master cleavage"), villagers are only concerned with promoting their clan (Clubs, Diamonds, Hearts, or Spades; i.e. the "local cleavage"). As Kalyvas predicts, denunciations in the simulation may reflect this disjuncture between the master cleavage and local-level loyalties. Thus, members of the Hearts clan may denounce a member of the Diamonds clan in pursuit of their local victory, even though both clans are Red in the context of the master cleavage. Similarly, astute players in the Spades clan might hit upon the strategy of denouncing Clubs when under Red Army control: this simultaneously strikes at a local rival while bolstering the credibility of Clubs' feigned loyalty to Red.

Scoring System

Soldiers and villagers score points for meeting different goals. The soldiers seek to win the conflict, while villagers seek to survive and to promote their local clan. At the instructor's discretion, the simulation may end after a designated number of rounds or when one army scores five points.

The scoring system serves two goals: it is simple enough for students to quickly understand and strategize around, and it parallels actors' incentives in Kalyvas' control-collaboration model. The instructor may easily modify the scoring system to fulfill different pedagogical goals. Points may count for extra-credit at the instructor's discretion, to further incentivize rational decision-making.

The army with the most points at the end of the simulation wins.⁴ Armies may gain or lose points based on the outcome of each Denunciation Round. Specifically, an army gains one point (+1) for every round it achieves full control of the village. It may do this by a) winning full control in the Battle Round, or b) arresting one of its enemy's supporters under fragmented or partial control. However, an army loses a control point if it arrests its own supporter (-1). If an army arrests its own supporter after having won "full" control, it also loses the point gained in the Battle Round (thus, -2 in total). This serves to deter armies from making arrests under "full" control—as Kalyvas (2006, 203) argues, violence under such circumstances

⁴Soldiers in winning armies may gain 10 extra credit points as an incentive.

is often counterproductive.⁵

Villagers, by contrast, gain a point (+1) for every round they survive. They also gain five points (+5) if their clan has the most clan members left at the end of the simulation. Therefore, villagers should first seek their own survival and second, seek to promote the interests of their clan by denouncing members of other clans. Villagers do not gain any points from victories by the Red or Black Armies, exemplifying the disjuncture between local and macro-cleavages.

4 Teaching the Model

Simulating violence: Any simulation of civil war violence requires sensitivity on both the instructor and students' part. Instructors should first consider the classroom context before running this simulation. This simulation would not be appropriate for an introductory comparative politics course, but rather should be run in advanced courses that treat political violence as a central topic. Due to the fraught subject matter and the emotional challenge of strategies that depend on prevarication, some students may find this simulation stressful. Nonetheless, while I give my students the option to skip individual classes that may be triggering, none have exercised that option for this simulation and none have expressed regret over their participation.

Prior to the simulation, the instructor should prepare students by reminding them to be respectful of each other and of victims of civil war violence. The instructor may also take several steps to lower stakes, such as eschewing violent language of killings and assassinations in favor of "arrests." Furthermore, the simulation may be set in a fictional country or in a fantastical pop culture setting (with students taking on the roles of rebels, imperial stormtroopers, and moisture farmers on Tattooine, for example).

Pedagogy: Instructors can take several steps to help students understand the logic of the simulation and Kalyvas' model. First, instructors should draw a column for each of the five zones of control on the board, and record in which zone each arrest occurs. If the students play relatively strategically, it should become clear that arrests cluster in zones 2 and 4, approximating the pattern predicted in Figure 1.⁶

Second, instructors should follow the simulation with a discussion of the players' strategies. The instructor may ask the soldiers to explain how they sought to determine the accuracy of the information they were receiving, which signals they took as credible, and which they deemed unlikely to be true. An example from the game, in which two villagers denounced and counterdenounced each other, could be examined. How did the soldiers determine which villager to believe? Finally, the instructor should ask the soldiers to

⁵But see Balcells (2017) for a discussion of circumstances when armies do employ violence against their enemy's supporters behind frontlines.

⁶If students play less strategically (for example, if arrests cluster in Zone 3), instructors can ask students why their results differed from Kalyvas' theoretical expectations. Students should observe that as classroom stakes are much lower than those in actual war-zones, villagers accepted riskier strategies.

delineate the social structure of the town, if they are able. Which villagers belonged to which clan? Next, the instructor should ask the villagers to outline their strategies for survival and for clan victory. These are likely to be varied, as discussed above. Finally, the instructor may move from strategies to the emotions players felt during the simulation, which might range from frustration to worry, excitement, and desire for revenge. How might these emotions translate into the violent dynamics of actual civil wars?

Role-playing variant

The classroom simulation presented above recreates the minimal abstract logic of Kalyvas' control-collaboration model. With some extra effort, the instructor might elaborate a role-playing variant of the simulation, in which students, after receiving their playing card, review a paragraph-long description of their character and pre-war interrelationships with other characters ("Role-playing guide for 3 of Spades: Your son is married to 3 of Hearts' daughter. Previous business dealings with your fellow clan member 4 of Spades went sour, and you hold a grudge. Your clan has been locked in a feud with the Clubs clan for generations.") These roles and scenarios may be as simple or as intricate as the instructor desires. While labor-intensive to design, a role-playing variant could offer several advantages over the vanilla simulation: it would make civilian loyalties less systematic (better approximating real-life situations), it would give reticent students material for banter in the Denunciation Round, and it might provide students with a greater sense of immersion.

5 Conclusion

This paper presents a classroom simulation of Kalyvas' control-collaboration model of the logic of violence in civil war. Given growing enrollments in conflict resolution programs—and the growing incidence of real-world conflict—this simulation fills an important pedagogical need. Students should come away from the simulation with an intuitive sense for Kalyvas' theory. More than this, after spending a class period making the difficult life-and-death decisions that confront non-combatants caught up in civil war, students should develop a greater empathy for the victims of conflict.

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