Paramilitary Demobilization in Colombia: Insights from a System Dynamics-Based Seminar Game

R. Evan Ellis
Booz Allen Hamilton, Inc.
8283 Greensboro Drive
McLean, VA 22102
(703) 377-4174
ellis_evan@bah.com

This paper presents insights from an interactive seminar game using system dynamics to help the U.S. Latin American policy community explore issues associated with the process of paramilitary demobilization in Colombia. The game used system dynamics to represent the strategic interactions of the key actors in the Colombian paramilitary peace process, including their pursuit of both competing and complimentary goals. The process leveraged the gaming mode and rapid causal tracing capabilities of the Vensim™ system dynamics software to generate an interactive event in which players generated a rich set of strategic interactions in a hands-on learning environment. The success of the event suggests a promising new approach for leveraging the power of systems thinking and system dynamics software in policymaking and learning environments.

INTRODUCTION

The system dynamics-based "Paramilitary Demobilization Game" was held on March 18, 2005 on the Washington DC campus of the National Defense University (NDU) as a special session of the "Colleagues of the Americas" program. The event was a 3-hour tool-supported role-playing exercise, conducted by the author, in conjunction with support staff from NDU. Game participants included a range of U.S. military and government personnel, as well as academics involved with U.S. policy in Latin America. The objective of the event was to provide participants an interactive, hands-on environment in which they could explore and gain insight into the dynamics of the peace process and paramilitary demobilization in Colombia. The event was structured as a three-hour interactive seminar game, built around a system dynamics model designed to capture the key strategic issues and dynamics of the process and its environment.

The event was not only successful as an engaging and informative hands-on learning event for those attending, but also demonstrates the promise of a powerful and non-traditional new way of leveraging the power of systems thinking and system dynamics software to support collaborative learning and decision-making. The approach used the system dynamics methodology to represent the Colombian peace process in systemic terms, with complex interactions characterized in terms of positive and negative feedback relationships. The tool-supported event leveraged the visual orientation of system dynamics iconology and the capabilities of the Vensim™ software package to represent that strategic context in terms of a common mental map around which the

subject-matter expert participants could interact. By contrast to more traditional system dynamics approaches to collaborative analysis and learning, however, the event also leveraged the "gaming" mode and diagnostic utilities of the Vensim software to create a context in which the participants interacted around the shared model, iteratively bargaining with each other, making decisions on inputs within their control, viewing their performance through their scores on a series of metrics, and tracing the reasons for those outcomes through the system, back to their decisions, and back to the actions of the other teams.

CONTEXT

During almost a half-century of civil war in Colombia, the government has pursued a series of peace negotiations with each of the major factions and their predecessors. The current Colombian administration of Alvaro Uribe is focused on a policy of "Democratic Security" aimed at rebuilding the presence of the state and civil society throughout the country. Although the policy involves a combination of means, one of its cornerstones is the government's use of the military and other state forces to create a more secure and stable environment in which economic and civic life and the functioning of democratic institutions is possible.

Although the Uribe administration has publicly maintained its willingness to negotiate with all parties in the conflict, its most substantial progress at the negotiating table has been with militarized groups on the political right--rather than those on the left. In part, the current emphasis at the peace table reflects the manner in which President Uribe was elected in 2002 on a security-oriented platform representing a sharp change in direction from the perceived failure of the negotiations pursued by his predecessor, Andreas Pastrana. In the eyes of many Colombians, Pastrana had offered too many concessions in his pursuit of peace with the principal leftist factions, the Fuerzas Armadas Revolucionario de Colombia (FARC) and the Ejército Liberación Nacional (ELN)--including granting the FARC a territorial sanctuary that the guerillas used as a base for narcotics production, recruiting, and military operations against the Colombian government. Under the Uribe administration, by contrast, the aggressive pursuit of military operations against the FARC and ELN has led those groups to shun negotiations with the Uribe administration. On the other hand, paramilitary groups loosely aligned under the banner of the Autodefenas Unidas de Colombia (AUC) have been tentatively pursuing a process of negotiation with the Colombian government. It is this complex and controversial process which was the focus of the interactive system dynamics-based game described in this paper.

The Peace Process

The peace process between the paramilitaries and the Colombian government is complex at a number of levels. First, despite the manner in which it is treated in the popular press, the AUC is not a centralized entity. Rather, it is a political umbrella organization, created by its founder, Carlos Castaño, around a diverse array of militarized groups, ranging from private security forces protecting Colombian ranchers and landowners from the left, to a range of criminal organizations with deep ties to narcotrafficking and kidnapping. This lack of centralization and shared interests within the AUC has made negotiations difficult. Some groups, such as the main-line AUC

movement, currently led by Salvatore Mancuso, have publicly embraced their organization's ties to drug trafficking and have taken a hard line in negotiations with the government over issues such as amnesty from prosecution and extradition. Mancuso has repeatedly stated, for example, that the AUC will not negotiate under the threat of prosecution. Other groups, such as the Metro Block, have been less insistent on such legal protections, and have stridently criticized AUC links to organized crime. Indeed, the murder of Carlos Fernandez, leader of the AUC "Metro Block," in May 2004 was believed to be related to the strong position that he had taken against the deepening involvement of other AUC factions with narcotrafficking.

The current peace negotiations between the government and the AUC is based on the accords of Santa Fe de Realto (Realto I) in July 2003, and a somewhat less ambitious set of follow-on agreements signed in May 2004 (Realto II). The presently ongoing negotiations began in July 2004, and have focused on the demobilization of the paramilitaries and the conditions under which that demobilization will occur. Issues of particular weight include whether paramilitary leaders and the rank-and-file will have to serve jail time for past crimes, whether the groups will have to pay compensation to victims of their actions, and the degree to which illegal property holdings will be confiscated and their criminal enterprises will be systematically dismantled. The question of extradition has also been an issue of contention. The Uribe administration has been highly receptive to extradition petitions from the United States, for example, approving some 110 such petitions through August 2004…more than double the rate of his predecessor.

While the Uribe administration has maintained that paramilitary demobilization is a necessary component of reducing violence and lawlessness in Colombia, the accord has been sharply criticized by human rights organizations, as well as a number of groups inside and outside of Colombia. Generally, these groups have expressed concern that the process is conferring benefits on paramilitary leaders without requiring or ensuring that they fully dismantle their organizations and cease their activities. The accords are also criticized for failing to aggressively pursue either punishment or compensation for past misdeeds. Similarly, critics have expressed concern that the relatively short timelines and weak processes allow members who have committed serious crimes to escape prosecution. Finally, the accords are criticized for failing to solicit sufficient information from demobilizing members so as to support the identification and prosecution of true war criminals, or the pursuit of remaining elements of their criminal organization.

METHODOLOGY

The principal objective of the system dynamics-based game was to provide participants with a compelling, hands-on learning environment in which they could both contribute and gain insights about the dynamics of the paramilitary peace process currently underway in Colombia.

The structure of the game itself was based on similar work previously done for other DoD and commercial clients. The event was hosted by the National Defense University

as a special session in a regular series of events entitled “Colleagues of the Americas,” conducted for the Latin America policy community. The event was thus conducted as an academic exercise in a relatively compressed span of time, for the benefit of a relatively specialized community of Latin America experts.

The structure and content of the model used in the game--including the key players represented, their inputs, and the metrics employed to measure their performance was iteratively developed with subject matter experts at National Defense University. The model and process was also reviewed with a number of outside experts, who provided useful feedback on both the model and the structure of the game.

Structure of Interaction

The underlying system dynamics model used to represent the paramilitary peace process was structured around ten distinct groups of players, representing the key stakeholders. The decision to represent the various groups and subgroups as ten entities reflected a compromise between a desire to create action sufficiently detailed so as to represent issues and decisions relevant to policymakers, and the process constraints of the game. With more than ten teams, the game could not have been done within the allotted time, and participants may have become confused by the detailed interactions. On the other hand, with a smaller number of teams, key participants would have been left out, or important dynamics between subgroups abstracted away.

The ten groups used in the game to represent the key stakeholders in the paramilitary peace process were as follows:

- Paramilitary “Traditionalists”
- Paramilitary “Narcotrafickers”
- The Colombian Government
- The Colombian Congress
- Colombian NGOs
- The US Government
- The US Congress
- International NGOs
- The Organization of American States (OAS)
- The European Union (EU)

The game itself was structured as a series of three finite decision points: April 2005, October 2005, and April 2006. At each decision point, each of the groups was asked to make a series of decisions over specific inputs within their control. Through the mediation of the underlying system dynamics model, these decisions impacted both their own score and the scores of other groups. The ability to affect other teams (either in a positive or negative manner) gave each team bargaining leverage in its interaction with the other groups. The focus of each game period was thus a type of negotiation g between the groups over what each would do—and what each wanted the other to do. At the end of the bargaining period, each of the groups reported out their decisions. These decisions were then input into the model by the moderator in a collective session, with the results displayed for all to see. The performance of each group on the metrics established for measuring its performance was displayed and quickly tracked back to its

antecedents in other parts of the model using the causal tracing capabilities of Vensim™. In this manner, each group received specific feedback on the results of its decisions--including how the decisions of the other teams had impacted it, and why. This feedback then became the driver for the next round of play.

The combination of the bargaining environment and the ability to rapidly connect inputs to outcomes in a dynamic environment made the game particularly compelling for participants, and greatly heightened its value as a learning experience. The bargaining context permitted focused discussion of key real-world issues, while the underlying model channeled participants to think about the interaction between these issues in systemic terms. The following sections provide more detail into how the game was structured to achieve this, as well as some of the methodological issues raised in the process.

Game Periods and Process Flow

As noted previously, the paramilitary demobilization game utilized three periods of interaction between teams. These periods were supplemented by a session at the beginning of the event to prepare participants, and one at the end to capture lessons learned.

The interaction of participants in the game was supported by an open conference room forum with a separate “table” for each team. The facility also featured a central screen, visible from all of the team tables, in which the single version of the model, run by the moderator off of a laptop, could be projected. This structure thus allowed the groups to both separate and freely interact, as required by the context.

The paramilitary demobilization game began with an orientation briefing by the moderator to introduce participants to the structure of the event, as well as to highlight key elements of the paramilitary demobilization process relevant to game play. The opening session also provided the groups with tips on both process and strategy. Participants were divided up into their ten teams. The designation of team leaders, as well as the assignment of particular people to particular teams, was decided before the event, on the basis of the expertise and interest of the individual attendees.

	Move 1 – April 2005			Move 2 – October 2005		Move 3 – April 2006		Review
	Breakout Session		Joint Session	Breakout Session	Joint Session	Breakout Session	Joint Session	Joint Session
Paramilitary Traditionalists	Orient, Strategize	Negotiate, Decide	Run Sim, Review Results, Discuss, Brief Next Move	Negotiate, Decide	Run Sim, Review Results, Discuss, Brief Next Move	Negotiate, Decide	Run Sim, Review Results, Discuss, Brief Next Move	Control Team Comments, Review of Strategies Pursued, Game Insights
Paramilitary Narcotraffickers	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
COL Govt.	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
COL Congress	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
Colombian NGOs	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
US Govt.	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
US Congress	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
International NGOs	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
OAS	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
EU	Orient, Strategize	Negotiate, Decide		Negotiate, Decide		Negotiate, Decide		
Control	Observe			Observe		Observe		
	≅15 min	≅15 min	≅15 min	≅15 min	≅15 min	≅15 min	≅15 min	≅30 min

Figure 1 – Game Process and Structure

Upon being collectively briefed and divided into their teams, participants were given a short period of time to discuss the strategy and division of labor that each of their teams would pursue. In this session, the groups were directed to identify and come to an understanding of what their objectives were (as those objectives were represented through their performance metrics in the briefing slides and input sheets provided to each group). In this session, each group was also directed to establish what it wanted in terms of inputs controlled by other groups—and to identify what it could offer or threaten through the use of those inputs under its control. Finally, in the initial orientation, the groups were each was instructed to decide upon a division of labor and basic internal procedures—or in other words, how they would divide up to bargain with the other groups, and how they would internally coordinate each of the parallel bargaining processes that they would be undertaking during any particular move.

The three game periods represented intervals of six months in simulated time. The use of multiple time periods provided an experience in which the teams could play iteratively, including both learning from past performance, and developing trust relationships with the other teams based on the fulfillment of bargains made with them (or reciprocally, applying payback for the non-fulfillment of bargains). Because the time available for the game was relatively limited, the number three was also chosen as minimum number of periods required for the players to learn the fundamental dynamics of the game, without their interactions becoming too routinized or predictable. The simulated time interval of six months between each decision point was chosen so that simulated period of game play would take participants from the current day environment to a date just past the 2006 presidential elections in Colombia—an event regarded as critical in the strategic calculus of each of the real-world stakeholders in the bargaining process.

In the game, each of the periods was divided into a fifteen-minute session for bargaining and decision-making, followed by a fifteen-minute collective session for running the model and reviewing outcomes. For bargaining and strategizing, participants were given briefing packages that depicted the structure of the system dynamics model linking inputs to outputs. The packages were performed in color and in a stylized fashion to highlight the variables over which each team had control, the variables controlled by the other teams, the metrics determining the score for each team, and the model structure that linked inputs to outputs. Participants were also provided a series of paper input templates, resembling the visual depiction of the input sliders ascribed to their team, which they used to mechanically submit the decision for their group at the end of the period.

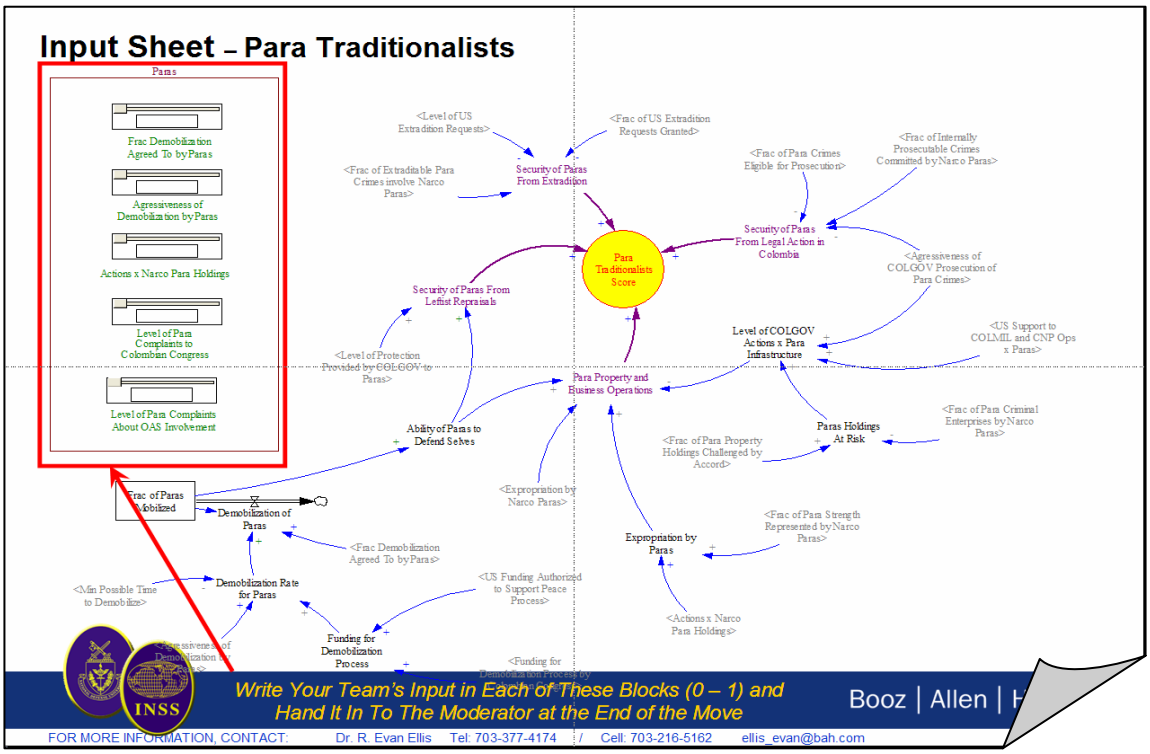

Figure 2 – Representative Team Input Sheet

Following the bargaining period, each team submitted the paper containing its inputs to the moderator, who put the inputs into the model in the presence of all participants. In this manner, each of the teams was able to observe whether the other groups had fulfilled (or broken) commitments made during the negotiation. The moderator then executed one six-month timestep of the model in front of the collected participants. He then quickly examined each team's score, explaining what he was doing as he examined each team's screen, and highlighting change in the team's assigned metrics, including principal causes for that change. In this manner, the process leveraged the visual display and diagnostic capabilities of Vensim™ to provide the participants feedback with respect to their decisions that allowed them to intelligently improve and adjust their strategy for the subsequent round. By visually showing participants how their decisions, and the decisions of other groups were linked to changes in their score through chains of relationships between variables, this approach had the added value of channeling the competitive instincts of each team into thinking about their relationship with other teams in a systematic fashion.

Following the conclusion of the three gaming sessions, the moderator led participants in a collective discussion of lessons learned. The principal purpose of this discussion was to connect participant insights from game strategies and outcomes to related issues in the real-world Colombian peace process, while that process was still fresh in their minds.

UNDERLYING MODEL

The model constructed to support the paramilitary demobilization game was deliberately simple relative to the number of issues and individual teams represented. The principal design goal for the representation was to capture the fundamental strategic interactions between the teams using the fewest number of variables possible, and to use labels and algorithms that facilitated rapidly tracing causal relationships through the model. In its representation of performance metrics, the model expressed outcomes as relative numbers, each taking on a value between zero and one. This approach made it easier for the players to quickly see the relationships between different outputs, as well as to compare scores across teams.

The model was divided into a series of ten pages, with each page representing the inputs, performance metrics, and model structure for one of the teams. This approach also facilitated rapid explanation of model results, in that the chain of causality for a particular outcome began, and was mostly contained within a team's own model page. At the same time, the approach also facilitated a level of consistency in the representation of model structure, insofar as the model pages displayed on the central screen at the game were the same pages used as a template for providing team inputs (See Figure 1), and also matched the representation of each team's performance metrics, as provided in the initial briefing.

To further make the model structure easier to understand, each team's principal output metric was represented as a large yellow circle (See Figure 3), and the first order causes were represented in purple with extra heavy causal arrows. Finally, to clarify the depiction, the weights of each causal factor contributing to the team's aggregate score were "hidden" within the algorithm itself. Although not desirable from a methodologically purist perspective, hiding the weighting factors greatly streamlined the depiction and understanding of performance factors for players not accustomed to system dynamics analysis. The model used between four and seven metrics in the calculation of each aggregate score. Because of the large number of teams and issues, this number was generally the smallest number of variables that adequately captured the complexities and inputs from other teams. By contrast, a larger number of variables simultaneously determining the aggregate metric would have made the outcome less transparent.

With respect to inputs, model sliders representing items over which the team had control were placed on the same page depicting its performance metrics and their causes. The variables themselves were used as slider labels to avoid having to duplicate the variable names elsewhere on the diagram. As with the output metrics, between two and five input sliders were used per team. This number gave each team several options to consider when bargaining with the other teams. A greater number of

sliders would have made each team's decision calculus too complex to be effectively thought through during the course of each move.

Metrics and Inputs for the Para Traditionalists

Figure 3 (below) depicts the principal model structure associated with the "Para Traditionalists" team. As depicted in the figure, the Para Traditionalists score was a function of the security of the group from extradition, their security from legal action in Colombia, the continuity of their property and business operations, and their security from leftist reprisals. Each of the metrics thus tracked back to the key bargaining table issues briefed to the players at the outset of the game. At the same time, a relatively short causal chain related each of these variables back to an action of one of the other teams. Thus, for example, the "Security of Paras From Extradition" was a function of the "Level of US Extradition Requests," as decided by the US Government team, as well as the "Frac of US Extradition Requests Granted," as decided by the Colombian government team. Similarly, the "Security of Paras from Legal Action in Colombia" was a function of the "Frac of Para Crimes Eligible for Prosecution," and the "Aggressiveness of COLGOV Prosecution of Para Crimes," both of which were determined by the Colombian Government. Similarly, "Para Property and Business Operations" was a function of the "Level of COLGOV Actions x Para Infrastructure," which was also significantly impacted by the decisions of the Colombian government. "Para Property and Business Operations was, however, also bolstered by actions taken by the Para Traditionalists to expropriate property from their rival "Narco Paras," and correspondingly hurt when the "Narco Paras" took actions to expropriate property from them.

With respect to the "Security of Paras from Leftist Reprisals," this factor was a function of the "Level of Protection Provided by COLGOV to the Paras," as well as the "Ability of Paras to Defend Selves." This critical variable, in turn, was an outgrowth of the "Frac of Paras Mobilized," and reflected relative progress (or a lack thereof) in the demobilization process. Through this mechanism, the game recreated one of the most difficult dynamics of the peace process: All other things being equal, the paras were fundamentally more secure by remaining mobilized, and thus had many incentives not to meaningfully participate in the peace process in the absence of action by the Colombian or US governments (or other actors) to change their decision-making calculus.

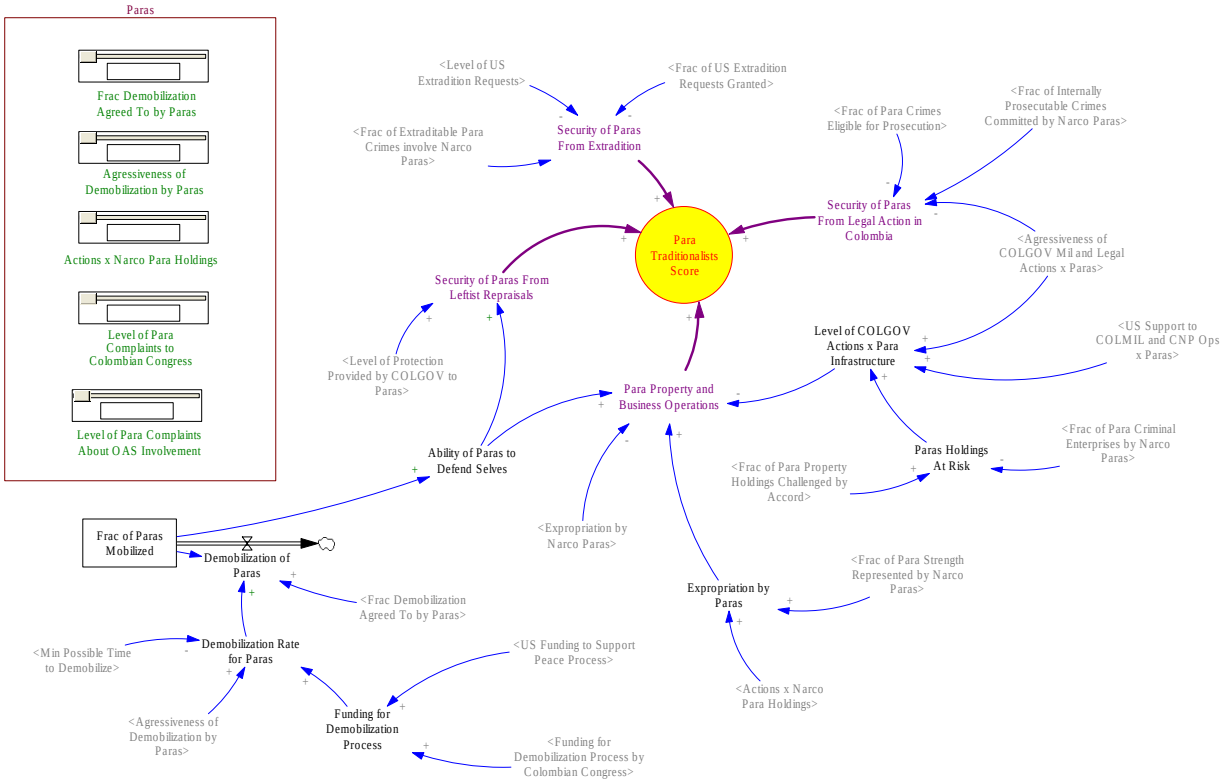

Figure 3 – Inputs, Metrics, and Structure – Para Traditionalists

The paramilitary traditionalist team had five control inputs to give it bargaining leverage in the game. First, it controlled the level of demobilization that it would agree to, and the rate at which it would implement this demobilization. Within this control, the paramilitary traditionalists could also "reverse" agreements, and begin to reconstitute their organization—although the effective reconstitution rate was only a fraction of the demobilization rate. By demobilizing, the paramilitary traditionalists directly or indirectly benefited the scores of a range of groups, increasing the Colombian government, the Colombian NGOs, and the international NGOs. On the other hand, it also made them vulnerable to both leftist reprisals and potential expropriations by the narco paras.

In addition to demobilization, the paramilitary traditionalists also could take actions to expropriate the business and property holdings of the narco-paras. Such expropriation directly benefited the para traditionalist's property holdings and business operations, although at the cost of increasing the level of violence. This expropriation was also more effective to the degree that there was a differential in size between the two paramilitary groups. Thus, through expropriation, the paramilitary traditionalists could take advantage of the weakness of the narco paramilitaries to the degree that the narco paramilitaries went further in demobilization than the paramilitary traditionalists.

Third, the paramilitary traditionalists represented a constituency in the Colombian Congress, and thus could complain to the Congress in an attempt to try an influence the Colombian government. Because such complaints directly hurt the Colombian Congress score, they served as a mechanism through which the paramilitary traditionalists could induce the Colombian Congress to put pressure on other teams, such as the Colombian government.

Finally, the paramilitary traditionalists could complain about the OAS involvement, thus increasing the level of controversy and hurting the OAS score. As with other groups that could complain about the OAS role, the value of this input for the paramilitaries is that it served as a potential reprisal if the OAS acted against its interests.

Metrics and Inputs for the Narco Paras

The determinants of the score for the Narco Paras were substantively equivalent to those for the Para Traditionalists, except that the weightings were different. As with the Para Traditionalists, the Narco Paras were rewarded to the extent that they achieved security from leftist reprisals, security from extradition, security from legal action in Colombian, and security of their property and business operations. By comparison to the para traditionalists, however, the narco paras were somewhat less worried about leftist reprisals, and somewhat more concerned about security from extradition and legal action in Colombia.

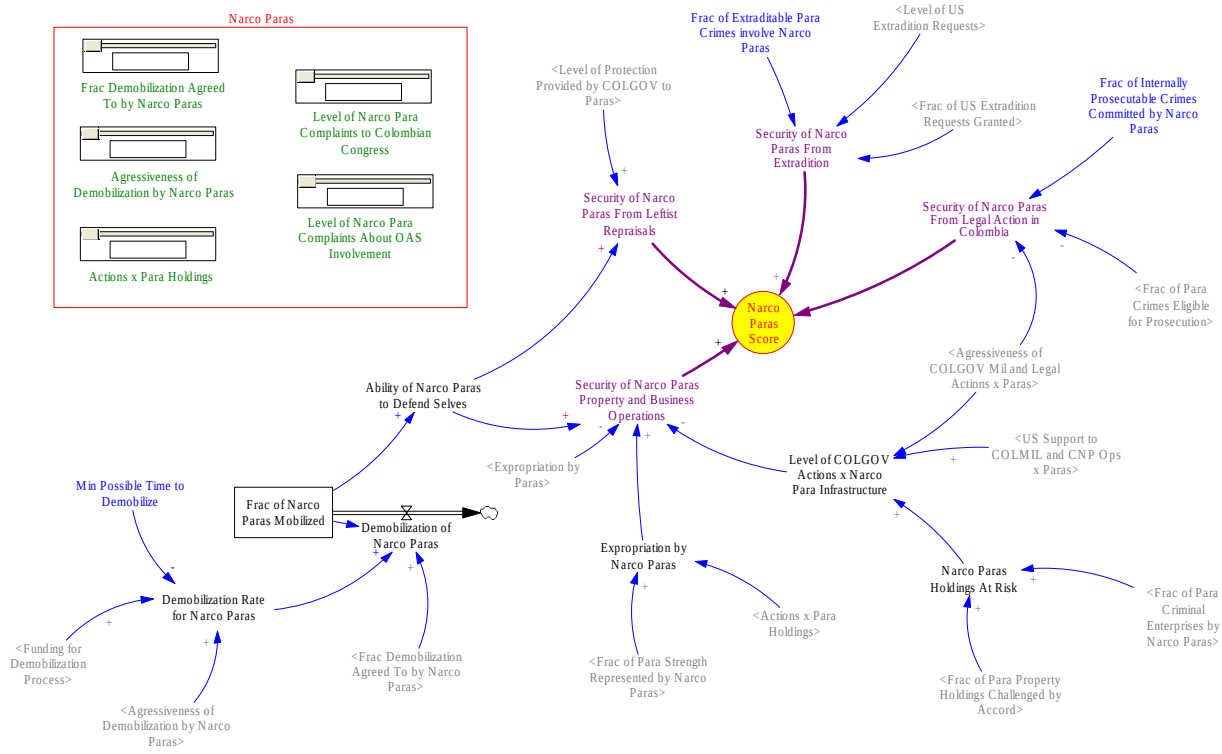

Figure 4 – Inputs, Metrics, and Structure – Narco Paramilitaries

The narco paramilitaries had the same five inputs as the paramilitary traditionalists for influencing the other teams: the fraction of demobilization that they agreed to, the aggressiveness with which they would implement that demobilization, actions against the property holdings and business operations of the paramilitary traditionalists, complaints to the Colombian Congress, and complaints about OAS involvement. Although the role of each has been discussed in the previous section, it is instructive to note that because each team could expropriate the property of the other if it became too weak, each paramilitary group had a vested interest in not demobilizing faster than the other—leading to a "least common denominator" situation in which both groups had a strong and interlocking set of incentives against meaningful demobilization.

Metrics and Inputs for the Colombian Government

With respect to measures of performance, the Colombian government had one of the most complex scores of the teams represented, with six driving factors: Perceived International Legitimacy of the Process, Fiscal Sustainability of the Policy, Effectiveness of the Counterdrug Campaign, the Level of Violence, the Extent of Demobilization, and the Success of COLMIL Imposition of Security Against Leftist Groups in the Countryside.

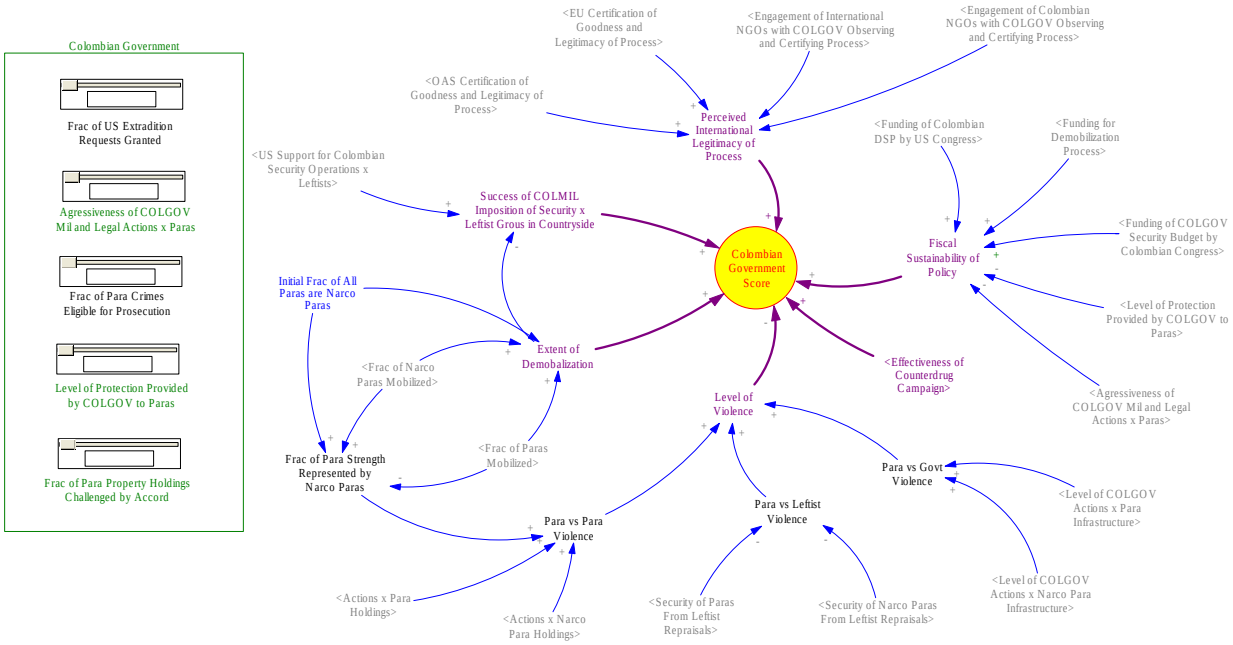

Figure 5 – Inputs, Metrics, and Structure – Colombian Government

The Colombian government team had five inputs under its control, representing a fairly wide range of levers. First, through the fraction of extradition requests granted, it could directly impact the security of the traditional and narco paramilitaries, and indirectly, the counterdrug campaign. On the other hand, by choosing to grant a low fraction of extradition requests, it increased the impression that the accord undermined the US narcotics policy, hurting the score of the US Congress.

The Colombian government team also decided the aggressiveness with which it would pursue military and legal actions against the paramilitaries, as well as the fraction of para crimes eligible for prosecution. Although the narco paras were somewhat more vulnerable to such threats than the para traditionalists, these levers gave the Colombian government effective ways to threaten both groups, while also pleasing the Colombian and international NGOs.

Third, the Colombian government also decided the level of protection to provide to the paramilitaries. This represented a “carrot” for the paramilitary groups, protecting them from leftist reprisals and helping to decrease violence, but also represented a cost that hurt the score of the Colombian government on sustainability.

Finally, the Colombian government decided the fraction of paramilitary property holdings that would be legally challenged through the accord. The greater the degree to which property holdings were challenged, the less was the security of the infrastructure of the paramilitary groups. On the other hand, such challenges to para property holdings also helped the scores of the Colombian and international NGOs, and thus were sought by those groups in their negotiations with the Colombian government.

Metrics and Inputs for the Colombian Congress

By contrast to the Colombian Government, the Colombian Congress was represented as more constituency focused, rather than outcomes focused. Accordingly, the four determinants of their score were the Level of Narco Para Complaints to the Congress, the Level of Para Traditionalist complaints to the Congress, the Level of NGO complaints to the Congress, and support for the accord among the Colombian public.

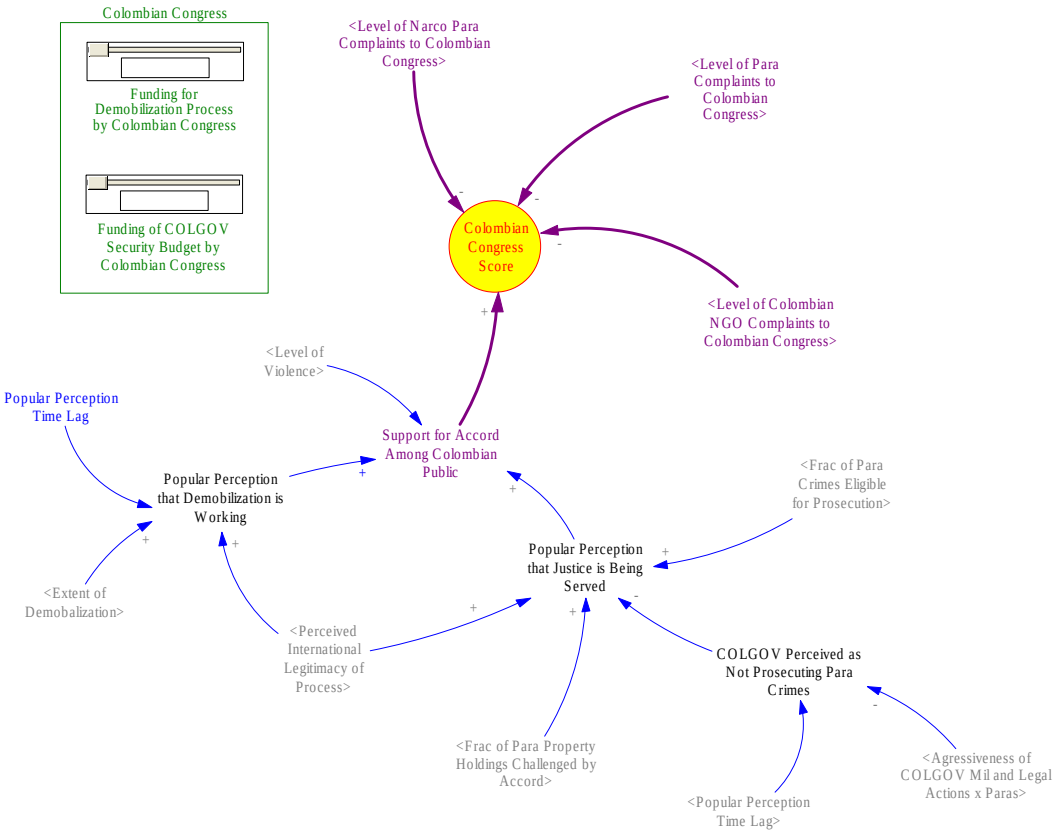

Figure 6 – Inputs, Metrics, and Structure – Colombian Congress

The inputs given to the Colombian Congress team centered on their fiscal authority. On one hand, they controlled the level of funding approved for the demobilization process—a significant factor in the rate of demobilization realized by the groups if they indeed chose to demobilize. On the other hand, they also controlled the funding of the security budget for the Colombian government, key to the fiscal sustainability of its democratic security plan. Through these two mechanisms, the Colombian Congress could not directly advance the process, but had the ability to put significant constraints on the process if it did not like how it was unfolding.

Metrics and Inputs for the Colombian NGOs

The Colombian NGOs were represented through a series of variables that strongly pitted their interests against those of the paramilitary groups: Their score was bolstered by demobilization, but was hurt by the security of narco paras' property and business operations, and by the security of paras and narco paras from legal action in Colombia. At the same time, however, their score was also hurt by the level of violence, and thus had a vested interest in the paramilitary groups not fighting with each other as they demobilized.

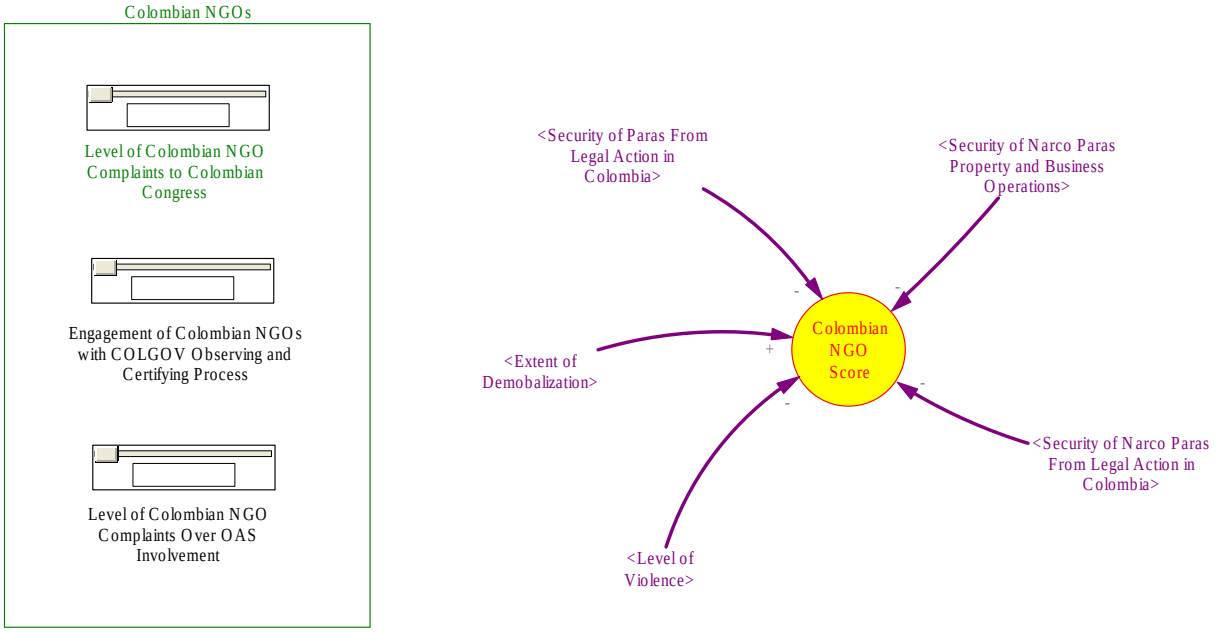

Figure 7 – Inputs, Metrics, and Structure – Colombian NGOs

The inputs available to the Colombian NGO team involved their ability to either complain or observe and certify the goodness of the process. On one hand, Colombian NGOs could complain to the Colombian Congress, directly damaging its score. Similarly, the NGOs could complain about OAS involvement, increasing the level of controversy of the OAS role, thus hurting the OAS score. On the other hand, by engaging with the Colombian government in observing and certifying the process, Colombian NGOs contributed to the international legitimacy of the process, benefiting the Colombian government, the Colombian Congress, the US Congress, and a number of the other groups indirectly.

Metrics and Inputs for the U.S. Government

The score of the U.S. government reflected a range of different considerations: On one hand, the US government score was tied to that of the Colombian government, and thus partly shared in its interests and its fate. The US government score was also strongly tied to the effectiveness of the counterdrug campaign in Colombia. On the other hand, the US government score was hurt to the extent that the accord between the Colombian government and the paramilitaries was felt to interfere with US extradition requests, and was hurt if the process required significant commitments of US resources.

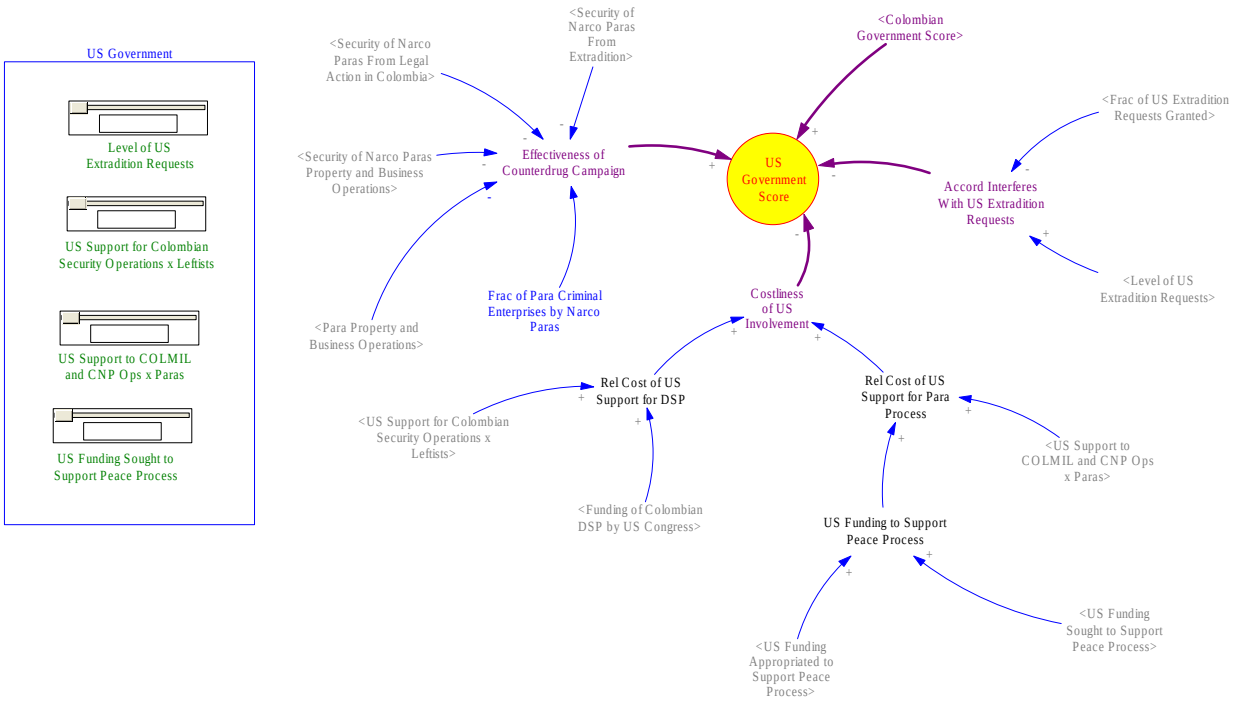

Figure 8 – Inputs, Metrics, and Structure – U.S. Government

The US government team was given four inputs for influencing and bargaining with the other players: the level of extradition requests, US support for Colombian security operations against the leftists, US support to Colombian military and police operations against the Paras, and US funding sought to support the Colombian peace process. By increasing extradition requests, the US contributed to the counterdrug campaign, thus positively impacting its score, that of the US Congress, and that of the US government. On the other hand, extradition requests also decreased the level of security for the paramilitary groups and increased the risk of tension between US and Colombian policy where those requests were not accepted. US support for Colombian security operations against the leftists helped the Colombian government by helping it to impose security in the countryside, while also increasing the security of the paramilitary groups against attacks by the leftists. On the other hand, such security assistance also raised the level of violence and increased the cost of the operation. US support to the Colombian military and police for operations against the paramilitary groups similarly raised the cost and level of violence, while hurting the property holdings and business operations of the paras. Finally, US funding sought was a key enabler of the demobilization rate, benefiting a number of the other teams (to the extent that the US Congress matched the request with approved funds). On the other hand, to the extent that the sought funding was indeed matched, it also increased the cost of US involvement.

Metrics and Inputs for the U.S. Congress

The score of the U.S. Congress, like that of the Colombian Congress, was largely constituency oriented. The score was helped to the extent that the Colombian peace process had the support of the US public. Conversely, the accord was hurt by various perceived problems, including the cost of US assistance, complaints by international

NGOs, perceptions that the accord was undermining US narcotics policy, perceptions that the US was involved in an illegitimate process.

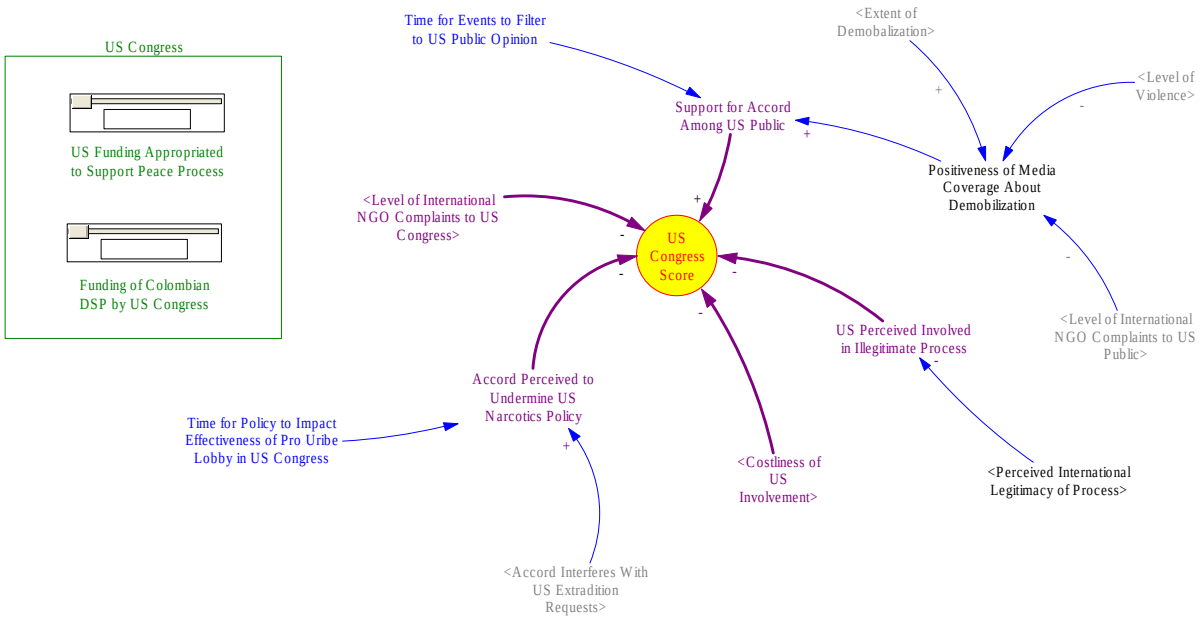

Figure 9 – Inputs, Metrics, and Structure – U.S. Congress

The inputs given to the US Congress team in the game centered on its budget authority. On one hand, the US Congress could appropriate part or all of the funding requested to support the peace process. On the other hand, it could appropriate all or part of the funding requested for the Colombian Democratic Security Policy. In both cases, its approval of funding increased the cost of the US involvement, and thus it had an incentive to use the promise of this funding to induce the other teams to take actions that would compensate for the cost by helping its score in other ways.

Metrics and Inputs for the International NGOs

As with the Colombian NGOs, the score of the international NGOs reflected a range of concerns tied to peace and demobilization and the fate of the paramilitary groups. The score of the international NGOs was bolstered by demobilization and hurt by violence. At the same time, the international NGOs also did better to the extent that the paras and narco paras had less security from legal action in Colombia, less security from extradition, and to the extent that the narco paras had less security in their property and business operations.

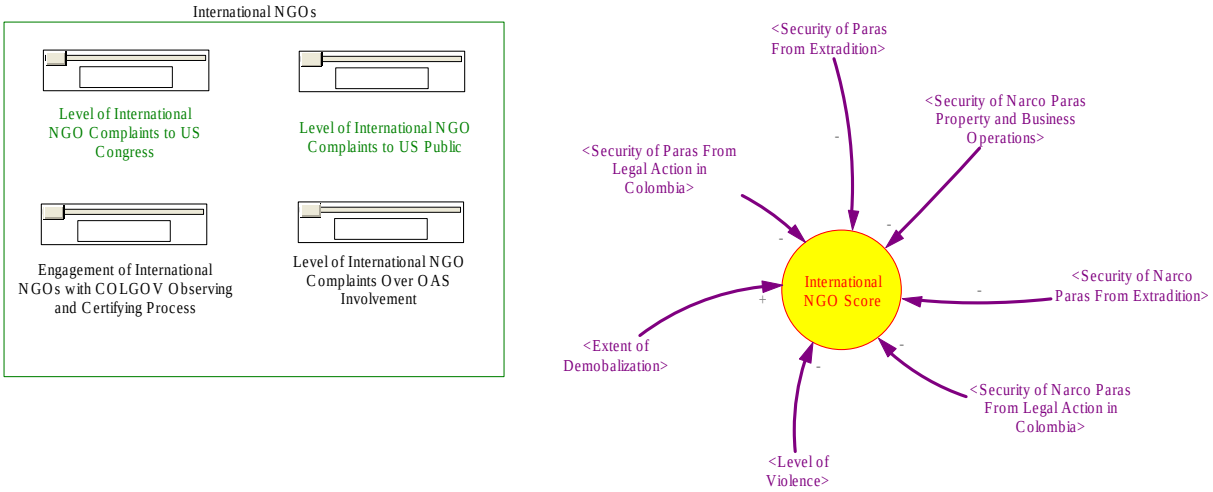

Figure 10 – Inputs, Metrics, and Structure – International NGOs

The key levers of the international NGOs involved their ability to certify the legitimacy of the process, or reciprocally, to complain. By complaining to the US Congress, for example, international NGOs could lower the score of the US Congress. By taking its arguments to the US public, it could reduce support for the process among that public, thus impacting the scores of both the US Congress and US public. By complaining about OAS involvement, the international NGOs could raise the level of controversy and thus damage the OAS score. On the other hand, the OAS could choose its level of engagement with the Colombian government in observing and certifying the process. This engagement directly contributed to the perceived international legitimacy of the process, thus helping the scores of the Colombian government and Colombian Congress, as well as that of the US Congress.

Metrics and Inputs for the Organization of American States

The score of the OAS in the game reflected a calculus that was somewhat different than that of the other players. On the one hand, the OAS did better to the degree it was perceived as contributing to demobilization and the legitimacy of the Colombian peace process. On the other hand, the OAS was hurt to the degree that it was perceived as involved in controversy.

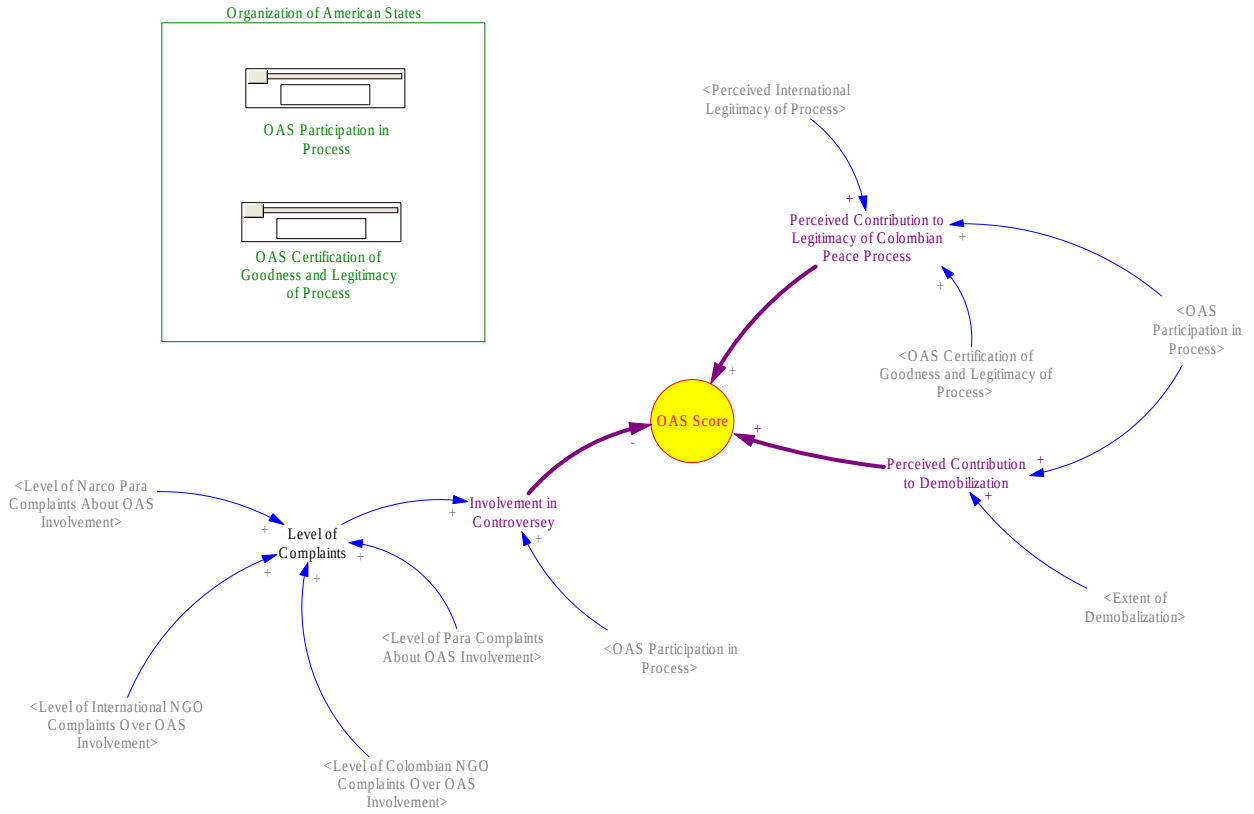

Figure 11 – Inputs, Metrics, and Structure – Organization of American States

The inputs controlled by the OAS team in the game were relatively straightforward. It could choose the level to which it certified the goodness and legitimacy of the process, and the degree to which it participated in it. OAS certification of the goodness and legitimacy of the process was directly tied to the perceived international legitimacy of the process. Thus, through this legitimacy factor, OAS certification impacted the score of the Colombian government, Colombian Congress, and US Congress. On the other hand, the OAS decision on its degree of participation in that process was tied to its own score in both positive and negative manners. To the degree to which demobilization was proceeding, OAS participation was a requisite for realizing a perceived contribution to demobilization. Similarly, to the extent to which the process was perceived as legitimate, its participation was a necessary element in its perceived contribution to that legitimacy. On the other hand, if other groups were complaining about the process, its participation hurt its score by involving it in that controversy. Thus, in deciding the optimal level of participation, the OAS had to decide to what degree the process itself was going to succeed, and was going to be controversial.

Metrics and Inputs for the European Union

The score of the European Union paralleled that of the OAS in that it was less directly tied to outcomes in Colombia, than in how those outcomes were filtered through its own constituencies. Thus, its score was bolstered by the extent to which its involvement satisfied its own leftist internationalist constituency, to the degree to which it increased its perceived relevance in Latin American politics, and to the degree to which it preserved or expanded future European business opportunities in Colombia.

Reciprocally, its score was hurt to the degree to which its involvement in peace talks hurt its ability to play a key role in future talks with Colombian leftist groups.

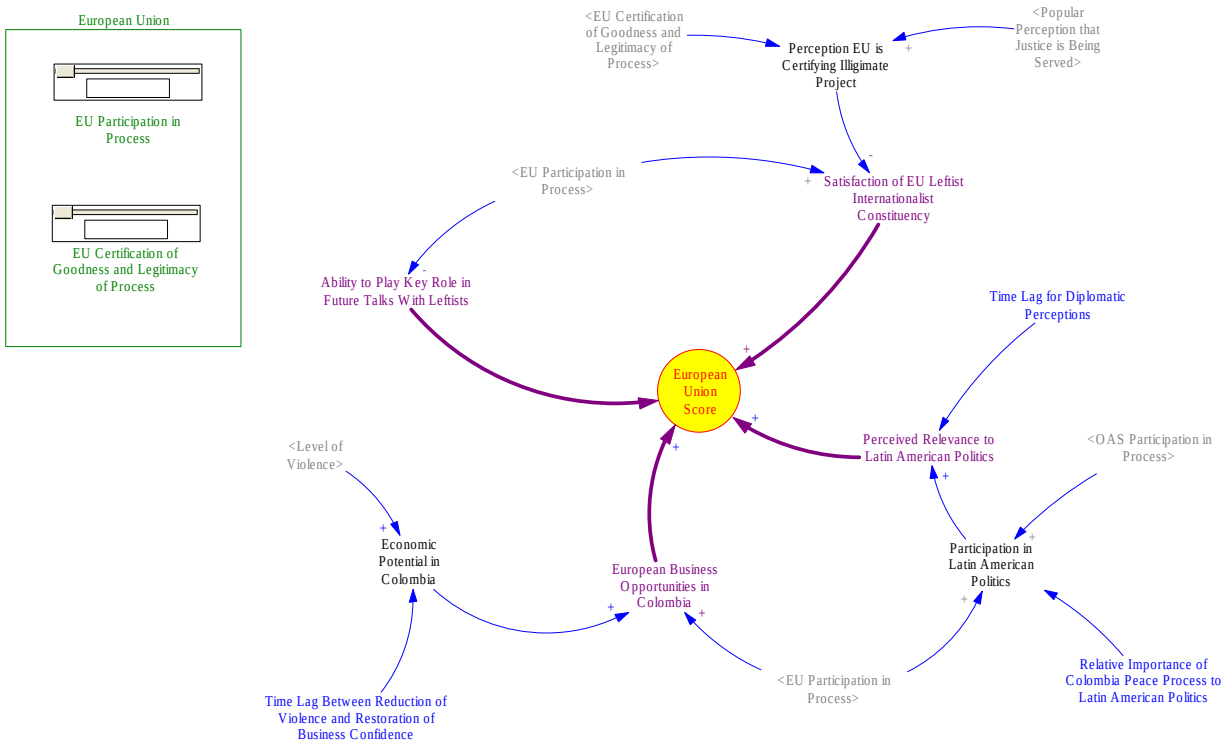

Figure 12 – Inputs, Metrics, and Structure – European Union

As with the OAS, the inputs controlled by the European Union team in the game were relatively straightforward. It could choose the level to which it certified the goodness and legitimacy of the process, as well as its level of participation in that process. On the one hand, certification of the goodness and legitimacy of the process contributed to the perceived international legitimacy of the process overall, thus impacting the score of the Colombian government, Colombian Congress, and US Congress. At the same time, the decision of the EU regarding its level of participation impacted its score by affecting future business opportunities, and by contributing to its perceived relevance to Latin American politics. On the other hand, its participation damaged its ability to play a key role in future talks with leftists in Colombia, and potentially dissatisfied leftist internationalist constituency, to the extent that that involvement coincided with perceptions that the EU was involved in an illegitimate process. For the EU team thus, its decision on the appropriate level of participation depended on how the process was perceived, and thus whether the benefits would be outweighed by the costs.

OUTCOMES AND LESSONS LEARNED

The game was well received by the participants. The process, as described, was accomplished within the proscribed time period without significant complications. Players were able to effectively understand the model and conduct meaningful bargaining within the allotted 15-minute intervals, and provide their inputs to the moderator. The moderator was able to incorporate the inputs of each team in front of

the group, run the model, and provide each of the teams with insights on their performance and key drivers. Teams demonstrated the ability to then use this feedback to adapt their performance in subsequent periods of play.

The success of the interactive system dynamics game on the paramilitary peace process demonstrates the promise of a new approach for the use of system dynamics and the software tools used to implement it in both teaching and policymaking contexts. While system dynamics is frequently used as an auxiliary tool for workshops and studies, the game demonstrated that a compelling learning event can be built around a system dynamics model. Indeed, the event demonstrated that the combination of the visual orientation of system dynamics and the gaming capabilities of a tool such as Vensim are an ideal combination for an analytical or learning event focusing on leveraging the inputs of a diverse array of participants, and understanding the range of dynamics of the interaction in systemic terms. The software allowed a relatively sophisticated representation of the key players and dynamics to be generated quickly and grasped by the players in the course of a relatively brief event. The diagnostic capabilities of Vensim™ enabled the moderator to link outcomes back to inputs in a sufficiently rapid and compelling fashion so as to allow outcomes from one period of play to meaningfully shape player inputs in the subsequent period. Moreover, the approach provided an interesting and relatively neutral context in which players could individually explore strategies of interest to them, and relate those strategies back to real world policy problems.

The quick-turnaround time and relatively low expense involved in the development of the game, the compressed time period, and the relative simplicity of the facility in which it was conducted is also instructive, because it suggests that the approach is both compelling and feasible for addressing an entire class of policy issues for which modeling and gaming was previously considered too expensive, too time consuming, or too impractical. The success of this game raises the prospect that, for virtually any important strategic decision involving the interaction between multiple players, an organization can leverage a combination of its own experts and stakeholders (and outsiders as appropriate), to explore the issue and build consensus on the associated risks and solutions in advance of actually taking the decision. The use of system dynamics as a “management flight simulator” is widely discussed in the literature. The present approach suggests that system dynamics has great promise for simultaneously training the entire “crew.” Practitioners of system dynamics have long understood the applicability of systems thinking to the problems and decisions of the modern era. The approach discussed in this paper represents a promising new approach that builds on the best elements of the methodology and tools of the discipline to demonstrate and realize that value with real policymakers.