

Games in Multiple Arenas, Foreign Intervention and Institutional Design on the Eve of the Rwandan Genocide

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Abstract of the paper

This paper studies the strategic behavior of four parties in the crucial years preceding the Rwandan genocide, namely 1990-1994. For that purpose a nested game is developed in which the autocratic regime plays a transition game with the domestic opposition in the principal arena and at the same time that regime is involved in a civil war game with a rebel movement. The change of preference orderings is studied when the civil war is introduced as a shock in the transition game. The fourth player, the international community interferes in the nested game as a provider of military and financial aid to the autocratic regime. The Nash equilibria of different games are studied with and without the interference of the international community and with and without human rights conditionality of donor aid to the autocratic regime. When players realize that the rules of the game prevent them from reaching their preferred outcome, they may redesign these rules. The elimination of the moderate Hutu opposition is studied as an example of institutional design. This elimination cleared the way for an even more innovating strategy, the genocide of the Tutsi minority.

Key words : nested games, foreign aid, civil war, Rwanda

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I) Introduction

In April 1994, the world community was shocked by the incredible atrocities committed during the Rwandan genocide. By then, Human rights activists, intelligence agencies and officials in Ministries of Foreign Affairs already knew that repression, political killings and mass murder were committed by the Habyarimana regime during the years that preceded the genocide. Detailed reports and articles have been written that document the atrocities committed before the April 1994. Some authors focus on Hutu extremist ideology as key to the explanation of the Rwandan genocide. As in other genocides, the use of ethnic ideology indeed is very important, but I believe the study of this ideology alone is not enough to explain the behavior of the different parties to the conflict. In this paper, I will take another perspective on the regime and try to explain the strategic behavior of the parties through an analysis of their interests. This aspect has been given less attention in the literature. I will look at the strategic behavior of the political leaders in the period before April 1994. I believe that the period 1990-1993 is of crucial importance to understand how the regime was able to develop and implement its plan to commit genocide.

Under which circumstances are dictators and autocratic governments able to implement their plans? I believe this is one of the most important questions because if we research these circumstances, then we can act to change the circumstances and thus change the behavior of political elites. Underlying this view is the belief that human beings do not act in an empty environment. They act under constraints and try to obtain the best result for given the constraints.

I will focus on the role of third party intervention in a civil war. I will develop a game-theoretic model to analyze the influence of foreign intervention on the strategies of the parties involved in the conflict.

Game theory assumes that players are rational. What is meant by rationality in game theory however, is entirely different from rational behavior in everyday parlance. There it means thoughtful, reflective, just and wise behavior. In game theory rational behavior means choosing the best means to gain a predetermined set of ends. As James Morrow puts it, it is an evaluation of the consistency of choices and not of the thought process.¹ It is an evaluation of the pursuit of goals and not of the morality of these goals.

Political economists are first of all interested in the choices that actors make from a set of available actions. Each action produces a certain outcome and each outcome gives a utility to the actor. Each actor can rank the outcomes from best to worst. This is an ordering of preferences. Rationality requires that orderings are complete and transitive.² Outcomes with a higher utility are preferred to outcomes with a lower utility. This reasoning means that political economists, from their disciplinary point of view, are not interested in the morality or immorality of goals. They analyze the implementation of goals, not the moral value of the goals.

This approach poses a personal problem to the author since the reader might think that I am not concerned with the immense immorality of genocide. Of course, no need to say that I am horrified by the brutal campaigns of killing that are at the core of each genocide. As a human being equipped with a strong appreciation for the value of each human being regardless of age, nationality, sex or other characteristics, I condemn these acts and the incitement to commit these acts in the strongest possible way. As a researcher however, I believe that moral disapproval will not stop genocide from happening and will also not help us to understand the processes that lead to genocide. I

¹ Morrow, J. Game theory for political scientists, Princeton University Press, 1994, p 17.

² Preferences are complete if $x > y$ or $y > x$ or both are equally preferred. Preferences are transitive if $x > y$ and $y > z$ implies $x > z$. These two assumptions are necessary for rationality.

think it is very important to analyze the political context in which genocides take place with a particular attention for the strategies used by elites in times of political crises. Although genocide studies is normally practiced by historians who are not used to work with formal models, many scholars of genocide consider these elite strategies as essential to explain genocide. Horowitz for example states that :

“The involvement of governments and elites in many genocides is a reminder that human actors make choices and decisions, and carry out actions which constitute, or lead to, genocide. Genocide is not an inevitable consequence of certain social conditions within a society”³.

Horowitz is not alone in this respect, most genocide scholars, I believe, would in fact agree that elite strategies are at the core of the genocide debate. In the writings of Leo Kuper, Alison Des Forges, Raoul Hillberg, or Helen Fein, the intentions, the strategies and the objectives of the regime that has organised a genocide occupy a central place. Genocide scholars agree and stress that genocide is a planned, intentional action. In the 20th century it was in the majority of cases organised by a regime or a state.

According to Rummel dictatorships are much more mortal for their citizens than democracies. That is because of the concentration of power, Rummel says. One of his well-known expressions in this regard is : “ power kills, absolute power kills absolutely”. In an interesting critique on Rummels’ explanation, M. Crain writes that the concentration of power does not explain when genocide (democide) occurs. According to Crain, we should look at the periods where a regime is about to lose power. Look at the moments where an elite is insecure, is scared to be replaced by another elite or another government.⁴ Gurr has gathered a lot of data on the position of minorities in the world.⁵ One of his important conclusions is that the probability of genocide to occur increases when a regime is put under both internal and external pressure.

³ Kuper, L., Theories of Genocide, ibidem, p.332

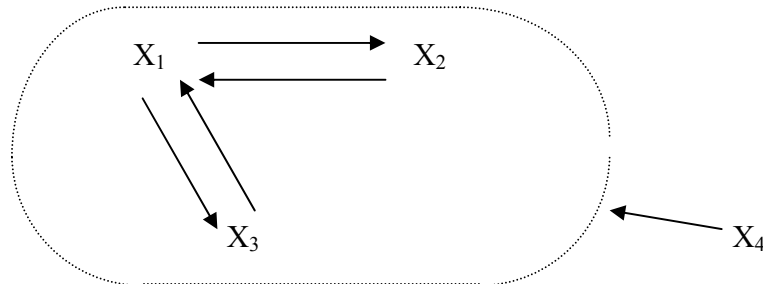
⁴ Krain, M, State-Sponsored Mass-Murder, the onset and severity of genocides and politicides, Journal of conflict resolution, volume 41, no 3, June 1997.

⁵ Gurr, T, Minorities at Risk project, Polity III dataset, University of Arizona.

When historians, genocide scholars and political scientist consider elite strategies essential to explain the behavior of a genocidal regime, an attempt to formalize these strategies may offer additional insight in the debate on the explanation and prevention of genocide.

In analyzing political situations, Tsebelis has come up with the concept of *nested games*.⁶ Tsebelis distinguishes between two kinds of nested games. The first are games in multiple arenas and the second is institutional design. In this paper, we will use both. Games in multiple arenas are games with *variable payoffs* in which the payoffs in the principle arena are influenced by the prevailing conditions in another arena. If an observer only looks at a game in one arena, it may appear that the player is choosing a sub optimal strategy. When however one takes the context into account, meaning the fact that the player is playing games in multiple arenas, the apparent sub optimal choice in one game is an optimal choice in the nested game. Tsebelis uses the term *institutional design* for players who are involved in a game about the *rules* of the game. Rules include all characteristics of a game except the payoffs. In game theory, players chose optimal strategies under constraints. These constraints are the rules (institutions) of the game. It has been argued that certain constraints produce certain outcomes. If such causal relationship between institutions and outcomes is established, then a player or a coalition of players may operate on the cause in order to modify its effect. At that stage, we are dealing with players who intentionally redesign institutions to arrive at other outcomes. In this paper, we apply this insight to the Rwandan situation.

⁶ Tsebelis, G, Nested games, rational choice in comparative politics, University of California Press, 1990, p52

Graph 1 : Graphic illustration of the conflict model developed in this paper

Where X_1 is the autocratic regime; X_2 is the domestic opposition; X_3 is the rebel group and X_4 is the international community.

In graph 1, I distinguish between a domestic game played by an autocratic regime and the domestic opposition and a civil war game played by a rebel army and the autocratic regime. The domestic game is the game in the principle arena. The autocratic regime is a player in the domestic as well as in the civil war game. This does not mean that the domestic opposition is not affected by the civil war game. On the contrary, since the domestic game is nested in a bigger game, involving the civil war game, the payoffs of the autocratic regime are affected by both the domestic and the civil war game. This variability in the payoffs influences the optimal strategies of the autocratic regime. Because of the strategic nature of the game, this variability also affects the optimal strategies of the domestic opposition. All payoffs of all players are also affected by an intervention of a fourth player, the international community. Last but not least, when players observe that the rules of the game exclude certain strategies that may yield better outcomes than actual strategies, they may start redesigning the game.

Graph1 essentially represents a *comparative statics* problem. Outside conditions change the payoffs of the actors and the equilibria of the two different games have to be calculated.

The paper is structured in the following way. In part two, I develop the game-theoretic model to analyze the strategic interaction in a game of multiple arenas. In the third part of the paper, I introduce institutional change as an innovative strategy. Afterwards, foreign aid is introduced. I summarize the theoretical results derived from the model in part five. Part six looks at Rwandan politics in the years 1990-1993. I describe the behavior of the Rwandan political elite vis-à-vis the international community. Part seven, discusses the relevance of the theoretical model to explain Rwandan politics. The last part of the paper concludes and puts forward issues important to genocide studies.

II) The games of domestic politics and civil war without foreign intervention

In the model, we consider a dictator that is involved in two games at the same time. He is playing the transition game with the domestic opposition and he is playing the civil war game with a rebel movement. We will first treat the games separately as if they had nothing to do with each other. In the next part, we will analyze the consequences of the fact that the dictator is playing both games at the same time. We model these conflicts as infinitely repeated games of complete information, but first study the ordering of the payoffs in the one-shot version of these games. We realize that human beings normally do not play infinite games, but the presence of two ethnic groups in one country and one state guarantees that these groups (and their respective elites) will be involved in game situations for a prolonged period of time. As we shall see, the genocide can be modeled as an innovative strategy to deal with the infinity, namely an effort to '*solve once and forever the ethnic problem of Rwanda*', to stop playing an infinite game. Complete information is assumed because we believe the alternative assumption of incomplete information is too restrictive. In such a small country, with few resources and few parties to the conflict, it makes sense to assume that players know each other's payoff functions, meaning complete information. Also, the approach puts the ability of the players to use innovative strategies in the center of attention and dealing with information asymmetries

between players might unnecessary complicate the model. We do not use cooperative game theory since in civil wars agreements do not bind players. As Habyarimana said on November 15th, 1992 :

" the agreements with the FPR are only a scrap of paper ".

2.1) A game of domestic politics

Assume a dictator facing a domestic opposition movement. Both players have two options in the game, they either cooperate with each other or do not cooperate. Only mutual cooperation leads to democratisation. Since the game represents the political choice between democratization and dictatorship we have called it the transition game.

TRANSITION GAME⁷

		DOMESTIC OPPOSITION	
		loyalty	resistance
DICTATOR	Democratization	B/2 ,B/2	0 , B
	Dictatorial rule	B ,0	B - p π π , R

⁷ The normal form representation Γ_N for a game with I players, specifies for each player I a set of strategies S_i (with $s_i \in S_i$) and a payoff function $u_i (s_1, \dots, s_i)$ giving the utility levels associated with the outcome arising from strategies (s_1, \dots, s_i) . Formally, we write $\Gamma_N = [I, \{S_i\}, \{u_i ()\}]$ (Mas-colell, 1995, p230)

The above transition game, involves two players : the dictator (also called the autocratic regime) and the domestic opposition. The strategy space of the dictator is $\{Di, Demo\}$ where Di is the continuation of the dictatorship and Demo is the transition to democracy. Democracy means the establishment of a multiparty system of government in this game. The strategy space of the domestic opposition is $\{Lo, Re\}$ where Lo is loyalty towards the autocrat and Re is resistance towards the autocrat. Loyalty is a cooperative strategy and resistance, a non-cooperative strategy. The choice of strategy will depend on the payoffs of the various actions.⁸

The payoffs to the dictator from democratization are $B/2$ when the opposition is loyal to the dictator and 0 when they resist the dictator. Democratization does not necessarily mean that the dictator loses all power, only that he has to share government power with the domestic opposition. We assume that the dictator and the domestic opposition get an equal share of the budget in the case of mutual cooperation. Since this is a complete information game, the players know each other's payoffs. This assumption will disappear later.

The payoffs to the dictator from autocracy are B when the domestic opposition is loyal to the dictator and $B - p_\pi \pi$ when they oppose the dictator. We consider B the budget available to the dictator to cover his personal consumption and $p_\pi \pi$ the cost of staying in power. This cost involves some benefits for the domestic opposition to buy their loyalty but is largely made up of expenditures for the repressive apparatus. When the opposition is loyal to the dictator, $p_\pi \pi$ is low. We assume that this amount is zero when the populace is loyal. Resistance drives up the cost of staying in office. In this case, the dictator has to offer the opposition more benefits and increase his repression in order to stay in power. His dictatorial payoff is $B - p_\pi \pi$.

⁸ Formally, $u_1(s_1, s_2) = [B/2 \mid (s_1, s_2) = (Demo, Lo)]$ or $[0 \mid (s_1, s_2) = (Demo, Re)]$ or $[B \mid (s_1, s_2) = (Di, Lo)]$ or $[B - p_\pi \pi \mid (s_1, s_2) = (Di, Re)]$; $u_2(s_1, s_2) = [B/2 \mid (s_1, s_2) = (Demo, Lo)]$ or $[B/2 \mid (s_1, s_2) = (Demo, Re)]$ or $[0 \mid (s_1, s_2) = (Di, Lo)]$ or $[R \mid (s_1, s_2) = (Di, Re)]$.

The payoffs to the domestic opposition from being loyal to the dictator are $B/2$ when the dictator democratizes and 0 when he does not. In the first case, the opposition gets half of the budget. In the second case they receive nothing (or a very small reward). Because of the large supply of loyalty, the price of loyalty is very low.

The payoffs to the domestic opposition from resisting the dictator are B when the dictator democratizes and R when he does not. In the first case, the opposition has taken over the entire government and does not have to share the budget with the former dictator. This is the nonviolent revolution. In the second case, the dictator had to spend more resources to maintain his power over the domestic opposition. The opposition receives a higher price and gets a payoff of R .⁹

How will the game be played ?

In one-shot games of complete information, the outcome of a game is determined by the ordering of the payoffs of the players. Let us look at this ordering more closely. We have assumed that a dictator wants to stay in power and that resistance decreases the payoffs of the dictator. This implies the following order of the payoffs

$$B > B - p_{\pi} \pi > B/2 > 0 \quad (1)$$

This is true under the condition that repression is cheaper than power sharing

$$p_{\pi} \pi < B/2 \quad (2)$$

The domestic opposition would like to be part of a transition government. They know that the part of the budget that would be at their disposal in a democratic polity, would be much larger than the benefits they get from being loyal or from resisting the dictator under autocratic rule. They also know that resistance pays, meaning that when they show

⁹ This game in its normal form representation is thus fully characterized in the form $\Gamma_N = [I, \{S_i\}, \{u_i(\cdot)\}]$ with $I=2$

that they are ‘expensive’, the dictator has to give them a larger part of the pie. This implies the following ordering of the payoffs

$$B > B/2 > R > 0 \quad (3)$$

This is true under the condition that the gain from resistance is smaller than the gain from power sharing

$$R < B/2 \quad (4)$$

The Nash equilibrium of this game¹⁰ is $(B - p_\pi \pi, R)$ where the dictator reaches his second highest outcome and the domestic opposition its third preferred outcome. The dictator reigns as an autocrat but has to pay a high price to the domestic opposition. This equilibrium (D_i, R_e) is an unsatisfactory outcome for both players; it is not Pareto optimal. In order to improve on this outcome, either the orderings of the pay-offs have to change or the rules of the game have to change.¹¹

2.2) The civil war game

This game models the behavior of the dictator involved in a conflict with a rebel movement. The game is also a one-shot game of complete information. The set up of the game is the same as in the game of transition, with a difference in the payoffs of mutual non-cooperation.

¹⁰ A strategy profile $s = (s_1, \dots, s_I)$ constitutes a Nash equilibrium of game $\Gamma_N = [I, \{S_i\}, \{u_i(\cdot)\}]$ if for every $i = 1, \dots, I$

$u_i(s_i, s_{-i}) > u_i(s_i', s_{-i})$ for all $s_i' \in S_i$ (Mas-Colell, 1995, p246)

¹¹ In Appendix 1, the repeated play version of the transition game is presented.

CIVIL WAR GAME

		REBEL MOVEMENT	
		peace	war
DICTATOR	peace	B/2 , B/2	0 , B
	war	B, 0	B-p _w W, M

The above civil war game involves two players: the dictator and the rebel movement. The strategy space of both players is identical; they can either opt for war or for peace.

The payoffs of the peace strategy for the dictator are $B/2$ when the rebel movement also chooses peace and 0 when it does not. $B/2$ is the equal part of the budget allocated to the dictator and the rebels in the event of mutual peace. 0 is the ‘suckers ‘ payoff to the dictator, he gets this lowest payoff when the rebel movement takes over the country and he does not fight. The payoffs of the war strategy to the dictator are B when the rebels do not fight and $B-p_wW$ when they do fight. We assume that the price of unilateral war for the dictator is very low (zero) and that p_wW is the cost of civil warfare to the dictator.

The payoffs of the peace strategy to the rebels are $B/2$ when the dictator also chooses peace and 0 when he does not. The first payoff is the part of the budget the rebels receive in the peace negotiations.

The payoffs of the war strategy for the rebels are B when the dictator does not fight and M when he does. The first is the budget, being the payoff of taking the country without fighting and the second is the payoff to the rebels of mutual warfare. This is not related to

the budget of the country, since the outcome of the war is undetermined. We only assume that by waging war, the rebels gain some benefit M .

How will the game be played ?

The outcome of the game depends entirely on the orderings of the payoffs. Different orderings are possible. I will discuss other orderings later on, but start with a likely ordering, namely

$$B > B/2 > B-p_w W > 0 \quad \text{for the dictator} \quad (7)$$

$$B > B/2 > M > 0 \quad \text{for the rebels} \quad (8)$$

This is the ordering of a prisoner's dilemma game. It is satisfied when we assume that fighting a civil war is more expensive than power sharing. The payoff a player can get in negotiations is most probably smaller than the payoff one would get if one wins the war without fighting, but the payoff from negotiations is most probably higher than the payoff of mutual warfare, which is often an expansive enterprise for both parties.

The conditions for the civil war game to be a prisoner's dilemma game are

$$p_w W > B/2 \quad \text{AND} \quad M < B/2 \quad (9)$$

The Nash equilibrium of this one-shot game is mutual warfare (war, war) with each party ending up with their third preferred outcome. Individual rationality forces the players into mutual warfare.¹²

¹² In Appendix 2, the repeated play version of the civil war game is presented.

2.3) Repeated nested game of transition and civil war

In the following part of the paper, we assume that the dictator is involved in the two games at the same time. He plays the nested game of civil war and transition. We consider now a repeated playing of the nested game.

Since the dictator is playing the two games at the same time, the payoff to the dictator of the one-shot nested game is a convex combination of the payoffs in the two arena games.¹³ We choose the linear combination because of its simplicity.

In algebraic terms $PO_d = k PO_{dtg} + (1-k) PO_{dcw}$

Where PO stands for payoff, the suffix d for dictator, tg for transition game, cw for civil war. k is a parameter in the [0,1] interval and indicates the weight of the transition game in the decisions of the dictator. (1-k) indicates the weight of the civil war in the decisions of the dictator.

The payoff to the dictator of an infinite repetition of the nested game is

$$\left(\frac{\delta}{1-\delta}\right)PO_d = k\left(\frac{\delta}{1-\delta}\right)PO_{dtg} + (1-k)\left(\frac{\delta^2}{1-\delta^2}\right)PO_{dcw} \quad (12)$$

where δ is the discount factor in the interval [0,1].¹⁴

A special characteristic of the nested game is that the civil war has a direct effect on the ordering of the payoffs of the transition game. The domestic opposition is considering the rebels as a challenger to the autocratic regime and increases its resistance against the regime. The supply of loyalty towards the dictator decreases and might reach a minimum level. In order to survive in office, the dictator has to spend more resources to loyalty and

¹³ The nested games concept is developed in Tsebelis, 1990.

repression. He doesn't want to do this since he needs his resources to fight the war (remember $p_w W > B/2$). When the cost of loyalty and repression increases to a level where $p_\pi \pi > B/2$, the ordering of the payoffs of the dictator in the transition game changes.¹⁵ The new ordering then becomes

$$B > B/2 > B - p_\pi \pi > 0$$

At that moment, the transition game becomes a repeated prisoner's dilemma and cooperation develops at a low discount rate of 0,66 (2/3). This means that the dictator is now involved in two prisoner's dilemma's. Mutual warfare was already more expensive than mutual peace and now autocratic rule becomes more expensive than democratisation because of the high level of resistance. The dictator thus faces a dilemma. He has to allocate a part of the budget to repress his domestic enemies and to buy off the loyalty of his domestic supporters, but he also has to finance the war. If the dictator fails to perform this behavior, he can be either toppled domestically or lose the war. This means that the dictator has to allocate part of his budget to finance the war and another part to secure his position as a dictator at home. He will minimize the cost to stay in power.

How will this nested game be played ?

This depends on the value of the parameters $p_w W$, $p_\pi \pi$, k and δ . We go back to the assumption that the rebels and the dictator interact every two periods and the dictator interacts every period with the domestic opposition. Let us assume, for a matter of simplification, that in the nested game $p_w W = p_\pi \pi = P$. One can make this assumption since we assumed that in the nested game both the cost of power and the cost of war are larger than $B/2$. How does the dictator weigh the two games ? In other words, which

¹⁴ The discount factor indicates the degree in which players value the future. The higher they value future payoffs, the higher the discount factor is.

¹⁵ We have introduced the war as a exogenous shock to the transition game, but one could also consider it as an endogenous development of the repeated transition game : if the dictator is never willing to cooperate with the domestic opposition, it is likely that at some point a rebellion may occur.

variables influence the value of k ? The dictator can either give more weight to one of the games, or give equal weight to both games.

With equal weight $k = \frac{1}{2}$, cooperation in the nested game will develop if

$$B < \left(\frac{1}{2}\right)\left(\frac{\delta}{1-\delta}\right)\left[P - \frac{B}{2}\right] + \left(\frac{1}{2}\right)\left(\frac{\delta^2}{1-\delta^2}\right)\left[P - \frac{B}{2}\right] \quad \Leftrightarrow$$

$$\frac{2B}{\left(P - \frac{B}{2}\right)} < \left(\frac{\delta}{1-\delta}\right) + \left(\frac{\delta^2}{1-\delta^2}\right) \quad (13)$$

Since we know that $P \in]B/2, B[$

if $P \rightarrow B/2$ then the left hand side of (13) $\rightarrow \infty$ and (13) cannot be satisfied

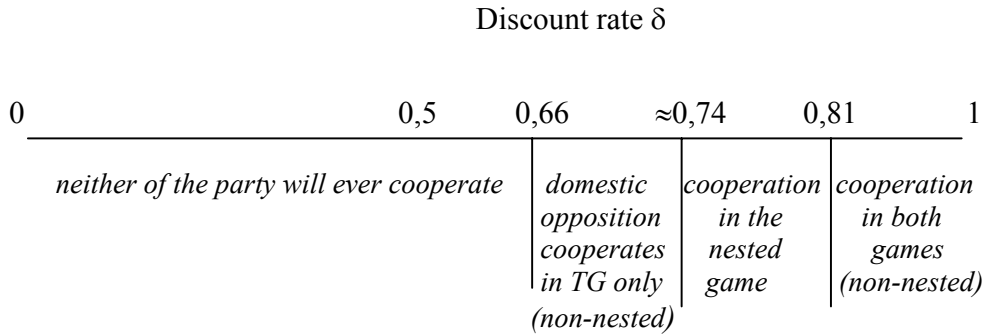
if $P \rightarrow B$ then the left hand side of (13) $\rightarrow 4$ and (13) is satisfied if $\delta > \approx 0,74$

(\approx is approximate and \rightarrow means approach)

Equation (13) holds if $\delta > 0.74$ and if we assume P is approaching his upper bound (B). This means that δ does not have to be as high as in the non nested version of the civil war game to get cooperation. The point here is that, when the transition game and the civil war are nested games, the dictator does not have to value the future as high as in the civil war game in order for him to cooperate, a reasonable discount rate (0,74 or higher) is enough for cooperation to develop in the nested game. When P , the cost of autocratic rule and civil war is lower than its upper bound, meaning P is in the $]B/2, B[$ interval, cooperation in the nested game demands a higher discount rate. This means that, for a given discount rate δ in the $]0,74; 0,81[$ interval it is easier for cooperation to occur when P is approaching its upper bound. In that case namely, the dictator is put with his back against the wall, he has nowhere to go and pushed towards cooperation. This is exactly

what may happen in prolonged civil wars : the longer they take, the more the cost of autocratic rule and war is increasing. In the long run, P will approach his upper bound.

Graph 2 : The development of cooperation at different levels of δ with $k = 1/2$.



It is easy to show that with unequal weight given to the transition game and the civil war, the minimal discount rate for cooperation in the nested game is higher than 0.74 when $k < 1/2$ and lower than 0.74 when $k > 1/2$. The more weight is given to the civil war, the higher the minimal discount rate necessary to achieve cooperation.

III) Eliminating the domestic political opposition as institutional design

In the nested game in which the players play in multiple arenas, cooperation may develop at a lower discount rate compared to the non-nested version of the game. ‘Cooperation’ however need not be a good thing. As Cohen (1994) puts it, “ *players may cooperate in a murder* “. Assume the orderings of the payoffs in (1) and (7) and assume $\delta < 0,81$, meaning the dictator never cooperates with the domestic opposition in the non nested game and does not value the future high enough to cooperate with the rebel movement in the non nested civil war game. When the dictator realizes that the linkage of both these games changes the structure of the game, the transition game becoming a prisoners’ dilemma, and when he realizes that cooperation in the nested game is a possible outcome

of this game, he may dislike this possibility. This is because he has experienced the benefits of autocratic rule. Being a dictator namely yielded him the (discounted) payoff $(B - p_\pi \pi)$ which was his second preferred outcome in the transition game. The shock of the civil war changed the payoff ordering in the transition game and made cooperation in the nested game more likely than before the start of the civil war. Cooperation in this nested game namely occurs when $\delta > 0,74$ and when P (the cost of domestic repression and war) approaches its upper bound B . Cooperation in the nested game will yield the dictator the discounted payoff

$$\frac{1}{2} \left(\frac{\delta}{1-\delta} \right) \frac{B}{2} + \frac{1}{2} \left(\frac{\delta^2}{1-\delta^2} \right) \frac{B}{2}$$

Since autocratic rule and civil war became very expensive, this latter payoff is the second preferred outcome of the dictator in the nested game. At this point, the dictator will compare this payoff with possible other payoffs. The nearest possible payoff he can compare with, is

$$\frac{1}{2} \left(\frac{\delta}{1-\delta} \right) (B-P) + \frac{1}{2} \left(\frac{\delta^2}{1-\delta^2} \right) (B-P)$$

with P the cost of autocratic rule and war. As we have seen, $B/2 > B-P$ is only satisfied when repression and war is more expensive than power sharing. The dictator may realize that he can attain a better payoff (higher than $B/2$) when he could reduce the cost of repression and war. In the nested game, of course, he cannot achieve this. He has to play games in multiple arenas. It is namely the joint cost of domestic repression and civil war that makes cooperation in the nested game unavoidable. If only he would face just one enemy, these costs could be reduced.¹⁶ At that point, the dictator may want to change the rules of the game, more specifically, he may want to get rid of the multiple arena game and reduce the game to one arena. As we have said in the beginning of the paper,

institutional design may occur when players are dissatisfied with the (potential) outcomes of the game they are playing. When these players see a casual relationship between the outcomes of the game and the rules of the game, they may undertake efforts to change these rules. Institutional change may involve one or more of the following : (1) a change in the set of players, (2) a change in permissible moves, (3) a change in the sequence of play, (4) a change in available information. One particular effort, an example on institutional change (1), is the removal of a player from the game. If the game of transition and civil war is played by only two in stead of three players, the nested element of the game disappears and cooperation becomes again less likely.

Since it would be very unlikely to get rid of the rebel movement, the dictator will focus on the domestic opposition. One possible strategy in the course of institutional design is the splitting of the domestic opposition in two groups. One group joining the dictator and one group joining the rebel movement. If the dictator can accomplish this, he has redesigned the three player game with variable payoffs in a two player game. It is this form of institutional design that we will study in the Rwandan case. In Rwanda, the elimination of the moderate Hutu opposition will prove to have exactly this effect : blowing up the nested game and reduce it two a two player game.

¹⁶ In the next section, we will see that military and foreign aid will help the dictator to reduce these costs. It is not unlikely that dictators can count on this kind of foreign assistance to stay in power, even when large scale human rights abuses are evident.

IV) The introduction of foreign aid¹⁷

4.1) No human rights conditionality

Linking the two games, as we just did is equivalent to the introduction of a shock in the transition game. The civil war changes the preference ordering of the dictator in the transition game and cooperation may occur.

Foreign aid is introduced in the nested game as a unilateral decision of the donor community. This community is not involved in a game with the dictator, but only decides to give aid or not to give aid. If the donors want to, they can observe the human rights record of the dictator and condition their aid.¹⁸

Foreign aid is considered as an extension of the budget of the dictator which allows him to spend more. Foreign aid, and especially direct aid without human rights conditionality will enlarge the budget of the regime and can be considered as a relaxation of the budget constraint the dictator is facing. Especially in times of war and strong internal opposition, the dictator is not able to increase taxes and must rely on foreign aid to pay for the war and the internal repression. This means that, when aid is provided, the dictator is able to stay in power domestically and also able to continue fighting the war. In terms of our transition game, this means that the war does not change the initial orderings of the payoffs. Let FA_n be foreign aid without human rights conditionality

$$B + FA_n > B + FA_n - P > (B + FA_n)/2 > 0 \quad (14)$$

This expression holds if $P < (B + FA_n)/2$

¹⁷ Under ‘foreign aid’ we understand financial contributions by the donor community. Military aid can be incorporated in the model by its effect on the parameter P . Since P is part of the payoff to the dictator of mutual warfare, military aid helps the dictator to control or maintain his costs of war and thus make the war option relatively more attractive.

¹⁸ A possible extension of this approach is exactly a game between the dictator and the donor community where the firm has an incentive to lie about his human rights record in order to reap the benefits of foreign aid without actually sharing power.

Because of the extension of the budget of the dictator, foreign aid enables him to stay in power domestically. Because of the aid, the cost of power is allowed to increase with an amount $FA_n/2$ before the orderings of the payoffs change. We assume here that these costs do not reach this threshold. This is the likely when, as a consequence of an exogenous increase in the budget an increase in the production of repression and loyalty is observed. This ordering of the payoffs is therefore the same as in equation (1). This means that, although the dictator is playing a nested game, the civil war does not change the ordering of the payoffs of the dictator in the transition game. If the transition game with foreign aid (no human rights conditionality) is played repeatedly, no cooperation between the dictator and the domestic opposition will develop and the dictator always plays the non-cooperative strategy. With FA_n , autocratic rule remains the dominant strategy in the transition game.

However, because of the foreign aid, the orderings of the payoffs of the dictator in the civil war game change, making the civil war no longer a prisoner's dilemma for the same reasons as stated above. Since the dictator is able to finance the war, he has no incentive anymore to play a cooperative strategy, not even in a repeated play.

The result of the nested game with foreign aid without human right conditionality is that the dictator will choose autocratic rule and war as they are his dominant strategies in the nested game.

4.2) With human rights conditionality

In this case, foreign aid is only provided if the dictator democratizes (meaning chooses democratization in the transition game).¹⁹ The ordering of the payoffs to the dictator is then the following. Two orderings are possible now depending on the amount of foreign aid relative to B. In Appendix 3, we present the case of a small amount of foreign aid. If the donors provide a large amount of foreign aid, the preference ordering becomes :

$$(B + FA_{hrc})/2 > B > B - P > 0 \quad (15)$$

this condition holds if $FA_{hrc} > B$, meaning the donors provide an amount of aid that is larger than the budget the dictator is able to acquire through taxation. Since the human rights concerns of the donor community also influence the ordering of the payoffs of the domestic opposition, their ordering becomes

$$(B + FA_{hrc})/2 > B > R > 0$$

If these conditions hold, the transition game has become a Game of Assurance, where mutual cooperation (peace) is a Nash equilibrium and is also the Pareto optimal outcome. Under these conditions (large amounts of foreign aid, conditional on human rights), foreign aid also turns the civil war into an Assurance game.

V) Results from the theoretical model

* In the delinked (=non-nested) version of the transition game, autocratic rule is the dominant strategy of the dictator. He will never cooperate with the domestic opposition.

* In the delinked (=non-nested) version of the civil war game, cooperation only develops if the dictator values the future very highly.

* In the nested version of the game the civil war is introduced as a shock in the transition game. This changes the preference ordering of the dictator. The game becomes a prisoner's dilemma and cooperation in the transition game develops at a fairly low discount rate of 0,66.

* In the nested game, the dictator is involved in two games at the same time, which facilitates cooperation in the civil war game. Depending on the value of k , cooperation in the civil war game develops at a lower discount rate than in the non-nested version of the

¹⁹ We assume here that democratization is equal to the respect for human rights.

civil war game. The more weight the dictator attaches to the civil war game (lower k) the more difficult it becomes for cooperation to develop. (higher discount rate needed).

* When the parties to the conflict realize that the rules of the game prevent them from attaining their preferred outcome, they consider changing these rules. In that case they stop playing a nested game with variable pay-offs and switch to a nested game called ‘*institutional design*’. In such a game, players try to change the institutional framework in which they play games. Reducing the number of parties to the conflict from three to two is an example of institutional design.

*Military aid may help the dictator to reduce the costs of war and thus make the war strategy relatively more attractive. Foreign aid in its usual form, is considered as a relaxation of the budget constraint of the dictator. Without human rights conditionality, foreign aid makes autocratic rule and war the dominant strategies for the dictator in the nested game. He will never cooperate. There is no need for the dictator to redesign the rules of the game.

* Foreign aid with human rights conditionality changes the orderings of the payoff of the dictator. The game becomes an assurance game with large amounts of FA and a prisoner’s dilemma with small amounts of FA. In the latter case the nested game is similar to the game without foreign aid with the difference that FA makes cooperation more attractive.

VI) Foreign intervention and politics in Rwanda from 1990 to 1993

6.1) Military intervention and domestic events 1990-1991

When the rebels started their offensive on October 1, 1990, the regime reacted in three ways :

(1) It asked the French President, the Belgian King and the Zairian Dictator for military assistance. The Rwandan army of 5,200 soldiers was no match for the well-trained rebel group. 670 French troops supported the Rwandan army (FAR) on the battlefield . French support was unconditional. They supplied the regime with large quantities of arms, they guarded the airport, flew helicopters, secured radio transmissions and helped the FAR in the interrogation of suspects.²⁰ Belgium sent 500 paratroopers and decided to speed up delivery of ammunition to the regime. Mobutu sent 500 troops of his well-trained Presidential Guard to help out his friend Habyarimana. Officially, Belgian and French troops did not engage in combat with the rebels. For the Belgian troops, this is highly likely since they were withdrawn after a month. The engagement of French troops in direct combat activities is on record, at least for later periods of the war. Taking care of the logistics of the Rwandan army, the French troops reinforced its combat power.²¹ The Zairean troops engaged in direct combat action against the rebels as soon as they arrived in Rwanda.

(2) The regime imprisoned 8,000 to 10,000 Rwandan civilians and tortured an unknown number of them, after a staged ‘attack’ on Kigali. The victims of this action were not only Tutsis living in the capital, but businessmen, intellectuals, journalists and opponents of the regime. People who were disliked by the regime and could be repressed. After pressures from the diplomatic community, they were released.²² This process lasted till April 1991.

²⁰ Prunier, G. History of a genocide, translated from the French version, p.129-141.

²¹ Adelman, H. and Shurke, A., The International Response to Conflict and Genocide, Lessons from the Rwandan Experience, March 1996, part 2, p.22.

²² Adelman, H and Shurke, A, *ibidem*, p 31.

(3) The regime launched its first mass murder in a village in Kibilira, far from the front, killing 350 Rwandan Tutsi. This massacre is documented in a report by four human rights organisations. The massacre was directed by the local authorities, especially the mayor and the under-prefect. They gathered the villagers and told them that the Tutsi were coming to kill them. They used the false rumor that a well-known Hutu from the area had been killed, to incite the peasants to kill the Tutsi. The killings lasted from October 11, 1990, at 3.00 pm till October 13, at noon. 550 houses were burnt, cattle were killed, and household materials were destroyed. Diplomats and other people pressed the president to stop the attacks on October 12.

The Rwandan army succeeded in killing the rebel commander Fred Rwigyema. This fact, together with the help of the foreign military assistance to the FAR was detrimental to the rebels' offensive. The offensive lost momentum and the FAR was getting its act together. The rebels were pushed back into Uganda and it seemed the war was over by the end of October. At the same time, a mission by three Belgian ministers resulted in a first cease-fire agreement.

6.2) Efforts by the international community and its domestic effect from 1991 to 1993

In June 1991, the first meeting between the Rwandan regime and the rebels took place under the auspices of the Organisation for African Unity. It had no result. On November 17, 1991 ten thousand people demonstrated for democratization. A week later twenty thousand demonstrators supported the regime. In February 1992, Human Rights Watch published a report on Rwanda and the diplomatic community together with the NGO's urged president Habyarimana to start the process of democratization. That same month five civilians were taken custody and tortured in Kigali. They were subsequently released after protest by human rights organisations. In March 1992, after another massacre in Bugesera and after strong pressure by the international community, president Habyarimana agreed to install a multi-party transitional government comprising his party (MRND) and domestic opposition parties. The new government took office in early April 1992. In May 1992, Amnesty International published a report on Rwanda. In early June

1992, the rebels and the new Rwandan government agreed to start peace negotiations in Arusha. These negotiations ran from August 1992 till January 1993, and were marked by a strong international presence.

In March 1993, after a new series of massacres, four human rights organisations published a joint report on human rights violations in Rwanda and accused the president and his entourage of direct involvement in the massacres. Habyarimana was internationally condemned after the publication of his report. Belgium recalled its ambassador and threatened to review its development aid to Rwanda. Several authors mention that after this the violence used against civilians decreased.

6.3) Donor aid, export earnings and war

It is no surprise that wars are expensive, especially for a regime that has only two major sources of funds. The first was the tax on the export of coffee, tea and tin. The second was international donor aid (also called direct foreign assistance). In the late eighties, the first source of funds dried up. The price of coffee on the international market dropped sharply, depriving the regime of its major source of income. The income from the export of tin had already dropped to zero in the mid-eighties when the tin mines closed. Income from export of tea accounted for about 10% of export earnings in the late eighties and rose to 30% in the early nineties. Since tea is grown on large scale plantations, tea production suffered from the war. At the end of the eighties, the Rwandan regime faced a serious earnings problem.²³ The effects of the war on production worsened the problem.

This left the regime only the second source of funds. The international community had formed good impression of the Habyarimana regime before the war. World Bank reports on this matter said that the economy was well managed, that the regime built roads, invested in the health and educational sector and addressed the poverty problem of the

²³ As I mentioned in the beginning, I am focussing on the political elite in this paper. This means that here, I am not considering the effects the drop of the coffee prices had on the peasants. For an analysis of the coffee policy of the regime, we refer to Verwimp, Ph. (2003), the political economy of coffee, dictatorship and genocide, *European Journal of Political Economy*, vol 19 p.161-181.

peasants. Human rights records were not taken into consideration by the World Bank to judge the policy of a regime.²⁴ The World Bank and IMF were willing to help a well-managed country to overcome the economic crisis it was hit by. The same is true for bilateral aid to Rwanda. The major donor countries, Belgium, France, USA, Canada and Switzerland increased their bilateral aide substantially at the turn of the decade and continued the aid throughout the civil war. Some of these countries threatened to withdraw their aid when reports on mass murder of the civilian population were published, but this threat never materialized.²⁵ Direct foreign assistance to Rwanda increased from 242 million dollars in 1989 to 375 million dollars in 1991 and was maintained at that level until 1993. This is an increase of 60% over a period of two years. Belgium, Rwanda's most important donor before the genocide, increased its assistance from 1,2 billion BF in 1989 to 1,9 billion in 1991, to decrease it again to 1,2 million in 1993. Part of that aid was tied to purchases in Belgium and part was aid to the budget.

It may be difficult to prove that the Rwandan regime funded her wartime expenditures with funds from foreign assistance. However, we can consider the increase in expenditures by the Ministry of Defense from 1989 to 1992 as a strong indication of this. These expenditures increased from 8 million Rwandan Francs in 1989 to 13 million RF in 1991. The number of soldiers increased from 5,200 in 1990 to more than 40,000 in 1993. The budget deficit increased from 21 billion RF in 1990 to 41 billion RF in 1993 (350 million dollars). It was the international community that financed this budgetary deficit.²⁶ We do not have to prove that a specific budget donated by a specific country was used to pay soldiers or to buy arms. The Rwandan regime considered all available resources as one common pool. Moreover, if donors directly fund one specific project or sector, this means that the regime does not have to allocate money to that project or sector, so resources are set free for other purposes.

²⁴ Uvin, P., Development, aide et conflit, Reflections a partir du cas du Rwanda, United Nations University, World Institute for Development Economics Research, 1997, p. 14-15

²⁵ Adelman, H and Shurke, A, *ibidem*, p.31

²⁶ I am not going into detail on the specific financial mechanism, called fungibility.

Human Rights Watch says it has evidence of several shipments of arms to Rwanda. France delivered arms to Rwanda to the value of 6 million dollars even during the genocide²⁷. Next to general financial support and direct military support, some donors also gave military training to Rwandan officers in the military academies of the donor country. This was the case for both Belgium and France. This will prove later detrimental to the level of alert of Belgian officers engaged in the UN peace-keeping mission in Rwanda. The Belgian officers knew that some of their Rwandan ‘colleagues’ were former students of their own academy. They also knew that Belgium had an agreement of technical cooperation with the Rwandan army. Consequently, Belgian officers trusted the Rwandan army mistakenly.

6.4) Eliminating the moderate Hutu opposition

In the course of 1993 the Habyrimana regime undertook many efforts to split the moderate Hutu opposition in a pro-regime and a pro-FPR fraction. Evidence of this is found in several publications. Desforges for example writes that alliances with the newly established parties who opposed him were crucial to Habyarimana’s future (p.112).²⁸ The president managed to split the two most important opposition parties the MDR and the PL in a Hutu Power fraction and a anti-Habyarimana fraction. Hutu Power adherents saw Hutu who did not agree with the radical point of view as pro-Tutsi. Desforges sees the MDR and PL politicians as real players in the game (p.139):

“ After months of effort, Habyarimana had achieved his objective of splitting two of the parties that opposed him. The politicians immediately responsible for the rifts were hardly naïve pawns in the game. They made their choices knowingly, based as much on calculations of personal interest as on their supposedly more principled opposition to the FPR. Some members of the MDR would try to repair the rift in their ranks in December, but without succes ”

Habyarimana’s moves to split the domestic opposition were aided by the war conduct of the FPR : as the rebels launched a major attack on February 8th, 1993, members of the

²⁷ Human Rights Watch/Arms Project, 1994

²⁸ A.Desforges, Leave none to tell the Story, Human Rights Watch, 1999, p.111-116 and 137-140

domestic opposition doubted the will of the FPR to solve the conflict by negotiations.²⁹ At the same time, the president was criticized by CDR hardliners to compromise too much in peace negotiations with the FPR.

The major consequence of this elimination was that the ongoing crisis between several political groups in society was now turned into a pure Hutu vs Tutsi conflict. This result was intended by the extremists since they had labeled the Tutsi minority inside the country as ‘accomplices’ of the enemy throughout the civil war. They wanted to achieve a united Hutu front against the Tutsi enemy. The regime stressed that this was not only the FPR but also the enemy ‘from within’.³⁰ Desforges puts it as follows (p.139):

“ With the consolidation of Hutu Power, party allegiances faded before the imperative of ethnic solidarity : political life was reorganized around the two opposing poles of Hutu and Tutsi. Hutu Power was the coalition that Habyarimana needed, but it was not yet his for sure. In his speech, Karamira had criticized the president, reiterating the CDR stand of the previous March that Habyarimana had conceded too much to the RPF. To take leadership of the Power movement, Habyarimana would have to carry through to its logical conclusion the position he had advocated since 1990. He would have to stand up to the RPF and rid the country of their ‘accomplices’ “.

VII) Foreign intervention in civil war as an application of a nested game.

Can we explain the effects of foreign intervention on Rwandan politics with the theoretical model ? I do not claim that we can explain the entire development of the Rwandan genocide with a game-theoretic model. The Rwandan genocide is the result of the combined presence of political manipulation, racist ideology, monopoly of power, peasant behavior, culture of impunity and failed peace agreements. A theoretical model, I believe, can help us to look carefully at some of the most important elements of this genocidal cocktail. As stated in the beginning, my concern in this paper is not to explain the role of racist ideology in Rwandan society nor to discuss the situation of the Rwandan peasants. These factors are certainly important, but in my opinion they alone cannot

²⁹ See G.Prunier, *The Rwanda crisis, History of a Genocide*, 1995, p.174-186

³⁰ I refer especially to the pages 64-86 in A.Desforges book on the genocide.for further discussion of this topic.

explain the occurrence of genocide. For genocide to occur one has to have a political elite that organizes this genocide. In that respect it is important to research the circumstances that made it possible for this elite to launch and continue the implementation of its genocidal plan. In part seven of this paper, I will focus on the explanatory power of the model I discussed previously. In order for the model to have explanatory value, the following elements should be established:

- (a) Strategic interaction between the Habyarimana regime, the domestic opposition, the rebels, and the international community was essential to the course of events ;
- (b) Military assistance influenced the outcome of the war ;
- (c) The donor community could use foreign assistance as an instrument of pressure ;
- (d) Protest inside Rwanda rose in times of war and the domestic opposition felt reassured by the involvement of the international community;
- (e) The Habyarimana regime did not value the future highly, but the minimal discount rate to achieve cooperation was within reach;
- (f) The regime, intentionally, eliminated the domestic Hutu opposition and as such created the necessary condition for genocide.

(a) Game theory assumes that players are rational, meaning that they choose the strategy with the highest expected payoff. Since this payoff depends on the choice of strategies by both players, as demonstrated in the theoretical part of the paper, players will interact strategically. They will choose strategies taken the reaction of the other player into account. I will now try to demonstrate that the regime leaders, especially president

Habyarimana, were rational and strategic players in Rwandan politics. Since this point is very important, I will give it more attention than the other elements :

(a.1) In the summer of 1992, a member of the MRND, Christophe Mfizi, published an open letter to the president to explain his resignation from the party. Mfizi wrote that a group called ‘the Zero Network’ has penetrated the highest levels of society : in politics, in business, in the military, in religion.

*“This group considers the country as an enterprise where it is legitimate to get out as much profit as possible....It is this group that has incited the ethnic tensions to cover up their own interests...”*³¹

We also know that the family of the president and especially the family of his wife (called the Akazu) held key positions in the National Bank, The Commercial Bank of Rwanda and the Continental African Bank. Apart from their control of official resources, the Akazu was also very active in clandestine enterprises. The ex-governor of the National Bank, Jean-Berchmans Birara has declared that the president and his clan earned a fortune by organising drug traffic from Guatemala via Abijan and Kigali to France. The transport was carried out in the president’s own plane.³²

(a.2) At the moment of the rebel attack in the north of Rwanda, president Habyarimana was in New York attending a UN meeting. This illustrates that the rebels were also strategic players. Habyarimana immediately called the famous ‘cellule africaine’ resorting directly in the office of the French president. Before flying back to Kigali, he stopped over in Brussels where he asked the help of the Belgian King and the Belgian Government. G. Prunier wrote that Habyarimana staged the attack on Kigali on the night of October 4 and 5, 1990 to convince France to send more troops than promised. It had the desired effect.³³

(a.3) Massacres of Tutsi civilians or attacks on opponents of the regime took place immediately after a military offensive by the rebels or advancements in the peace talks. This can be derived from the chronology of events . It is documented in the International Response to Conflict and Genocide study.³⁴ At the time several interpretations were given to this simultaneity: some analysts read the killings as a political negotiation tactic, others saw the violence as an attempt to derail the entire peace process; my own interpretation is that it was an attempt to blame the rebels for the massacres in the eye of

³¹ Mfizi, C., Réseau Zéro, lettre ouverte a Monsieur le Président du MRND, Editions Uruhimi, Kigali, Juilluit-Aout 1992, p4 and 5.

³² Vidal, K, Stukken van de Waarheid. De Rwandese Genocide en de Belgische Politiek, Antwerpen, 1998, p .23-24.

³³ Prunier, G., ibidem, p 129

the international community and to increase the cost of war for the rebels. You could also see these local massacres as test cases; the regime testing the international community for its reaction.

(a.4) In the spring of 1992, the Belgian Ambassador in Rwanda, Johan Swinnen, transmitted several documents by telex and fax to the Belgian foreign minister. In these documents the Ambassador communicated information he had received from a top official inside the regime. The first document, transmitted March 12, 1992, had four important elements in it : (1) it cited the names of eight political and military leaders charged by the president to organize terror and mass murder in the country. (2) It said the president had asked the group to slow down the actions because he thinks the foreigners may have uncovered the plan. (3) It said the president had asked the group to study another method of killing the leaders of the MDR and the PL (4) It said that everything that was told to the diplomats is nonsense. The second document, transmitted March 13, 1992, describes a conversation with the informant. The third document, transmitted March 27, 1992, was labeled “a pamphlet“ by the Ambassador. It confirmed the names in the first document and described the task of the group of eight :

“ to organize the extermination of the Tutsi of Rwanda, in order to finally solve, in their own way, the ethnic problem of Rwanda and to destroy the internal Hutu opposition”.

This document also describes the military and paramilitary groups that executed the massacre in Bugesera in the beginning of March.³⁵

(a.5) There are at least four (but surely many more) occasions that prove the effect, at least temporary, of efficient international interventions on the behavior of the political elite. (1) The release of prisoners after diplomatic protest (2) The temporary stop to violence after the March 1993 protest by the international community (3) The dismissal of Léon Mugesera from his official positions after international protest concerning Mugeseras’ racist speech inciting the Hutu to kill the Tutsi on November 22, 1992. (4)

³⁴ Adelman, H en Shurke, A., *ibidem*, p. 33

³⁵ My translation as close as possible to the French text of the telex and fax.

The temporary stop to the killings in Rwanda during a visit of an international commission of human rights investigators in January 1993.

(b) Here, I refer to the Human Rights Arms Project which gave a detailed description of the military strength of both the Rwandan army and the rebels. Most authors agree on the following elements. The rebels were well-trained soldiers. Numbering 3,000 to 5,000 they received their training serving in Museveni's army and were supported by him. They captured some heavy weapons from the Rwandan army. They were committed to defeating the Rwandan army. That army consisted originally of 5,200 soldiers. They were no match for the rebel forces at the start of the war. The military and financial support by France, Belgium and Zaire allowed the FAR to increase its size (it provided time) and to increase its combat power (France provided training and logistics). Weapons were delivered by France, South Africa, Egypt and the US. On the involvement of France, I want to cite three authors :

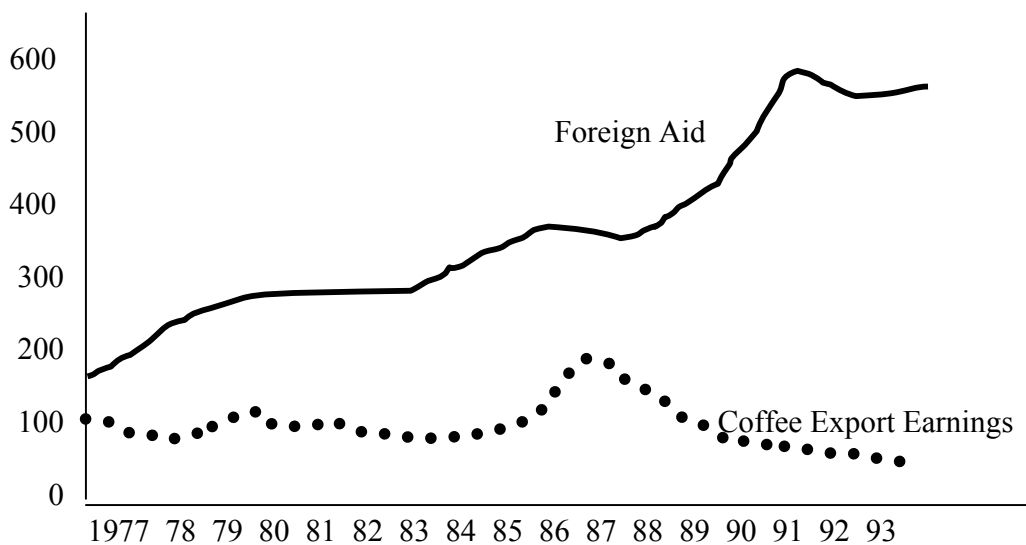
G.Prunier (p. 135) “ *Paris se retrouve ainsi en train de soutenir une dictature malade dans un petit pays éloigné, qui ne produit que des bananes et une récolte de café en plein déclin, sans même demander de réformes politiques en échange de son soutien. Cet engagement aveugle devait avoir de conséquences catastrophiques parce que, à mesure que la situation se durcissait, le gouvernement Rwandais, a pu croire que, quoi qu’il fasse, il pourrait toujours compter sur les Français. Et rien ne le démentait.* ”

Adelman and Shurke (p 23) : “*The result was a dual policy that supported negotiations but simultaneously built up the Rwandan armed forces and embraced the regime politically. The policy helped to move negotiations forward at the inter-state level, while at the same time provided political space and resources for the regime to consolidate, and – indirectly – for the Hutu extremist fringe to develop.*”

(c) In my model, human rights conditionality of aid policy effectively changes the behavior of the Rwandan political elite from non-cooperative to cooperative. We know that the donor community did not condition its aid on the human rights record of the Rwandan regime. They used only words to put pressure on the regime. It is on record that the regime stopped using violence against civilians immediately after threats from the donor community. Because of pressure, Habyarimana decided to form a government on a multi-party basis. However, this cooperative behavior was only temporary. The president

waited to see if the donors would really cut off their aid. Since they did not do this, repression could resume. In the model this means that the preference ordering of the regime never really changed. Since HRC was not applied, the regime preferred not to cooperate with the domestic opposition and stayed with its autocratic strategy. In order to show the importance of foreign aid, we present a graph of foreign aid together with the earnings of the coffee export. The latter representing 60 to 70 percent of all export earnings. As one can see on the graph, foreign aid was extremely important for the regime. From the seventies till the mid-eighties, foreign aid was roughly equally important as the earnings from the coffee export, but from the mid-eighties until the mid nineties, the importance of foreign aid relative to export earnings increased dramatically. The continued supply of foreign aid allowed Habyarimana to sustain his budget, even when coffee prices continued to drop.

Graph 3: Financial Flows into Rwanda, 1977-93, in millions of US \$ (Uvin,P. 1998)



(d) Before the war, Tutsis and Hutu from the south were discriminated against in Rwanda, as is demonstrated in a.o. Gerard Pruniers' book. Prunier describes the political situation at the end of the eighties. He describes the growing nervousness of the political elite at the fall of the international coffee price. This intensified competition for donor aid

among the political elite. At that time, the first signs of protest by civilians turned up. After the start of the civil war, Prunier writes, the domestic opposition engaged in political action for reform and democratization (p. 151). The game was not played by two (rebels and regime), but by three (p. 126). In the winter of 1990-1991, the opposition held clandestine meetings because they were afraid of regime repression (p.153). In March 1991, 237 members of the opposition publicly launched the MDR, which actually was a reinvention of the party of the former president Kayibanda. (p. 153). This party quickly gained support in the centre and in the south of the country. Soon after, other opposition parties were established. In the theoretical model, I explain this protest activity by means of a changed ordering of the payoffs for the opposition. The war namely, provided incentives for non-cooperation. On November 17, 1991, three opposition parties sent out a joint memorandum detailing the obstruction of the regime to the advancement of democratization. These were : harassment and physical attacks on militants; propaganda by the MRND; and exclusive use of government buildings and vehicles by the MRND. The theoretical model predicts an equilibrium of protest and repression at this stage. There is evidence to suggest that a number of politicians continued with their political activity not only because of the war, but also because they felt secure due to the involvement of the international community. The Belgian Ambassador, for example, was frequently visited by politicians from all parties and also by human rights activists. At that time, people in Rwanda had great respect for the ambassador and trusted him. A survivor of the genocide told a Belgian journalist that she was very bitter that her husband, a politician of the opposition was not saved by UNAMIR :

*“The international community first supported my husband in establishing the Arusha peace agreements and when this man is in danger, they did not care about him.”*³⁶

(e) In the nested game, cooperation only develops if the parties to the conflict value the future high enough (see Graph 2). It is quasi-impossible to know the discount rate that was used by the different parties and we are left with some statements and actions from which we may infer or derive some knowledge about discount rates. From the part of the autocratic regime it is known that one of its leaders, Colonel Bagosora left the Arusha

³⁶ Vidal, K., *ibidem*, 1998, p. 110.

Peace Negotiations in August 1993 stating that he *is going home to prepare for the Apocalyps*. In March 1994, right before the outbreak of the genocide, a major privatization operation was launched by the regime. State assets, of which the regime knew they were going to be lost anyway were sold to the benefit of Akazu bank accounts. In Arusha, the negotiating team representing the governing party (MRND) was not represented by its leading members, was not well prepared and showed disinterest in the whole affair. In general, one could say that the preparation for genocide through ethnic manipulation of young Hutu is a clear sign that regime leaders are working towards an ethnic escalation of the conflict, which includes, we believe, a low discount rate. However, this does not allow us to conclude that the minimum value of the discount factor needed to trigger cooperation in the nested game could not be achieved. The regime clearly wanted to maintain power and developed the strategies to reach that objective. Given the behaviour of the international community they also believed they could get away with it. As for the rebels are concerned, one has few indications on their discount rate as well. One thing however is that they always saw themselves as Rwandans, not divided along ethnic lines. Of course, this was partly propaganda for their cause, but at least was not inciting to ethnic violence against one's neighbours. In Arusha, the rebels were represented by its Secretary General and all observers praised the organized manner in which the rebels approached the negotiations. The evidence suggests that the rebels took these negotiations seriously. The rebel discount rate may not have been much higher than the discount rate used by the regime, the scarce evidence suggests that it must have been a little higher. At least for the 1991-1993 period, the threshold level of the discount factor to achieve cooperation was within reach. For the same token, we believe that the discount rate of the domestic opposition was higher than the one used by the other parties to the conflict. The domestic opposition, before its breakdown along ethnic lines was ready to cooperate with both the regime and with the rebels. They namely participated in the multi-party government from 1991 to 1994 and took the lead in the negotiations with the rebels.

(f) In the theoretical model, the elimination of the Hutu opposition is considered as a second kind of nested game, not a nested game with variable payoffs, but a nested game

called ‘ *institutional design* ’. In order to document that this concept may be able to explain the acts of the regime, we showed that the regime actually planned this. On top of this, ‘ eliminating ’ the Hutu opposition can be understood as splitting this opposition in two groups, but can also be taken further, namely in the physical sense of murdering this opposition. Since I already explained that the split in the moderate opposition was a deliberate attempt by the regime, I will concentrate briefly on the physical elimination of this opposition. I realize that this physical elimination is not really covered in the model, but with a little bit of imagination one can consider this mass murder as institutional design. If we take a thorough look at the concept of institutional design, which in its core is the development of innovative strategies to change the structure of the game one is playing, there is no need to limit the regime’s strategy to the splitting of the domestic opposition. Indeed, why could such a regime not contemplate the physical elimination of the domestic opposition. That would indeed be an innovative strategy that would allow the dictatorial regime to break of the multiple arena game and to shape the conditions for the genocide. Institutional design is then considered as the re-shaping on the rules of the game in order to allow the players to use other, innovative strategies. The physical elimination of the moderate Hutu of Rwanda reshapes the rules of the game and clears the way to an even more innovating strategy, namely to kill all the Tutsi of Rwanda. When the killing of the moderate Hutu can be understood as institutional design in order for the regime to escape the multiple arena game, the genocide of the Tutsi minority can be understood to deal with another institution or rule of the game, namely its infinity. Genocide, can thus be understood as an innovative strategy to reshape once and for all the rules of the game. If we kill the Hutu moderates, we only face one enemy and cooperation becomes less likely. This innovation is a necessary step towards an even more trilling innovation. If we kill all the Tutsi, we never have to play the game again and we may rule Rwanda forever.

VIII) Conclusion

From the nested model without foreign intervention, one can derive that cooperation could have emerged between the regime, the domestic opposition and the rebels. The logic of this argument is that without military and donor assistance the war would be too expensive for the regime. This solution is hypothetical; we cannot really check it. Important at least from a theoretical point of view, is that this solution would have prevented the regime from carrying out the genocide. Institutional redesign without military aid (reducing P) and donor aid would have been useless because the dictator would not have been able to finance the war with the rebels. This means that in the course of redesigning the rules of the game, the regime counted on continued donor support.

Of course, this is easily stated from behind a desk, far away from the reality of war, but when I want to show the impact of foreign assistance, I at least have to show the hypothetical situation without the foreign aid. At the start of the war, Rwanda was a country favored by the donor community. These donors were willing to help Rwanda to overcome its economic crisis caused by a collapse of the international coffee price and worsened by the war. Noticing that the Rwandan regime engaged in crimes against humanity and mass murder, the donors tried to push the regime into a process of democratization. They were in the position to do this, since the survival of the regime depended on donor assistance. However, after pressure by the donors, president Habyarimana made conciliatory statements and donor aid continued. In 1992 and 1993, the donor community was heavily involved in the peace process and assumed shared responsibility for the implementation of the peace agreement. In this position they became hostage of their own policy. Since they were involved in the whole peace process, they could not simply withdraw. The regime leaders learned from this that human rights conditionality in aid policy was never a real threat. None of the donors cancelled its aid with reference to the bad human rights record of the regime. Moreover, France kept up its military support to the Rwandan regime, even after ample evidence of mass murder was established. Again, the regime learned from this that they could get

away with it, that France would stand by their side no matter what they did. However, since the other donors became less and less tolerant of the regime's human rights abuses and of its reluctance to share power, the Habyarimana regime was pushed against the wall and had to accept to share power. It is at this point that the regime chose the innovative strategy to break out of the multiple arena game by a reduction in the number of players. The elimination of the moderate Hutu opposition was an example of institutional change that opened the way for another kind of institutional change. If the regime could deal with the infinity of the problem, namely the presence of the Tutsi minority in Rwanda, it would never have to play the game again and could rule forever.

Appendix

Appendix 1 : Repeated play of the transition game

In this type of games, cooperation develops if punishment dominates the temptation to defect. Punishment is the difference between the future benefits of cooperation and the future benefits of non cooperation. For the dictator, this means

$$\begin{aligned} \left(\frac{\delta}{1-\delta}\right)\left[\frac{B}{2} - (B - p_\pi \pi)\right] > B & \Leftrightarrow \left(\frac{\delta}{1-\delta}\right)\left[p_\pi \pi - \frac{B}{2}\right] > B \\ & \Leftrightarrow \delta > \frac{B}{\left(p_\pi \pi + \frac{B}{2}\right)} \end{aligned} \quad (5)$$

Since δ is in the $[0,1]$ interval and we assumed $p_\pi \pi < B/2$ (condition (2)), equation (5) can never be satisfied. The significance of condition (2) is thus the following : as long as repression is cheaper than power sharing, the dictator will never share power.

The domestic opposition is ready to cooperate if

$$\begin{aligned} \left(\frac{\delta}{1-\delta}\right)\left[\frac{B}{2} - R\right] > B & \Leftrightarrow \delta\left(\frac{B}{2} - R + B\right) > B \\ & \Leftrightarrow \delta > \frac{B}{\frac{3B}{2} - R} \end{aligned} \quad (6)$$

Since δ is in the $[0,1]$ interval and we assumed $R < B/2$ (condition (4)), equation (6) is satisfied if δ is in the $]2/3;1[$ interval with δ at least (and higher than) $2/3$ if R approaches its lower bound 0 and δ close to 1 if R approaches its upper bound $B/2$. If δ is in the

$[0, 2/3]$ interval, the domestic opposition will never cooperate. In order for the domestic opposition to cooperate with the dictator in a repeated game with the assumed ordering of payoffs, the discount rate of the domestic opposition needs to be larger than $2/3$. We can conclude here that, given the ordering of the payoffs, cooperation will not occur in the repeated transition game. If the domestic opposition values the future highly, they are willing to cooperate, but the dictator never cooperates, whatever the value of δ .

Appendix 2: Repeated play of the civil war game

When considering a repeated version of the civil war game, we will assume that both players interact less frequently than in the transition game. This seems a plausible assumption since the dictator is much closer (in the physical sense) to the domestic opposition than to the rebels. We will assume that the dictator and the rebels interact every two periods.³⁷ Since this is a prisoner's dilemma game, cooperation will develop under the following condition

For the dictator

$$\left(\frac{\delta^2}{1-\delta^2}\right)\left[\frac{B}{2} - (B - p_w W)\right] > B \quad \Leftrightarrow \quad \delta > \left[\frac{B}{\left(p_w W + \frac{B}{2}\right)}\right]^{\frac{1}{2}} \quad (10)$$

Since we assumed $p_w W > B/2$ (condition (9)), equation (10) is satisfied if δ is in the $]0, 81; 1[$ interval with δ close to 1 if $p_w W$ approaches its lower bound $B/2$ and δ at least 0.81 if $p_w W$ approaches its upper bound B .

³⁷ This idea is taken from Lohmann, S (1997) who applies a similar approach to the linkage of domestic and international conflicts

For the rebels

$$\left(\frac{\delta^2}{1-\delta^2} \right) \left[\frac{B}{2} - M \right] > B \quad \Leftrightarrow \quad \delta > \left[\frac{\frac{B}{2} - M}{\frac{3B}{2} - M} \right]^{\frac{1}{2}} \quad (11)$$

Since we assumed $M < B/2$ (condition (9)), equation (11) is satisfied if δ is in the $]0,81;1[$ interval with δ at least (and higher than) 0.81 if M approaches its lower bound 0 and δ close to 1 if M approaches its upper bound $B/2$.

Condition (9) and equations (10) and (11) can be taken together to state the following:

If $p_w W > B/2 > M$ cooperation will occur in this repeated prisoners' dilemma (RPD) if δ is in the $]0,81;1[$ interval. In order to get the two parties to accept a peaceful solution to the conflict they both have to value the future very highly. The rebels have to value the future higher than the domestic opposition. The advantage of the RPD is that there is a level of δ at which the dictator is willing to choose peace.

Appendix 3 : Small amount of foreign aid

When the donor community conditions its aid on the regime's human rights record and the amount of aid provided is less than the budget the government can acquire by taxation, the preference ordering of the dictator becomes

$$B > (B + FA_{\text{hrc}})/2 > B - P > 0$$

$$\text{this condition holds if} \quad B > FA_{\text{hrc}} > B - 2P \quad (16)$$

For the domestic opposition and the rebels, the ordering is as follows

$$B > (B + FA_{\text{hrc}})/2 > R \text{ or } M > 0 \quad (17)$$

If both conditions hold, the dictator is facing a prisoner's dilemma in the nested game. Cooperation develops if punishment dominates the temptation to defect. Punishment is the difference between the future benefits of cooperation and the future benefits of non cooperation. For the dictator, this means

$$B < \left(\frac{1}{2}\right)\left(\frac{\delta}{1-\delta}\right)\left[\frac{B+FA_{hrc}}{2} - (B-P)\right] + \left(\frac{1}{2}\right)\left(\frac{\delta^2}{1-\delta^2}\right)\left[\frac{B+FA_{hrc}}{2} - (B-P)\right] \quad \Leftrightarrow$$

$$\frac{2B}{P + \frac{FA_{hrc} - B}{2}} < \left(\frac{\delta}{1-\delta}\right) + \left(\frac{\delta^2}{1-\delta^2}\right) \quad (18)$$

Since we know that $P \in \left[\frac{B - FA_{hrc}}{2}, B - \frac{FA_{hrc}}{2}\right]$

if P approaches its lower bound, the left hand side of (13) approaches ∞ and (13) cannot be satisfied. If P approaches its upper bound, the left hand side of (13) approaches 4 and (13) is satisfied if $\delta > \approx 0,74$. This result is similar to the nested game without foreign aid, but in the present case, small amounts of foreign aid with conditionality, cooperation becomes more attractive than in the game without foreign aid. This is because the boundaries of the interval in which P moves, have shifted to lower levels.

For the rebels and for the domestic opposition, the conditioned and small amount of aid also increases the attractiveness of cooperation : the domestic opposition will cooperate if

$$B < \left(\frac{\delta}{1-\delta}\right)\left(\frac{B+FA_{hrc}}{2} - R\right) \quad \Leftrightarrow \quad \delta > \frac{B}{\frac{3B+FA_{hrc}}{2} - R}$$

and the rebels if

$$B < \left(\frac{\delta^2}{1 - \delta^2} \right) \left(\frac{B + FA_{hrc}}{2} - M \right) \quad \Leftrightarrow \quad \delta > \left[\frac{B}{\frac{3B + FA_{hrc}}{2} - M} \right]^{\frac{1}{2}}$$

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