The Charitable activities of Terrorist Organizations[†]

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Abstract

Violent groups sometimes invest significant resources in social work, notably in the form of charities and NGOs. The present paper models a terrorist group's charities as a means to advertise its cause in order to raise popular support. The analysis explains how different types of organizations arise in equilibrium, depending on government policies. Then, the interaction between a purely terrorist group and an independent local NGO is examined. It is shown that a purely terrorist group always invests in more attacks than an integrated terrorist-charity organization. Furthermore, the latter may have more NGO activity than a separate local NGO.

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1. Introduction

The war on terror launched by George W. Bush in 2001 has generated interest in the profiles of organizations and individuals who engage in terrorist activities. Anti-terrorist policies worldwide have exhibited particular efforts to detect and destroy the organizations' financial resources. These efforts have revealed the highly diversified nature of terrorists' asset portfolios. In particular, it is now well known that some violent groups receive money from charitable and humanitarian organizations. Several important international Non Governmental Organizations (NGOs) had to cease their activities because they were suspected of transferring funds to terrorist groups. For example, the Holy Land Foundation for Relief and Development was closed in December 2001 when the FBI discovered it was funding the Palestinian Hamas (Levitt, 2003). Levitt (2002) reports that "the US government established that… funds were used to support schools and indoctrinate children to grow into suicide bombers". Then, the author criticizes the European Union for drawing "a fallacious distinction between the nonviolent activities of terrorist groups and the terror attacks that they carry out". This debate is taking place in the context of the fight against terrorism financing. Indeed, some groups classified as terrorist undertake very efficient relief operations and development programs for the poor, and in addition to the fund-raising motive, these programs enhance the welfare of thousands of people in need. In his work on Islamic NGOs, Ghandour (2002) reports that The Palestinian Hamas[1] devoted 95% of its budget to maintain an important network of local NGOs, which makes it one of the most important actors in the local development community. Furthermore, he argues that in Algeria, after an earthquake in October 1989, NGOs affiliated to the Islamic Salvation Front provided aid to the victims more efficiently than the government. Such examples show that an important purpose of these charitable initiatives is to gain support from the local population, and that the analysis has to go beyond the issue of money

1 The Hamas won democratic elections in the Palestinian Territories in January 2006. While the group's change in status raises issues that are outside the scope of this paper, the election is clear evidence of the group's popular support. The information provided about Hamas in the rest of the paper is based on its activities prior to being elected.

laundering.

This paper considers charitable investments by terrorist groups as a way for them to advertise their ideals among potential sympathizers. Indeed, charities not only provide a conduit for money laundering, they also truly benefit people in need. As a result, those who at least partly share the goals of the terrorist group are likely to be more willing to make their contribution to the fight. The analysis uses a simple theoretical model where the terrorists' charities are assumed to have an advertising effect on people's preferences. Then, it is shown how different types of activist organizations may arise, ranging from those specializing in charity to those which only produce terrorist attacks. The interaction between terrorists and local charities is also examined.

The term “terrorist” for the purpose of this paper will refer to any violent, primarily domestic group in a country, that is not part of the government and has a political agenda. Such groups are often termed “terrorist” by some while being classified simultaneously as rebels, guerrilla fighters, etc. The paper is partly inspired by the wider conflict literature where groups are often termed rebels. The basic idea presented here also comes from Che Guevara (1960)’s theory of guerrilla warfare, where he underlines the necessity for a rebel group to help the local population, not only to get food and clothes from them but also because the guerrilla is supposed to represent the people’s aspirations.

To sum up, the term used in the present analysis will be “terrorists”, since the paper's motivation comes from the observation that groups often classified as “terrorist” provide charitable services for the poor, and the organization's objective function is modelled following recent economics models of terrorism. However, the paper aims at providing more general insights on various kinds of violent groups for which support from the population may matter.

The model presented here belongs both to the literature on the economics of conflict and to the strand of formal papers dealing more specifically with terrorism. Azam (2005) assumes that agents care about the welfare of their descendants who might benefit from a public good with some

probability. The latter can be increased by engaging in bombing, and agents are willing to give up some of their consumption today and contribute resources in favor of the next generation.

Bueno de Mesquita (2005) presents a model where a terrorist group screens applicant volunteers and only recruits the best ones. The author argues that people with little education, few economic opportunities and anti-government feelings, are more likely to volunteer. The model establishes a link between poor economic conditions and mobilization in favor of terrorist groups, while explaining why some recent data (Krueger and Maleckova, 2002) suggested that actual terrorists are relatively less poor and more educated than the average member of the population. According to the author, this is due to the screening of applicants by terrorist organizations, which makes the latter recruit people whom they think will be more qualified to follow instructions. As a result, even if poor people have lower opportunity costs of participation and may support the terrorists, the screening process selects those who are more educated (and richer) to ensure the efficiency of attacks.

Bueno de Mesquita and Dickson (2005) analyze a signaling model where a terrorist group cares about the level of support it gets from the population. By engaging in a form of counterterrorism that may or may not be damaging to the local population, the government signals the extent to which it cares about its people's welfare. After observing the government's policy, people decide whether to support the terrorist organization. Then, in this model, the latter tries to provoke hard government crackdowns in order to increase people's involvement in terrorism. Thus, in their paper, signaling comes from the government's crackdowns while, in the present paper, the ("advertising") signal comes from the terrorists, since their charitable activities allow them to promote their ideas among potential sympathizers.

Faria and Arce (2005) propose a dynamic model where the number of new terrorist recruits depends positively on the level of social support for terrorism. Like in the present paper, the terrorists benefit from popular support, but the latter is assumed to depend positively on past levels

of terrorist activity and on some exogenous underlying support. However, the analysis in Bueno de Mesquita and Dickson (2005) shows that the population might also blame the terrorist group for the increased damage it suffers. Therefore, the positive link between violence and social support for terrorism assumed in Faria and Arce (2005) seems questionable without further explanations, since the sign of this correlation clearly depends on various factors.

Recent papers have investigated the case of extremist groups that contribute to local public goods. Berman (2003) adopts a club good approach to model groups like the Palestinian Hamas. He argues that "exclusion from access to the local public good [...] is a common, viable form of enforcement" of various kinds of prohibitions and sacrifices. However, even if such requirements do exist, extremist groups also provide their charitable services without requiring contributions in return. Berman and Laitin (2005), who use Berman (2003)'s club good model to rationalize the use of suicide bombing, acknowledge that their analysis does not explain cases where public goods are provided in a nonexcludable way. The present analysis is therefore a useful complementary step toward the understanding of such phenomena.

As mentioned above, the idea that politically motivated groups provide services to the population to advertise their cause is not limited to terrorism, and can be applied to many insurgent or revolutionary movements. Ferrero (2004) models a two-product political cooperative that produces both revolution and reform. In his paper, reform consists of the production of a commercial good in addition to the group's political good. Commercial production helps to build trust in the cooperative among customers, which improves the credibility of revolutionary promises and thus enhances people's willingness to pay for the political good. This is similar to the idea of advertising presented in the present paper. The author uses his model to explain the "divergent national development within the socialist movements of the 20th century", some of which having focused on reform more than others. Another interesting paper is Azam (2006) which aims to explain why some rebellion leaders are regarded as thugs while others are considered heroes. The

author points out the example of the Eritrean People's Liberation Front, which "was going out of its way in order to gain popular support in the liberated areas by engaging in various forms of social spending".

This paper also relates to the economics literature on NGOs. The organizations' major characteristic in this literature is their relatively higher altruism and commitment to the beneficiaries compared to private for-profit firms and the government. This is the basis of the analysis in papers like Besley and Ghatak (2001), Jack (2001), and Hopkins and Scott (1998), among others. There is also an older literature on the nonprofit sector and charities, for which Rose Ackerman (1996) provides a good survey. A signaling explanation for charitable contributions can be found in Glazer and Konrad (1996), where people voluntarily contribute to private charities to signal their wealth. In the present paper, the motivation of the terrorists to invest in charities comes from their willingness to contribute to public goods and to advertise for their cause.

Section 2 presents some examples that have motivated the paper. In particular, they suggest that violent groups often care about popular support and make significant efforts to increase it. In section 3, the basic model is developed. It starts by assuming that the terrorists' charities allow them to advertise for their cause. It is shown that agents' voluntary contributions to the terrorist group may increase or decrease as a result of a higher level of terrorists' charities. Furthermore, studying the terrorist group's investment decisions shows how different types of organizations arise as a result of exogenous parameters representing the government's development and counter-terror policies.

Then, in section 4, a violent group (specialized in terrorism) and a local NGO (specialized in charity) are modeled as separate, independent entities, whose respective activities impact each other's costs. More precisely, it is assumed that terrorist activity increases the cost of NGO operations, while charity work by the NGO has an advertising effect that may benefit the terrorist group by increasing its support base but also by reducing its costs. The Nash equilibrium level of

NGO and terrorist activity is analyzed, and potential effects of international aid to the local NGO are discussed. Finally, the analysis goes back to the case of an integrated terrorist-charity, as described in section 3. It is shown that the integrated group (maximizing the joint surplus of the NGO and the terrorists) always produces less terrorist attacks than a terrorist group acting independently of local NGO activities. The comparison is more ambiguous for the level of charity, so that the joint surplus maximizing level of NGO activities may be higher or lower in the Nash equilibrium.

2. Evidence of violence/charity mix by activist groups

There exist many examples of organizations which, in addition to their violent activities, devote significant time and resources to take care of the poor in a more or less institutionalized way. In his theory of guerrilla warfare, Che Guevara (1960) underlines the social role of "guerrilleros". He argues that rebel groups must represent the aspirations of the people, and that the fighters' mission includes taking care of the local population, notably in rural areas. He explains that rebel groups should always try to help villagers to solve their social and economic problems. Good relationships with the locals should be established so as to initiate voluntary contributions to the guerrilla. Such contributions can be donations of food and clothes, allowing some wounded fighters to stay at one's house, or even volunteering as a soldier. The author insists on the importance of that help from local people for the rebellion to survive and to enhance its efficiency. Such a theory of guerrilla warfare exhibits the main idea of the present paper, namely, that rebels (or whatever such groups are termed) can get closer to the people to signal that they care about them, thereby initiating more popular support for the fight.

Closer to the interpretation in terms of charities and NGOs, extremist Islamic political groups have been investigated by Ghandour (2002) in his work on Islamic NGOs. The Hamas is one of the most important Palestinian political organizations. It is classified as "terrorist" and has been

involved in 115 attacks between 1989 and 2002, including 40 suicide bombings.[2] Bueno de Mesquita (2005) points out the very high popularity of this group, which was recently confirmed by the electoral victory of the group's political wing.

The Lebanese Hezbollah is a very popular group which has gained people's support thanks to various activities (Ghandour, 2002). First, it has been known as the major military force that finally made the Israeli army leave southern Lebanon. Second, it is a political party with elected representatives at the Lebanese Parliament. Third, it has a wide network of charities and NGOs. In her study of Islamic NGOs in Beirut, Fawwaz (2004) even defines the Hezbollah as one of the major Islamic NGOs. She criticizes the development literature that defines NGOs as necessarily non-political organizations, and she further argues that political ideology enhances the efficiency of NGOs such as those affiliated to the Hezbollah.

According to Ghandour (2002), sustained efforts put in social welfare activities have allowed groups such as Hamas and Hezbollah to gain and maintain an important support base in local populations, while groups that focus on violence have not managed to establish such legitimacy.

In Sri Lanka, The Liberation Tigers of Tamil Eelam (LTTE) is another example of a group classified as terrorist that is also well known for its investment in NGO activities, as underlined by Berman and Laitin (2005).

Finally, it is important to point out that violent political groups in developing countries are not the only users of charitable investments as a strategic advertising tool. Rich governments involved in war zones in poor countries may also use foreign aid, channeled by international development organizations, to improve their political influence. Burnett (2004)[3], a former employee of the World Food Program, reports his experience in Somalia: "[W]e distributed 50-kilogram sacks of grain emblazoned with the American flag and 'Gift of the People of the United States of America.' Somalis readily accepted the aid but it was clear that our professed neutrality was suspect." Further,

2 Source: The Institute for Counter-Terrorism at the Interdisciplinary Institute at Hertzliya, http://www.ict.org.il

3 John S. Burnett, New York Times, August 4, 2004; available at http://www.globalpolicy.org/ngos/credib/2004/0804fire.htm.

he reports words of the US Secretary of State Colin Powell, to NGOs in 2001: "just as surely as our diplomats and military, American NGO's are out there serving and sacrificing on the front lines of freedom. NGO's are such a force multiplier for us, such an important part of our combat team." Investigating such cases would necessarily lead to a discussion of the importance of NGOs' neutrality in places where they operate, but this is outside the scope of the present paper.

The next section develops a simple formal model to show how different types of violent organizations can arise.

3. The model

Assume that a terrorist group is involved in two activities, organizing attacks against the government and providing public goods to the local population in the form of NGOs or charities. It invests T directly in terrorist attacks and s in charity services. The cost function of the group's terrorist wing is given by $C^A(T,s)$, while that of its charitable wing is given by $C^N(s,T)$. These cost functions assume that the group's terrorist and charitable activities affect each other, in the way described as follows.

First, it seems reasonable to assume that the existence of terrorist activity increases the cost of charity operations, so that $C^N_{sT}(s,T)>0$. Indeed, charities whose ideology resembles that of violent groups are more likely to face investigations, and temporary or permanent shut downs. Moreover, this certainly impacts their fund raising abilities negatively. Furthermore, $C^N(s,T)$ is assumed increasing and convex in s, as well as increasing and convex in T.

Second, the existence of the group's charities is likely to facilitate the organization of attacks. Thanks to its network of charities, the group can rely on a more favorable environment and even use the charities as place to hide fighters or weapons. Then, it seems realistic to assume that $C^A_{Ts}(T,s)>0$. In addition, $C^A(T,s)$ is assumed increasing and convex in T, as well as decreasing and convex in s.

Furthermore, the terrorist group is altruistic, in the sense that it cares about the total quantity of development programs available to the population, $g+s$, g being the part provided by the government (whose behavior is taken as exogenous). These programs may include the provision of various private and public goods, such as credit, education and health centers. But the key feature here is that the benefit from these programs is a public good (as in Besley and Gathak, 2001), so that the terrorist group derives utility not only from its own contribution but also from the government's. Formally, this part of the group's utility function is given by $\theta_T v(g+s)$, where the parameter θ_T reflects the group's valuation for public goods, and $v(\ )$ is an increasing and concave function.

Then, let the increasing and concave function $B(T)$ reflect the damage caused by the terrorists' direct attacks. As in Bueno de Mesquita (2005), the group also cares about popular support for its cause, b. This comes from sympathizers in the population who each voluntarily contribute time b_i in favor of the group's interests, and $b=\Sigma_i b_i$ is the total contribution. These contributions in time may be thought of as various types of activities, ranging from participating in demonstrations to hiding weapons and wounded fighters in one's house, or even training to commit future attacks. Then, the overall impact of the terrorist group is the sum of its direct attacks and popular support, given by $B(T)+\psi b$, where the positive parameter ψ captures the relative importance of popular support for the group. In addition, it is affected negatively by the government's counter terror operations K, so that the net terrorist impact of the group is $\omega(K)(B(T)+\psi b)$, where $\omega(K)$ is a decreasing function.

To sum up, the terrorist group's net utility function is given by:

$$V_T=\theta_T v(g+s)+\omega(K)(B(T)+\psi b)-C^A(T,s)-C^N(s,T) \qquad (1)$$

Assume that the population of potential terrorist sympathizers is made of identical individuals who derive utility from their private consumption c and from their contribution b_i to the terrorist

group which claims to represent their interests. Each agent's time endowment is L and by spending some time l working, she derives an income $(g+s)l$. Recall that $g+s$ is the total amount of development programs, and it is therefore assumed that they increase people's marginal productivity of time at work. In other words, these development programs can be thought of as productive social expenditures, in the spirit of Barro's (1990) productive government expenditure.

The representative agent i's utility function is given by:

$$c_i+\alpha(s)u(b_i) \qquad (2)$$

where $u(b_i)$ is increasing and concave in b_i and $\alpha(s)$ is increasing in s.

This requires further explanation. First, $u(b_i)$ is the utility derived from fostering the terrorist group's goals. Second, the terrorists' charitable investments have two goals. The first, because the group is altruistic, is to improve the productivity of people in the economy. The second is to advertise the group's values and objectives, in order to gain people's support. This is reflected in the function $\alpha(s)$, the value attached to participation in the agent's preferences, which is increasing in the terrorists' investment in charities. Formally, the key feature in (2) is that the marginal utility of b_i is increasing in s, that is, people's preferences are such that charities (advertising) act as a complement to their individual contribution to terrorism. This aspect of the present paper is inspired by Becker and Murphy (1993) who model advertising as a good consumed by agents. This way of considering advertising is particularly relevant in the present paper, since people benefit from (consume) the services provided by charities, while at the same time being exposed to the terrorist group's values. For example, a school might be named after a martyr, or strong ideological bias can be introduced in teaching some subjects. More generally, the charities' staff can promote the cause that the terrorist group claims to fight for, like the right of a people to have its own land, or freedom from occupation by foreign military forces.

Note that, while operating local charities can be a very efficient conduit for promoting the ideals of violent extremist groups, the idea of an advertising effect of charity is not limited to the

activities of such violent groups. Many development NGOs invest in advocacy and not only in service provision. For example, environmental NGOs not only finance programs to save animals and forests, but also aim to educate people around the issues involved.

Azam (2005b) assumes that education changes people's "world view", in the sense that it changes the value they attach to terrorist activity. This is in line with his previous paper on suicide bombing (Azam, 2005a) where terrorist attacks aim to increase future generations' welfare, and the author argues that more educated people are likely to be more sensitive to the fate of the next generation. These papers underline the importance of people's perception of the terrorists' cause. In the present model, people are exposed to the group's advertising when they come to affiliated charities, and this is assumed to affect positively their valuation for the cause.

Furthermore, note that equation (2) implicitly assumes that people only derive utility from their own contribution to terrorism and not from the resulting impact of the group, $\omega(K)(B(T)+\psi b)$, which implies that their decision is not directly impacted by the level of government counter terror K. This is equivalent to assuming a warm glow type of altruism. However, it will be shown that K affects the equilibrium level of support, via its effect on the terrorist's investment in charities.

The timing of events is as follows. First, given the (exogenous) government policies K and g, the terrorist group chooses its direct investment in attacks, T, and its investment in charities, s.

Then, taking s as given, agent i maximizes her utility given by (2), subject to her budget and time constraints:

$$(g+s)l=c_i \tag{3}$$

$$b_i+l\leq L \tag{4}$$

The budget constraint assumes that development programs are provided for free. As far as the charities operated by terrorist groups are concerned, previous literature has argued that they are not equally available to all members of the population. More specifically, services are sometimes

provided conditional on some level of involvement in the group's ideology and activities (Berman, 2003; Berman and Laitin, 2003). However, even if such requirements do exist, extremist groups also provide their charitable services without requiring contributions in return.

Using the constraints (3) and (4), the agent's optimization problem is solved by choosing b_i so as to maximize the following:

$$(L-b_i)(g+s)+\alpha(s)u(b_i) \tag{5}$$

subject to the constraints $b_i \leq L$ and $b_i \geq 0$.

The model is solved by backwards induction, starting with the agent's utility maximization for a given level of terrorist charities. For simplicity, all agents in the population of potential terrorist sympathizers are identical, and the size of the population is normalized to one, so that the contribution of representative agent i is also the total (i.e. $b_i = b$). The focus, then, is on the main goal of the present analysis, namely, to show how different types of terrorist groups arise.

3.1. *Popular support for the terrorists*

The following proposition establishes the representative agent's voluntary supply of time in favor of the terrorist group.

Proposition 1.

(i) The agent supplies a positive amount of time in favor of the group's cause if:

$$(g+s) \leq \alpha(s)u'(0) \tag{6}$$

(ii) She becomes a full time supporter if:

$$(g+s) \leq \alpha(s)u'(L) \tag{7}$$

Proof. This is is obtained by solving the agent's utility maximization problem, using the Kuhn and Tucker theorem and the complementary slackness conditions. □

Proposition 1 points out the fundamental role of government's development policy as a

determinant of people's voluntary support to terrorism. The role of poor economic opportunities in people's decisions to join terrorists or rebellions has been emphasized in previous literature. In a model where people choose between terrorism and an economic activity, Bueno de Mesquita (2005) shows that economic downturns increase mobilization in favor of the terrorists. Finally, in the civil war literature, Azam and Mesnard (2003) argue that potential rebels are more likely to go to war the lower the probability of benefiting from future government spending. Since the present analysis assumes that potential supporters are rational, they compare the utility gain from participation with the opportunity cost, namely, the forgone income due to time spent away from their economic activity. The latter cost is increasing in g, since development programs such as health, education or improved local infrastructure, improve people's marginal productivity at work (and hence their income), thereby making it more costly to spend time contributing to terrorism.

The next proposition characterizes the interior solution to the agent's utility maximization problem, that is, where $0 < b_i < L$.

Proposition 2. At an interior solution, the volunteer supply of terrorism by agent i is given by b^e such that:

$$(g+s)=\alpha(s)u'(b^e) \qquad (8)$$

The right hand side is the marginal utility of participation. It is increasing in s, since the terrorists' charities allow them to advertise their cause, thereby raising the value potential supporters attribute to contributing to the cause. The marginal cost of participation is reflected on the left hand side by the marginal productivity of agent i, that is, the marginal increase in income due to an extra unit of time spent in her economic activity. As already mentioned above, government development programs increase this opportunity cost of terrorism.

Interestingly, the terrorist's charitable investments, s, increase both sides of equation (8). This gives rise to a fundamental trade off for the terrorist group that needs volunteers for its attacks: on the one hand, more charity services make it more efficient at convincing people that its fight aims to

improve their fate, which raises $\alpha(s)$, the value agents attach to their participation in terrorism; on the other hand, a higher value of s makes people's economic activity more productive, which increases the opportunity cost of volunteering for the group. Figure 1 represents the interior solution defined by (8).

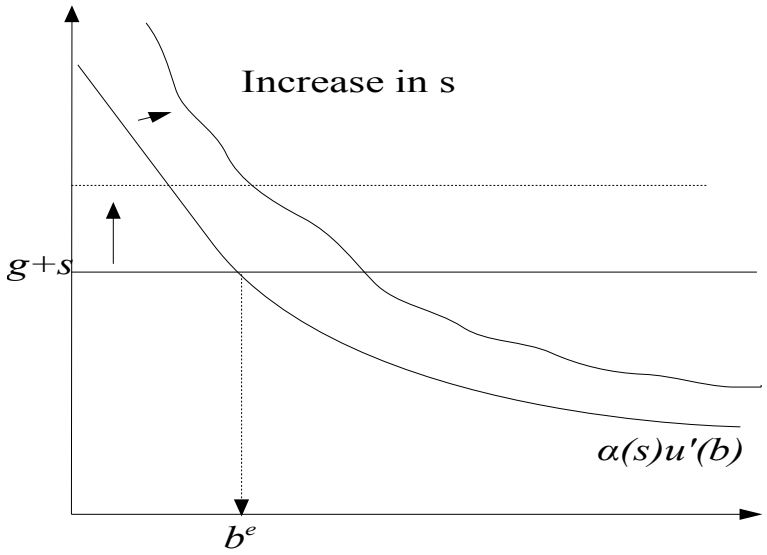

Figure 1: Agent's voluntary supply of time.

The diagram makes it clear that an increase in s has an ambiguous effect on the voluntary supply of time b^e by the representative agent. On the one hand, it makes the $\alpha(s)\,u'(b)$ curve shift upward, which is the advertising effect; but on the other hand, it raises the line $g+s$, which is the opportunity cost effect. Depending on the relative size of these two shifts, b^e may either increase or decrease.

This ambiguous effect is not limited to terrorism and can be applied to many insurgent and revolutionary movements. As mentioned in the introduction, Ferrero (2004) models a political cooperative that, in addition to engaging in revolution, produces a commercial good. The author points out that the commercial sector may represent a "temptation away from revolution" if it becomes profitable enough.

Formally, the impact of s on b^e is obtained by totally differentiating (8) with respect to s:

$$b^{e\prime}(s)=\frac{[1-\alpha'(s)u'(b^e)]}{[\alpha(s)u''(b^e)]} \qquad (9)$$

Therefore, the agent's voluntary contribution will rise with the terrorist's investment in development programs if $\alpha'(s)u'(b^e)>1$. In words, this is the case if the advertising effect, that is, the increase in the marginal utility of b^e following an increase in s, dominates the opportunity cost effect, that is, the fact that an extra unit of s increases the marginal return to time in the economic activity by one. Note that if α(s) were assumed linear, this would correspond to a constant marginal advertising effect of charity expenditures. However, the concavity of α(s) would assume a decreasing marginal advertising effect of s. In this case, the sign of (9) would be more likely to be positive for low values of s. On the other hand, the advertising effect is more likely to dominate for high values of s if α(s) is assumed to be convex.

Next, the terrorist group's investment decision is analyzed.

3.2. *The terrorists' investment in charities*

In this section, for simplicity, the cost functions of the group's terrorist and charitable activities are assumed to be linear and the cost interactions between activities are ignored, that is: $C^A(T,s)=T$ and $C^N(s,T)=s$. In addition, in this section as well as in the rest of the paper, I focus on the case where $b^{e\prime\prime}(s)<0$, that is, the marginal impact of charities s on popular support for the terrorist group is decreasing. Note that this marginal impact, $b^{e\prime}(s)$, can be either positive or negative depending on whether the advertising effect dominates the opportunity cost effect.

The terrorist group chooses its investments s and T in order to maximize its utility, taking into account the representative agent's reaction function $b^e(s)$. The following proposition states conditions under which the terrorist's investments in charities and attacks are positive.

Proposition 3.

(i) The group invests a positive amount in charities if:

$$\theta_T v'(g)+\omega(K)\psi\, b^{e}{}'(0)-1\geq 0 \qquad (10)$$

(ii) It invests a positive amount in attacks if:

$$\omega(K)B'(0)-1\geq 0 \qquad (11)$$

Proof. By solving the utility maximization problem of the terrorist group, the discussion of the complementary slackness conditions leads to (10) and (11). □

Since $\omega'(K)<0$, condition (11) defines a threshold K_{min} for K, the level of government crackdowns, above which the group does not invest anything directly in attacks. In addition, since $v''()<0$, condition (10) characterizes a threshold level of government development programs, g_{min}, below which the terrorists become active in the charity/NGO sector.

Using the previous result, proposition 4 summarizes how various types of terrorist groups arise, depending on government policies K and g.[4]

Proposition 4.

(i) If $K < Kmin$ and $g > gmin$, the group is a "pure" terrorist organization, in the sense that they invest in attacks but not in charities.

(ii) If $K < Kmin$ and $g < gmin$, the group is a "hybrid" organization that invests both in attacks and charities.

(iii) If $K > Kmin$ and $g < gmin$, the group is directly active only in the charity sector, and attacks result solely from the voluntary supply of time by its supporters.

(iv) If $K > Kmin$ and $g > gmin$, the group is inactive.

Figure 2 presents this typology of groups in a more visual way. Note that g_{min} is a function of K, but may be increasing or decreasing. This depends on the sign of $b^{e}{}'(0)$, which in turns depends on whether the advertising effect of the terrorist charities dominates their opportunity cost effect, as shown in the previous section. For example, if the former dominates[5], then, (10) and (11) give rise

4 In his model of a two-product political cooperative, Ferrero (2004) studies the group's optimal allocation of effort between revolution and reform. He argues that the relative size of the group's two wings depends on trust and credibility constraints vis-à-vis its customers and workers, as well as on a liquidity constraint on its operations.

5 One could graph the case where the opportunity cost effect dominates, and then g_{min} would be a decreasing function

to the case depicted on figure 2.

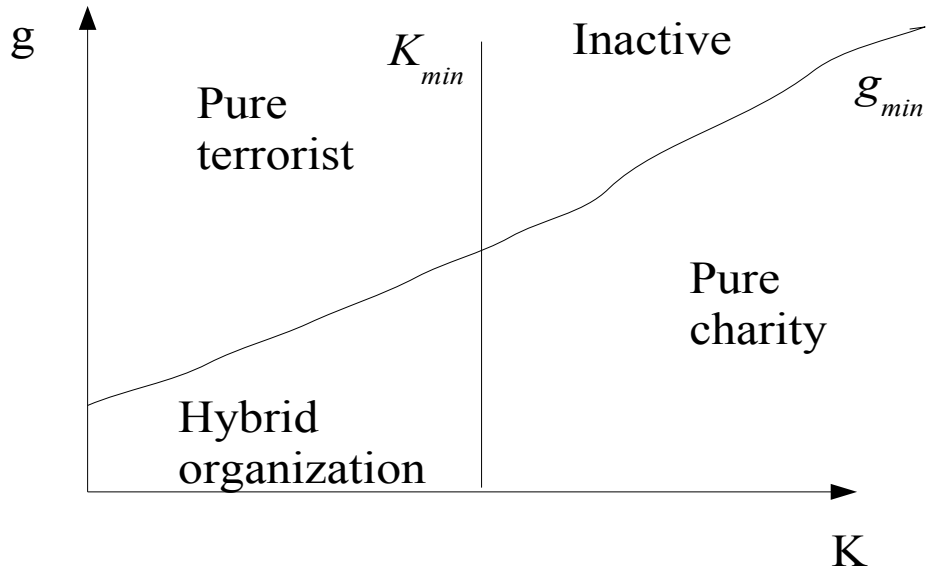

Figure 2: Different types of "terrorists".

Some simple comparative statics are worth examining. First, an increase in θ_T, the valuation of the group for public goods (i.e. its "altruism"), shifts the g_{min} curve upward, thereby enlarging the range of parameter values for which the terrorists are active in the NGO sector. This is perfectly intuitive and similar to many models of voluntary contributions to public goods.

Clearly, case (iv) may represent the goal of government policy in this simplified framework. It suggests that an appropriate balance of social programs and counter-terrorism is necessary to achieve this situation. The role of social programs is not only to improve economic conditions, but also to reduce the opportunity for terrorists to advertise their goals through charities. Given the recent empirical evidence that poor people are not more likely to become terrorists (Krueger and Maleckova, 2003), the prevention of such advertising is probably where government's social expenditure can play a role.

Furthermore, one may argue that case (iii) can be another goal of government policy. Indeed, a pure charity poses no security threat and even contributes to public good provision. Note that if

of K. However, this would not change the intuition for the following result. The relevance of the distinction between the two cases will become clear shortly.

both K and g are costly for the government, investing $K = K_{min}$ and $g = 0$ is a cost-minimizing strategy to eliminate direct attacks T, and results on the group being a pure charity. However, this does not eliminate the advertising effect of charity and the government may dislike this pure charity because of its political values. In particular, if $b' > 0$, the charity's activity s leads to an increase in popular support for the group's political values, which might translate into the voluntary supply of terrorist acts by the population. Finally, even if this does not result in such extreme behavior, it may still have a impact on future voting choices, another influence that the government may not like (though this is outside the scope of the present paper).

Several well known extremist organizations fit among the first three categories. First, a group such as the Basque separatist organization ETA belongs to type (i). Founded in 1959 by a group of student activists, ETA's goal is the independence of the Basque country from France and Spain. The group is well known for its assassinations and bombing in both countries. Although it does have an official political branch, it does not run any noticeable charitable wing, and the group's base of supporters is believed to be small (no more than several hundred).[6] The Corsican Armata Corsa, as well as the Front de Libération Nationale de la Corse, are among other examples that fit in case (i). Such groups, operating in developed countries with relatively good access to public goods, were indeed unlikely to have much opportunity to seek support by developing charities. Of course, their political wings try to promote their nationalist ideals, but they are far less convincing in such contexts than organizations of type (ii), which benefit from a strong social base, thanks to their active involvement in charitable work.

Three examples, which have already been introduced in section 2, fit particularly well in the "hybrid" second category. The first is the Palestinian Hamas, whose recent electoral victory shows how strong a popular base it has established over the years, notably thanks to its very efficient network of local NGOs throughout the West Bank. The second is the Lebanese Hezbollah, whose network of Islamic NGOs is well known by its supporters as well as by its enemies. As reported in

6 The Institute for Counter Terrorism, http://www.ict.org.il/.

its profile by the Institute for Counter Terrorism, "the purpose of the aid was to gain the support of the organization's activities".[7] Recent studies (Ghandour, 2002, Fawwaz, 2004) show that it has maintained a high level of popular support. Finally, the Liberation Tigers of Tamil Eelam also have connections with the most important Tamil NGOs. Although they are separate bodies, The Liberation Tigers' web page provides a link to that of the Tamil Rehabilitation Organization, and relayed the appeal for donations after the tsunami in 2004.

These three prosperous hybrid organizations can take advantage of the poor economic opportunities available to a large part of their respective local populations. Of course, in the same countries, terrorist groups claiming to represent the same ideals are only involved in violent activities, and therefore belong to type (i). The above formal analysis suggests that such groups are characterized by a low valuation for public goods (θ_T in the model) so that, even in the presence of poor economic conditions, they are less likely to enter the local NGO sector to gain popular support. For example, this may explain the difference between the two main terrorist groups in the Palestinian territories, the Hamas and the Islamic Jihad. The former, as seen above, has a strong commitment in social welfare programs, while the latter seems to have focused on violence. Thus, the second group may be characterized by a very low level of the exogenous parameter θ_T. Furthermore, Ghandour (2002) argues that the Algerian Islamic Salvation Front lost a large part of its popular base when it decreased its involvement in charities and specialized in violence. According to this example, θ_T could be thought of as the outcome of changes in the group's strategy designed by its core members.

Type (iii) is probably the most surprising. Although the label "terrorist" has been used in the paper so far, it is important to point out that this category corresponds to non violent activist groups who are then clearly not terrorists. This reflects the case of groups which, despite their sharing some of the goals of violent organizations, have decided to mobilize support at the grassroots level without promoting violence. The Egyptian Muslim Brotherhood is a good example of such a

7 Ibid.

strategy. Founded in 1928, it remains the most popular opposition group in Egypt, and is committed to a "non violent, reformist approach to islamism"[8] Despite having been banned several times,[9] it operates many charities and has a strong support base among the poor and most industries' trade unions (Ghandour, 2002). But this non violent approach to the promotion of radical religious ideas, combined with its widespread presence in Egyptian society, have made it subject to many legal restrictions on its activities. In the words of the present formal model, it faces a high level of K, while operating in segments of the population that face poor economic conditions. These characteristics, as well as a high willingness to contribute to public goods, help to explain why it falls in the "pure charity" category.

Finally, it is interesting to comment on the interior solution, that is, on the investments in attacks and charities made by a hybrid organization. In the special case of linear cost functions used in the present section, the first order conditions are given by:

$$\theta_T v'(g+s)+\psi b^{e\prime}(s)\omega(K)=1 \tag{12}$$

$$\omega(K)B'(T)=1 \tag{13}$$

The effect of policy parameters K and g on the group's charitable investments s, can be investigated by totally differentiating (12) with respect to K and g, respectively. Then, by rearranging both sides of the resulting equations, one can obtain the following:

$$\frac{ds}{dK}=\frac{[\psi b^{e\prime}(s)\omega'(K)]}{[-\theta_T v''(g+s)-\psi b^{e\prime\prime}(s)\omega(K)]} \tag{14}$$

$$\frac{ds}{dg}=\frac{[-\theta_T v''(g+s)]}{[\theta_T v''(g+s)+\psi b^{e\prime\prime}(s)\omega(K)]} \tag{15}$$

Then, since $v''(g+s)<0$, $\omega'(K)<0$ and $b^{e\prime\prime}(s)<0$, the sign of (14) depends on that of $b^{e\prime}(s)$, while

8 Article in Wikipedia, available at http://en.wikipedia.org/wiki/Muslim_Brotherhood.
9 Ibid.

(15) is always negative.

In the case where the advertising effect of charities dominates the opportunity cost effect (i.e. when $b^{e\prime}(s)>0$), for a given level of g, (14) shows that an increase in government crackdowns K leads to a decrease in s, which in turn decreases the voluntary supply of time to terrorism.

If the opportunity cost effect of charities dominates, more government crackdowns make the terrorists increase their investment in charities, but since in this case, $b^{e\prime}(s)<0$, this also leads to a decrease in the voluntary supply of terrorism.

In addition, regardless of the sign of $b^{e\prime}(s)$, since $B''(\ )<0$, an increase in government crackdowns reduces direct attacks T.

Furthermore, since (15) has a negative sign, an increase in g reduces the group's charitable investments s, which in turn leads to a decrease in popular support if $b^{e\prime}(s)>0$, or an increase in popular support if $b^{e\prime}(s)<0$. Therefore, the negative effect of crackdowns on the overall impact of the group can be reinforced by an accompanying increase in g if $b^{e\prime}(s)>0$, or a decrease in g if $b^{e\prime}(s)<0$. Note that, in practice, it is difficult for the government to know the sign of $b^{e\prime}(s)$, that is, to know whether the advertising effect of charities s dominates their opportunity cost effect. If the government lacks this information, the manipulation of g may undermine counter terrorism efforts. For example, when $b^{e\prime}(s)>0$, the efficiency of an increase in crackdowns K would be reduced if, at the same time, the government provided less social programs g.

4. The interaction between terrorists and local charities

4.1. *NGO independent of terrorists*

So far, the analysis has considered that the advertising effect comes from the terrorist group's investment in charities. However, in many cases, local NGOs are likely to share the values of violent organizations without necessarily being related to them. For example, the Palestinian NGO network, an umbrella organization comprising 92 local NGO members, states the following as part

of its mission statement: "contribute to the national resistance to end occupation" and "advocate for the rights of the Palestinian people locally, regionally, and globally".[10]

This suggests that local terrorist groups, even when they do not invest in charities themselves, benefit from some level of free advertising for their cause, which, following the previous section, can increase popular support. Meanwhile, terrorist operations are likely to impact local (non terrorist) charities.

This section examines the interaction between a purely charitable organization and a terrorist group, when both actors share the same political values but make their decisions non cooperatively. Assume that a local NGO, indexed by *N*, chooses its charitable investment *s* to maximize the following:

$$\theta_T v(g+s) - C^N(s,T) \qquad (16)$$

Following the arguments presented at the beginning of section 3, the NGO is impacted by terrorist activities through its cost function. Then, the existence of terrorist activity increases the cost of charity operations, so that $C^N_{sT}(s,T)>0$. Indeed, as argued above, charities whose ideology resembles that of violent groups are more likely to face investigations, which may result in restrictions on their activities and their fund raising ability. It is important to point out that all local charities are likely to face such restrictions, whether or not they are related to terrorist groups, since the link between terrorists and their charities is very often hard to establish. Furthermore, recall that $C^N(s,T)$ is assumed increasing and convex in *s*.

Then, assume that a local terrorist group, indexed by *A*, invests *T* to maximize the following:

$$\omega(K)(B(T)+\psi b(s)) - C^A(T,s) \qquad (17)$$

Note that (1), the utility of the terrorist-charity group described in section 3, is simply the sum of (16) and (17). That is, the group analyzed in the previous section can be interpreted as an

10 http://www.pngo.net/pngo.htm

integrated organization comprising both an armed and a charitable wing. Now, while they share the same political aspirations for their people, the terrorist group and the NGO are considered separate, independent actors.

Again, as argued at section 3, the advertising effect induced by the NGO's activity facilitates the organization of attacks, so that $C^A_{Ts}(T,s)<0$. In addition, recall that $C^A(T,s)$ is increasing and convex in *T*.

Finally, assume that both actors make their investment decisions simultaneously. Then the Nash equilibrium levels of *s* and *T* is analyzed.

The NGO's best response to any level of *T* is given by the first order condition:

$$\theta_T v'(g+s)=C^N_s(s,T) \tag{18}$$

The terrorist's best response to any level of *s* is given by:

$$\omega(K)B'(T)=C^A_T(T,s) \tag{19}$$

Lemma 1. The NGO's best response is decreasing in *T*, and the terrorist's best response is increasing in *s*.

Proof. Total differentiation of (18) with respect to *T* yields:

$$s'_N(T)=\frac{(C^N_{sT}(s,T))}{(\theta_T v''(g+s)-C^N_{ss}(s,T))} \tag{20}$$

Since *v*(.) is concave, $C^N_{ss}(s,T)>0$, and $C^N_{sT}(s,T)>0$, (20) has a negative sign.

Similarly, totally differentiating (19) with respect to *s* yields:

$$T'_A(s)=\frac{(C^A_{TS}(T,s))}{(\omega(K)B''(T)-C^A_{TT}(T,s))} \tag{21}$$

Since *B*(.) is concave, $C^A_{TT}(T,s)>0$, and $C^A_{Ts}(T,s)<0$, (19) has a positive sign. □

Note that lemma 1 also holds in the special case of constant marginal costs investigated at

section 3.2, i.e. with $C_{ss}^{N}=0$ and $C_{TT}^{A}=0$.

The Nash equilibrium is represented on figure 3.

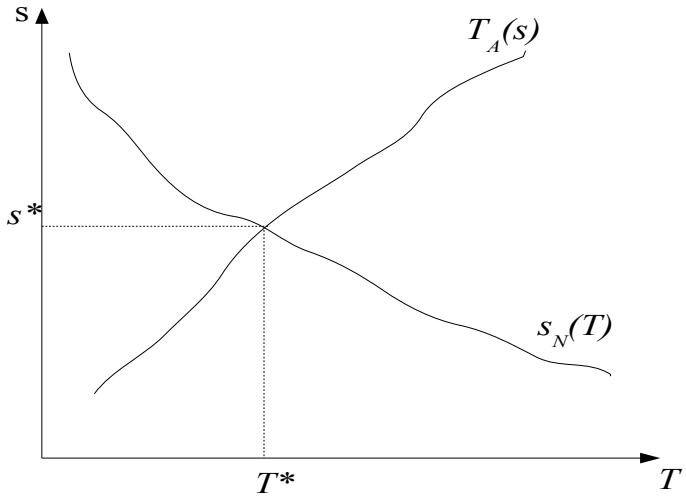

Figure 3: Nash equilibrium levels of NGO and terrorist activity.

The next section investigates potential effects of international aid received by the local NGO on the Nash equilibrium levels of terrorism and charity.

4.2. *Potential effects of international aid*

For the sake of simplicity, international aid is modelled as a downward shift of the NGO's cost function. Consequently, when the NGO receives aid, its best response function, depicted on figure 3, shifts upward.

International aid becomes a hot topic when discussed in contexts where the interactions between terrorist groups and local NGOs are hard to assess. For example, since the end of 2002, the United States Agency for International Development (USAID) "requires Palestinian NGOs receiving US aid to sign a pledge that they do not 'provide material support or resources to any individual or entity that advocates, plans, sponsors, engages in, or has engaged in terrorist activity'."[11] Members of the Palestinian NGO network have refused such a procedure, arguing that this is too broad a definition of support to terrorism.

11 Ibid.

The present model assumes that the local NGO's activity implies some degree of advertising for goals shared by the terrorist group, and this may or may not translate to increasing voluntary involvement in terrorist activities, independently of the NGO's will. Therefore, the advertising effect is assumed to be driven by the convergence of both actors' political views, without any intention of the NGO to make people become terrorists.

As explained above, here, international aid to the local NGO is studied as a comparative statics exercise using figure 3. When the NGO receives aid, its best response curve shifts upward so that, at any level of T, the NGO increases its investment in charity. All things being equal, this raises the equilibrium values of both s and T. This undesirable positive effect on attacks T can be mitigated by an increase in military assistance in order to lower $\omega(K)$, thereby shifting the terrorists' best response function downward.

Furthermore, using the results of the previous section, an increase in s may increase or decrease popular support (b) for terrorism. If the advertising effect dominates (i.e. if $b^{e\prime}(s)>0$), then b increases, but it decreases if the opportunity cost dominates. Then, note that aid leads to an increase in the overall impact of the group (i.e. direct attacks T plus popular support $b(s)$) unambiguously only if $b^{e\prime}(s)>0$. In the case where $b^{e\prime}(s)<0$, the increase in T may be outweighed by the decrease in b.

Distributing aid directly to the government in return for increased social expenditures g would increase the opportunity cost of supporting terrorism. However, since local NGOs often have more efficient ways to reach the population, they cannot be ignored by aid disbursements.

Finally, one may argue that aid can be used for “counter-advertising” purposes. The example of American aid through the World Food Program mentionned in section 2 certainly fits with this principle. In the present model, a simple way to capture such effects is to make the value of one's contribution to terrorism a decreasing function of the aid received, that is, $u(b,a)$ with $\partial u(b,a)/\partial a<0$. Such aid would make participation less attractive. The question of whether this

kind of policy is likely to work lies outside the scope of this paper, since a proper treatment of the issue would have to deal with other factors, such as the role political neutrality plays in international NGOs' activities.

4.3. *Back to an integrated terrorist-charity organization*

Sections 4.1 and 4.2 have investigated the case where the terrorist group and the NGO are independent bodies, but that affect each other's activity through their respective cost functions. The key assumptions were that terrorist activity increases the cost of NGO operations, while charity work by the NGO has an advertising effect that may benefit the terrorist group by increasing its support base but also by reducing its costs. The idea behind the latter effect is that the influence of an NGO which shares the values and goals that terrorists claim to fight for creates a more favorable environment for the group to organize their attacks.

The present section goes back to the case of an integrated terrorist-charity organization, as in section 3, in order to compare the investments T and s of the integrated structure with those of the independent actors described in sections 4.1 and 4.2. Therefore, the following is a kind of welfare analysis which aims to derive the levels of charity and terrorism that maximize the joint surplus of the terrorist and the NGO, and to compare them with their Nash equilibrium levels given by (18) and (19).

The integrated terrorist-charity chooses s and T to maximize its objective function, given by equation (1). In the following analysis, it will be useful to keep in mind the following properties of the functions entering the organization's objective, stated at the beginning of section 3. First, recall that $C^N(s,T)$ is increasing and convex in s, and $C^A(T,s)$ is increasing and convex in T. Moreover, $C^N_T(s,T)>0$, $C^A_s(T,s)<0$, which is in line with the intuition developed previously, namely, the fact that terrorist attacks increase the cost of NGO activities and charity work reduces the cost of terrorist operations. In addition, $C^N_{TT}(s,T)>0$ and $C^A_{ss}(T,s)>0$ further ensure the convexity of the cost functions. Finally, recall that $v(\ )$ and $B(\ )$ are increasing and concave, that

$b'(s)$ may be either positive or negative depending on whether the advertising effect dominates the opportunity cost effect, and that $b''(\ )<0$.

Then, focusing on the interior solution, the first order conditions for s and T are given by:

$$\theta_T v'(g+s)=C_s^N(s,T)+C_s^A(T,s)-\omega(K)\psi b'(s) \tag{22}$$

$$\omega(K)B'(T)=C_T^N(s,T)+C_T^A(T,s) \tag{23}$$

Comparing (22) with (18), since $C_s^A(T,s)<0$, the comparision between s in the integrated and disintegrated cases depends on the sign of $b'(s)$. If the advertising effect dominates, $b'(s)>0$, and then, more charity is provided by the integrated organization than by the NGO alone. Indeed, the fact that b is increasing in s is a positive externality of NGO activity on the terrorist objective. A separate NGO entity only provides charity based on its altruistic motivation, but does not internalize its impact on popular support for the cause.

However, if the advertising effect is dominated by the opportunity cost effect, more charity leads to a decrease in active popular support b (i.e. $b'(s)<0$). This negative effect of charity may or may not offset the fact that this activity also lowers the cost of any given level of attacks, that is, the fact that $C_s^A(T,s)<0$. In this ambiguous case, the integrated organization provides more charity compared to the Nash equilibrium if the following condition is verified:

$$C_s^A(T,s)-\omega(K)\psi b'(s)<0 \tag{24}$$

Indeed, if it holds, the benefit in terms of a reduction in the cost of terrorist attacks outweighs the decrease in popular support. This is more likely if ψ is small, that is, if the group cares little about popular support.

What about the level of terrorist attacks T? Comparing (23) and (19), given that $C_T^N(s,T)>0$ and B is concave, the integrated group always performs fewer attacks. This is because terrorist attacks increase the cost of NGO activities, and this adverse effect is internalized when both

components (charity and terrorist) are integrated.

Thus, the above analysis suggests that when local NGOs clearly state their political values, the perpetration of terrorist acts by independent but like-minded violent groups may affect their activities negatively. The model has not considered the role of contributions by politically neutral local NGOs in such contexts, and this is an interesting avenue for future research.

5. Conclusion

Violent groups, such as terrorist and rebel organizations, sometimes invest significant resources in social work, notably in the form of charities and NGOs. For example, the Palestinian Hamas is reported to devote more than 95 percent of its budget to social welfare programs. Recent papers have investigated the case of extremist groups that contribute to local public goods. Berman, (2003) and Berman and Laitin (2005) model these organizations as clubs which provide social welfare only to their members. Their analysis helps to understand how these groups manage to enforce apparently irrationnal levels of sacrifice among their members. The present paper is a useful complement to this emerging literature. By modelling a terrorist group's charities as an advertising device, the analysis explains how different types of organizations arise in equilibrium, depending on exogenous levels of government policies. Some may specialize in terrorism, others may be of a "hybrid" type, mixing terrorism and charity. Some do not even engage in terrorism, and focus entirely on public good provision. Then, it is acknowledged that in many cases, local NGOs share the political values of violent organizations without necessarily being related to them. This allows a fully terrorist group to benefit from some free advertising for its cause. It is assumed that terrorist activity increases the cost of NGO operations, while charity work by the NGO has an advertising effect that may benefit the terrorist group by increasing its support base but also by reducing its costs.

The Nash equilibrium levels of charity and terrorism chosen by the separate NGO and terrorist entities are compared with those invested by an integrated terrorist-charity organization.

Since the integrated terrorist-charity internalizes the additional benefits of charity in terms of popular support and reduced cost of attacks, it may have more NGO activity than an independent NGO.

Furthermore, the Nash equilibrium level of terrorist attacks by an independent terrorist group is always higher than that of an integrated terrorist-charity because the integrated organization internalizes the negative impact of terrorist activity on NGO operations. This result suggests that recent requirements imposed by the US and the EU, that local NGOs commit to be unrelated to terrorist groups, might result in more terrorism rather than less.

References

Azam, J.-P. (2006). On Thugs and Heroes: Why Warlords Victimize Their Own Civilians?, *Economics and Governance*, vol. 7(1): 53-73.

Azam, J.-P. (2005a). Suicide Bombing as Inter-Generational Investment, *Public Choice* 122(1): 177-198.

Azam, J.-P. (2005b). How to Curb "High Quality" Terrorism? A Case for Boosting Aid, working paper, University of Toulouse, mimeo.

Azam, J.P., and Mesnard, A. (2002). Civil War and The Social Contract, *Public Choice*, 105 (3): 455-475.

Barro, R. (1990). Government Spending in a Simple Model of Endogenous Growth, *Journal of Political Economy*, 98(5): S103-S126.

Becker, G. S. and Murphy, K. M. (1993). A Simple Model of Advertising, *Quaterly Journal of Economics*, vol. 108 (4): 941-964.

Berman, E. (2003). "Hamas, Taliban and the Jewish Underground: An Economist's View of Radical Religious Militias", NBER WP 10004.

Berman, E., and Laitin, D. D. (2005). Hard Targets: Theory and Evidence on Suicide Attacks, NBER WP 11740.

Besley, T., and Gathak, M. (2001). Government versus Private Ownership of Public Goods, *The Quarterly Journal of Economics* 116 (4): 1343-72.

Bueno de Mesquita, E. (2005). The Quality of Terror, *American Journal of Political Science* 49(3): 515-530.

Bueno de Mesquita, E., and Dickinson, E. S. (2005). The Propaganda of the Deed: Terrorism, Counterterrorism, and Mobilization, working paper, Department of Political Science, Washington University.

Faria, J. R., and Ace M., D. G. (2005). Terror Support and Recruitment, American Economic Association Annual Meeting Papers, available at http://www.aeaweb.org/annual_mtg_papers/2005papers.html.

Fawwaz, M. (2004). Action et Idéologie dans les Services: ONG Islamiques dans la Banlieue Sud de Beyrouth, in: Ben Néfissa, Sarah, Abd al-Fattah, Nabil, Hanafi, Sari, and Milani Carlos (2004), *ONG et Gouvernance dans le Monde Arabe*, Cedej (Le Caire) et Karthala (Paris).

Ferrero, M. (2004). Revolution or Reform? Socialism's Dilemma as a Rational Choice Problem, *Homo Oeconomicus*, 21(2): 251-282.

Ghandour, A.R. (2002). *Jihad Humanitaire: Enquête sur les ONG Islamiques*, Flammarion (Paris).

Glazer, A., and Konrad, K. A. (1996). A Signaling Explanation for Charity, *American Economic Review* 86 (4), 1019-1028.

Guevara, E. C. (2001). *Textes Militaires*, La découverte (Paris).

Hopkins, R. and Scott, C.D. (1999). The Economics of Non-Governmental Organizations, The Development Economics Discussion Paper Series, The Suntory Center, London School of Economics.

Jack, W. (2001). Public Policy towards Non-Governmental Organizations in Developing Countries,

working paper, Department of Economics, Georgetown University.

Krueger, A. B. and Maleckova, J. (2003). Education, Poverty, Political Violence, and Terrorism: Is there a Causal Connection? *Journal of Economic Perspectives* 17 (4): 119-144.

Levitt, M. A. (2003). Hamas Blood Money: Mixing Good Works and Terror is No Formula for Peace, available at http://www.ict.org.il.

Levitt, M. A. (2002). The Network of Terrorist Financing, available at http://www.ict.org.il.

Rose-Ackerman, S. (1998). Altruism, Nonprofits, and Economic Theory, *Journal of Economic Literature* 34: 701-728.