Do Humanitarian Interventions Help Humanity? An Economic Analysis of the 'Responsibility to Protect' Norm in Intrastate Conflicts

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ABSTRACT

In this paper, we present a two-stage game of intrastate armed confrontation and third-party humanitarian intervention to examine political, human, and economic implications of the 'responsibility to protect' norm for reducing the human cost of conflict. At stage one, a third party optimally determines the provisions of humanitarian intervention resources to a state and its rebel group. These provisions reduce the effectiveness of arms in inflicting casualties and injuries upon members of each combatting party (and affiliated civilians of each party). At stage two, the state and the rebel group decide upon private allocations of armaments in the contest for political dominance. We identify a combatant moral hazard effect associated with humanitarian intervention. However, we find that a completely biased (unbiased) humanitarian intervention unambiguously generates a reduction in the human cost of conflict.

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1. Introduction

In the aftermath of ineffective international responses to genocidal conflicts in Somalia, Bosnia, and Rwanda in the early 1990s, many scholars and policymakers argued that a new norm of 'humanitarian intervention' – defined as 'military intervention with the goal of protecting the lives and welfare of foreign citizens' (Finnemore 1996, p. 154) – was needed to protect people from massive violence within their own state. After years of debate and negotiation, United Nations members unanimously adopted a revised version of this norm, called the 'responsibility to protect', at the United Nations World Summit (United Nations, 2005).[4] This principle was intended to challenge the presumption of the inviolability of state sovereignty in international relations and create a new systemic context in which humanitarian intervention could more easily be justified and implemented. It has been frequently invoked by observers and policy-makers in recent years during debates about conflict intervention in Libya, Cote d'Ivoire, Syria, South Sudan, and Central African Republic.

However, analysts and scholars have expressed concern that a general, international, norm-legitimating policy of humanitarian intervention might create a problem of moral hazard, whereby rebels intensify (human costs of) conflict given the protections afforded by humanitarian intervention. A basic assumption motivating humanitarian intervention is that the state is the initiator of massive violence and that it is this state-sponsored violence that must be deterred or deflected (see, e.g., Nzelibe, 2008). However, internal conflict may also be initiated by rebel groups. A perverse consequence of the norm of humanitarian intervention may be that it 'fosters rebellion by lowering its expected cost and raising its likelihood of success'. (Kuperman, 2009, p. 36; see also Crawford and Kuperman, 2006; Auger, 2012).

The existing literature clearly identifies the theoretical nature of this moral hazard problem but does not resolve its implication for the overall (qualitative) effectiveness of humanitarian intervention. Rauchhaus (2009) concludes that in the context of moral hazard being heuristically useful, more systematic assessment is warranted (p. 882). An early effort to theoretically model the moral hazard problem finds that 'the anticipated presence of an intervener can indeed generate moral hazard and lead a group to resort to greater violence' (Rowlands and Carment, 1998, p. 282). Kuperman (2009) suggests that intervention should be avoided unless the state resorts to genocidal levels of violence against its own population, thereby removing the likelihood of rapid escalation by either party (Kuperman, 2008a, p. 72-74; also Kuperman, 2008b). Rauchhaus (2009) suggests that third parties carefully monitor the motives of leaders of non-state actors as a form of 'due diligence' before deciding to intervene (pp. 880-881). Crawford and Kuperman (2006) question whether humanitarian intervention policies 'backfire' in certain conflicts (e.g., Kosovo) so as to raise the human cost of conflict.

Given the ongoing discussion as to the proper role and scope of humanitarian intervention, it is of pressing importance to determine the policy's overall effect. Herein, we consider—within a contest-theoretic model—the effect of humanitarian intervention into an active conflict (or in the shadow of conflict) between contending parties. Contest theory has proven a valuable tool in the analysis of conflict and rent-seeking (see, e.g., Hirshleifer, 1991; Anderton and Carter, 2009; Boudreau and Shunda, 2012; Chang, et al., 2015). However, it appears that this valuable tool has not systematically been applied to address the effect of humanitarian intervention. In the present paper, we examine how humanitarian intervention

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[4]See Evans (2008) or Auger (2008, 2012) for a discussion of the evolution of this norm.

affects the total human cost of conflict. Whereas the policy's direct effect is to lower the unit human cost of conflict (intensity), the policy's indirect (moral hazard) effect is to increase conflict intensity. If the moral hazard effect dominates the direct effect, then it would be the case that humanitarian intervention actually *increases* the human cost of conflict.

The literature regarding the *overall* effect of humanitarian intervention is scant. In an important recent work, Kydd and Straus (2013) find within a theoretical model that humanitarian intervention can lower the human cost of conflict provided that the third party is sufficiently strong and sufficiently neutral. Herein, we consider the effect upon said cost of a) an unbiased humanitarian intervener and b) a completely biased humanitarian intervener. Given the biased nature of the 'responsibility to protect' norm with respect to civil conflict, such an analysis provides a pressing extension to the seminal work of Kydd and Straus. As in Kydd and Straus, we demonstrate evidence of moral hazard within a standard contest model setting. Contrary to their results, however, we find that a completely *biased* humanitarian intervention unambiguously effects a reduction in the human cost of conflict. This result suggests that biased humanitarian intervention is, on net, productive vis-à-vis its objective.

We consider a two-stage game. In the first stage, a third party optimally determines the provisions of humanitarian intervention resources to a state and its rebel group, which reduce the intensity (per arm) of casualties and injuries inflicted on the two contending parties. Given third-party humanitarian intervention efforts, the state and the rebel group in the first-stage of the game decide on their allocations of resources to fighting for political dominance.

The remainder of the paper is organized as follows. Section 2 lays out a contest model of armed confrontation between a government and a challenging rebel group, where each party receives (a potentially distinct level of) protection from a third party for reducing causalities and injuries. In this section, we examine how the equilibrium outcome is affected by humanitarian intervention efforts and discuss the associated moral hazard effect of intervention. In Section 3, we analyze the endogeneity of such humanitarian intervention efforts by a third party. Some policy implications of the analysis are discussed in Section 4, while concluding remarks can be found in Section 5.

2. A Model of Biased Humanitarian Intervention in Intrastate Conflict

Several elements constitute the human cost of conflict. The most apparent and direct elements are casualties and serious injuries to civilians and soldiers. As conflict becomes more intense, individuals engage in (costly) self-protective activities such as not attending school or not taking a walk on a pleasant day. Such losses of opportunity contribute to the human cost of conflict. We consider a sub-state conflict region in which two groups, a state and rebel group, contest for territorial rule. Each group consists of soldiers and affiliated civilians. Within a strict form of ethnic conflict, for example, soldier and civilian group formation is based upon ethnicity. Alternatively, group formation can be a function of sentiment. During the Rwandan Civil War, for example, an extremist Hutu group killed hundreds of thousands of Tutsis and many moderate Hutus who were unwilling to participate in the genocide. Once formed, each group makes conflict-allocative decisions collectively (i.e., as a unitary actor) as per a standard contest model of armed conflict. Given that the responsibility to protect norm is disproportionately intended to protect civilians in the case of a) state aggression or b) failure of the state to provide adequate civilian protections (Kuperman, 2009, p.36; Crawford and Kuperman, 2006), we presently model humanitarian intervention by an outside (conflict-managing) party as biased or qualitatively pro-rebel. Specifically, the present intervention policy reduces unit destructiveness (cost) of identified state arming (aggression), while disproportionately ignoring (less identifiable) rebel arming.

We consider two parties—state (s) and rebel (r)—in the shadow of conflict. The probability of victory for each party is represented by a canonical 'contest success function' (CSF) that reflects the technology of conflict (see, e.g., Tullock, 1980; Hirshleifer, 1989).

$$P_s = \frac{G_s}{(G_s + G_r)} \text{ and } P_r = \frac{G_r}{(G_s + G_r)} \text{ for } G_s + G_r > 0; \tag{1a}$$

$$P_s = 1 \text{ and } P_r = 0 \text{ for } G_s + G_r = 0. \tag{1b}$$

where $G_s (\geq 0)$ is conflict-related arming by the state and $G_r (\geq 0)$ is conflict-related arming by the rebel. The CSFs represent the likelihood of state (rebel) victory in conflict as a function of arms allocations. For analytical simplicity, we assume that the unit cost of arming to each party is constant at $c (> 0)$. In the absence of conflict-related arming by either party, the state is taken to retain political control.

In the presence of armed confrontation such that both parties incur arming costs of conflict (i.e., $G_s > 0$ and $G_r > 0$), we further consider that there are human costs of conflict. We assume that as the overall intensity of armed confrontation, defined as $I = (G_s + G_r)$, rises, each side expects to suffer more casualties and serious injuries. The human costs of conflict to the state and the rebel, respectively, are taken to be an increasing function of the conflict intensity as follows:

$$H_g = \rho_1 h \cdot (G_s + G_r) \text{ and } H_r = \rho_2 h \cdot (G_s + G_r) \tag{2}$$

where h represents marginal human cost of conflict escalation for a given party (e.g., additional casualties or serious injuries for soldiers and civilians within the group). The parameter $\rho_i (0 \leq \rho_i \leq 1)$ represents the proportion of causalities and injuries that would be *reduced* for party i $(i = s, r)$ given humanitarian intervention efforts. The parameter ρ_i can be treated as a policy parameter or instrument that is set by the conflict manager according to budgetary and international political factors. That is, we use ρ_i to capture the degree of humanitarian intervention efforts by a third party (such as the United Nations).[5] A decrease in ρ_i, which reduces the proportion of causalities and injuries inflicted on party i, implies an increase in the degree of third party humanitarian intervention efforts. When intervention is solely pro-state, we have $1 > \rho_1 > 0$ and $\rho_2 = 1$. When intervention is solely pro-rebel, we have $\rho_1 = 1$ and $1 > \rho_2 > 0$.[6] We next discuss the objective function of each party in the shadow of conflict.

Given the contest success functions in (1) and the associated human costs of conflict in (2), the objective functions of the state and the rebel group are given, respectively, as

$$\pi_s = \frac{G_s}{(G_s + G_r)} V - c G_s - \rho_1 h \cdot (G_s + G_r), \tag{3a}$$

$$\pi_r = \frac{G_r}{G_s + G_r} V - c G_r - \rho_2 h \cdot (G_s + G_r), \tag{3b}$$

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[5] For studies on how the strategic involvement of a third country affects the equilibrium outcome of an intrastate conflict, see, for example, Carment and Rowlands (1998), Amegashie and Kutsoati (2007), Chang, et al. (2007), Chang and Sanders (2009), and Sanders and Walia (2014). The present study is an extension of the analytical framework in Chang and Sanders (2009).

[6] For the case in which there is no humanitarian assistance to either the state or its rebels, we have $\rho_1 = \rho_2 = 1$.

where V represents value of conflict victory (state rule) and c is direct, unit cost of conflict-related arming (i.e., payments toward and opportunity cost of conflict arming). The first-order conditions (FOCs) for the state and the rebel are given, respectively, as

$$\frac{G_r}{(G_s + G_r)^2} V = c + \rho_1 h, \tag{4a}$$

$$\frac{G_s}{(G_s + G_r)^2} V = c + \rho_2 h. \tag{4b}$$

Dividing (4a) by (4b) yields

$$\frac{G_r}{G_s} = \frac{c + \rho_1 h}{c + \rho_2 h}$$

which implies that

$$G_r = \frac{c + \rho_1 h}{c + \rho_2 h} G_s. \tag{5}$$

It follows from (5) that

$$G_s + G_r = G_s + \frac{c + \rho_1 h}{c + \rho_2 h} G_s = \frac{2c + (\rho_1 + \rho_2)h}{c + \rho_2 h} G_s. \tag{6}$$

Substituting (5) and (6) back into the FOC in (4a), we have

$$\frac{\dfrac{c + \rho_1 h}{c + \rho_2 h} G_s}{\left[\dfrac{2c + (\rho_1 + \rho_2)h}{c + \rho_2 h}\right]^2 G_s^2} V = c + \rho_1 h$$

Solving for the optimal level of conflict-related arming by the state yields

$$G_s^* = \frac{c + \rho_2 h}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V. \tag{7}$$

Substituting (7) into (5) yields the optimal level of conflict-related arming by the rebel as

$$G_r^* = \frac{c + \rho_1 h}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V. \tag{8}$$

Making use of (1), (7), and (8), we calculate the probabilities of victory by the state and the rebel group as follows:

$$P_s^* = \frac{c + \rho_2 h}{2c + (\rho_1 + \rho_2)h} \text{ and } P_r^* = \frac{c + \rho_1 h}{2c + (\rho_1 + \rho_2)h}. \tag{9a}$$

It is easy to verify from (9a) that

$$\frac{\partial P_s^*}{\partial \rho_1} = -\frac{(c + \rho_2 h)h}{[2c + (\rho_1 + \rho_2)h]^2} < 0, \quad \frac{\partial P_s^*}{\partial \rho_2} = \frac{(c + \rho_1 h)h}{[2c + (\rho_1 + \rho_2)h]^2} > 0, \tag{9b}$$

$$\frac{\partial P_r^*}{\partial \rho_1} = \frac{(c + \rho_2 h)h}{[2c + (\rho_1 + \rho_2)h]^2} > 0, \quad \frac{\partial P_r^*}{\partial \rho_2} = -\frac{(c + \rho_1 h)h}{[2c + (\rho_1 + \rho_2)h]^2} < 0. \tag{9c}$$

An increase in third party humanitarian intervention efforts for party i is captured by a decrease in ρ_i which unambiguously leads to an increase in p_i^* and a decrease in p_j^*, for $i, j = r, s$, and $i \neq j$. The results in (9b) and (9c) thus permit us to establish the first proposition:

PROPOSITION 1. *Other things being equal, pro-rebel humanitarian intervention unambiguously **raises** the likelihood of conflict victory for the rebels and reduces that of the conflict victory for the state. Symmetrically, pro-state humanitarian intervention unambiguously **raises** the likelihood of conflict victory for the state and reduces that of the conflict victory for the rebels.*

As cited in the introduction, Kuperman (2009, p. 36) states that humanitarian intervention 'fosters rebellion by lowering its expected cost and raising its likelihood of success'. In a standard contest setting, we find that biased pro-rebel humanitarian intervention does, indeed, increase equilibrium likelihood of rebel victory via a (policy-induced) reduction in unit human cost of conflict. This effect represents one channel by which the moral hazard problem of humanitarian intervention can arise. We now seek direct evidence of a moral hazard problem. Namely, we consider whether an increase in level of humanitarian intervention, *ceteris paribus*, increases the intensity of rebel arming.

According to the conflict-related arming optimally chosen by the state (see equation 7), we have the following comparative-static derivatives:

$$\frac{\partial G_s^*}{\partial c} = -\frac{(2c - h\rho_1 + 3h\rho_2)}{[2c + (\rho_1 + \rho_2)h]^3} V < 0 \text{ if } 0 \leq \rho_1 < \frac{2c}{h} + 3\rho_2.$$

$$\frac{\partial G_s^*}{\partial h} = -\frac{2\rho_1 c + (\rho_1 + \rho_2)\rho_2 h}{[2c + (\rho_1 + \rho_2)h]^3} V < 0;$$

$$\frac{\partial G_s^*}{\partial \rho_1} = -\frac{2(c + \rho_2 h)h}{[2c + (\rho_1 + \rho_2)h]^3} V < 0.$$

The implications of the derivatives are as follows. (i) An increase in the unit cost of conflict-related arming lowers the state's arming level if the state receives a greater proportion of humanitarian intervention efforts than the rebel. (ii) An increase in marginal human cost of conflict escalation unambiguously lowers the state's arming level. (iii) Other things being equal, the state increases its arming level if the proportion of humanitarian intervention efforts that it receives increases.

Pro-rebel humanitarian intervention on the state's arming level cannot be determined unambiguously, however.

$$\frac{\partial G_s^*}{\partial \rho_2} = \frac{(\rho_1 - \rho_2)h^2}{[2c + (\rho_1 + \rho_2)h]^3} V < 0 \text{ if } \rho_1 = 1 \text{ and } 1 > \rho_2 \geq 0;$$

$$\frac{\partial G_s^*}{\partial \rho_2} = \frac{(\rho_1 - \rho_2)h^2}{[2c + (\rho_1 + \rho_2)h]^3} V < 0 \text{ if } 1 \geq \rho_2 > \rho_1 \geq 0.$$

Similarly, based on the conflict-related arming optimally chosen by the rebel, we have the following comparative-state derivatives and implications:

$$\frac{\partial G_r^*}{\partial c} = -\frac{(2c+3h\rho_1-h\rho_2)}{[2c+(\rho_1+\rho_2)h]^3}V < 0 \text{ if } 0 \le \rho_2 < \frac{2c}{h}+3\rho_1.$$

An increase in the unit cost of conflict-related arming may *increase* the rebel's arming level if the rebel receives a greater proportion of humanitarian intervention efforts than the state.

$$\frac{\partial G_r^*}{\partial h} = -\frac{2\rho_1 c + \rho_1(\rho_1+\rho_2)h}{[2c+(\rho_1+\rho_2)h]^3}V < 0;$$

$$\frac{\partial G_r^*}{\partial \rho_1} = \frac{(\rho_2-\rho_1)h^2}{[2c+(\rho_1+\rho_2)h]^3}V > 0 \text{ if } 1 \ge \rho_2 > \rho_1 \ge 0;$$

$$\frac{\partial G_r^*}{\partial \rho_1} = \frac{(\rho_2-\rho_1)h^2}{[2c+(\rho_1+\rho_2)h]^3}V < 0 \text{ if } 1 \ge \rho_1 > \rho_2 \ge 0;$$

$$\frac{\partial G_r^*}{\partial \rho_2} = -\frac{2(c+\rho_1 h)h}{[2c+(\rho_1+\rho_2)h]^3}V < 0.$$

Other things being equal, the rebel reduces its arming level if the proportion of humanitarian intervention efforts that it receives increases.

PROPOSITION 2. *Pro-rebel humanitarian intervention raises the arms allocation of rebels. Symmetrically, pro-state humanitarian intervention raises the arms allocation of the state. Within a standard contest model of conflict, the moral hazard effect of humanitarian intervention exists, regardless of whether the intervention is pro-rebel or pro-state.*

In equilibrium, the intensity of armed conflict is $I^* = G_s^* + G_r^*$, where G_s^* and G_r^* are the optimal levels of arming by the state and the rebels as determined in (7) and (8). It follows that

$$I^* = G_s^* + G_r^* = \frac{1}{[2c+(\rho_1+\rho_2)h]}V. \tag{10a}$$

It is easy to verify from (10) that

$$\frac{\partial I^*}{\partial c} < 0, \quad \frac{\partial I^*}{\partial h} < 0, \text{ and } \frac{\partial I^*}{\partial \rho_i} < 0. \tag{10b}$$

These results lead to the following proposition:

PROPOSITION 3. *The equilibrium intensity of the armed conflict, $I^* = G_s^* + G_r^*$, **decreases** when (i) the unit weapon cost increases or when (ii) the marginal destruction to human cost increases. Nevertheless, an increase in the level of the humanitarian intervention (to either the government or the rebel group) unambiguously **raises** the overall intensity of the conflict.*

The moral hazard effect of pro-rebel humanitarian intervention dominates the (potential) marginal deterrence effect upon state arming such that the overall level of conflict arming rises in intervention level.

The direct effect of biased humanitarian intervention is to lower the unit human cost to the rebel party of conflict arms allocations. The indirect effect of said intervention policy is to *increase* the number of arms units. It remains unresolved within the analysis whether the total human cost of conflict increases or decreases given such an intervention policy. To

address this question, we first examine how third-party humanitarian intervention affects human costs of armed conflict for the state and its rebel group. It follows from (2), (7) and (8) that

$$\frac{\partial H_s^*}{\partial \rho_1} = \frac{(2c + \rho_2 h)h}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V > 0; \quad \frac{\partial H_r^*}{\partial \rho_1} = -\frac{\rho_2 h^2}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V < 0;$$

$$\frac{\partial H_s^*}{\partial \rho_2} = -\frac{\rho_1 h^2}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V < 0; \quad \frac{\partial H_r^*}{\partial \rho_2} = \frac{(2c + \rho_1 h)h}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V > 0. \quad (11)$$

For the purpose of our analysis, we define the overall human costs of armed conflict as $H = H_s + H_r$, where H_s and H_r are given in (2). In equilibrium, we have $H^* = H_s^* + H_r^* = (\rho_1 + \rho_2)h \cdot (G_s^* + G_r^*)$. Substituting $G_s^* + G_r^*$ from (10) into this equation yields

$$H^* = \frac{(\rho_1 + \rho_2)h}{\left[2c + (\rho_1 + \rho_2)h\right]} V. \quad (12a)$$

From (12a), we have the following comparative-static derivatives:

$$\frac{\partial H^*}{\partial c} = -\frac{2(\rho_1 + \rho_2)h}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V < 0, \quad (13a)$$

$$\frac{\partial H^*}{\partial h} = \frac{2c(\rho_1 + \rho_2)}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V > 0, \quad (13b)$$

$$\frac{\partial H^*}{\partial \rho_i} = \frac{2ch}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V > 0. \quad (13c)$$

The economic implications of the results in (13a)-(13c) are summarized in the following proposition.

PROPOSITION 4. *In the model of conflict between state and a rebel group we consider, the overall human costs of conflict will be lower, the higher the unit weapon cost, the lower the marginal destructiveness of arms to soldiers and civilians, the lower the level of humanitarian intervention efforts provided to either the state or the rebels.*

Results in Proposition 4 indicate that biased pro-rebel humanitarian intervention is effective in decreasing the total human cost of conflict. That is, the human cost of conflict to the rebel group declines in humanitarian intervention, whereas the state party receives no such general assurance.

Finally, it is instructive to examine how third-party humanitarian intervention efforts affect the expected payoffs of the state and the rebel group. To do so, we calculate the following derivatives:

$$\frac{\partial \pi_s^*}{\partial \rho_1} = -\frac{(4c^2 + 3c\rho_1 h + 5c\rho_2 h + 2\rho_1\rho_2 h^2 + 2\rho_2^2 h^2)h}{\left[2c + (\rho_1 + \rho_2)h\right]^3} V < 0; \quad (14a)$$

$$\frac{\partial \pi_r^*}{\partial \rho_1} = \frac{2(c + \rho_2 h)\left[c + (\rho_1 + \rho_2)h\right]}{\left[2c + (\rho_1 + \rho_2)h\right]^2} V > 0; \quad (14b)$$

$$\frac{\partial \pi_s^*}{\partial \rho_2} = \frac{2(c + \rho_1 h)\left[c + (\rho_1 + \rho_2)h\right]}{\left[2c + (\rho_1 + \rho_2)h\right]^2}V > 0; \tag{14c}$$

$$\frac{\partial \pi_r^*}{\partial \rho_2} = -\frac{(4c^2 + 5c\rho_1 h + 3c\rho_2 h + 2\rho_1\rho_2 h^2 + 2\rho_1^2 h^2)h}{\left[2c + (\rho_1 + \rho_2)h\right]^3}V < 0. \tag{14d}$$

The derivatives in (14) permit us to establish the following proposition:

PROPOSITION 5. *Other things being equal, pro-rebel humanitarian intervention raises the expected payoff of the rebels but reduces that of the state. Symmetrically, pro-state humanitarian intervention raises the expected payoff of the state but reduces that of the rebels.*

3. The Endogeneity of Third Party Humanitarian Intervention

We now examine the first stage of the intervention game at which the third party determines proportions of its intervention budgets allocated to the conflicting parties for reducing their casualties or injuries. We hypothesize that such humanitarian intervention efforts cannot completely be isolated from the potential benefits to an intervening party, regardless of which party prevails in the conflict. Denote B_i as the (monetary) value of benefit that third party derives when party $i(i = s, r)$ is in power, where $B_i \geq 0$. Examples of B_i may include the benefits that the third party obtain from the geo-political stability in the region where there is intra-state conflict.

Recall that ρ_i $(0 \leq \rho_i \leq 1)$ in our analysis is the proportion of causalities and injuries that would be *reduced* for party i due to third-party humanitarian intervention efforts, where $i = s, r$. As discussed in the previous section, the third party may choose to provide assistance to the conflicting parties disproportionally. We assume that the objective of the third party is to maximize the expected (monetary) benefits associated with the political dominance of the conflicting parties net of its humanitarian intervention efforts. Specifically, this objective function is specified as

$$\pi_3 = p_s B_s + p_r B_r - (1 - \rho_1)h \cdot (G_s + G_r) - (1 - \rho_2)h \cdot (G_s + G_r), \tag{15}$$

where p_s and p_r are the probabilities that the state and the rebel group succeed in armed confrontation (see equations 9a) and the third and fourth terms on the right-hand sides of the equation are reductions in human costs resulting from the third-party humanitarian intervention efforts (see equation 11). Note that the last two terms are costs to the third party of providing humanitarian assistance. That is, the third party decides on the optimal values of ρ_1 and ρ_2 that solve the following constrained maximization problem:

$$\text{Max } \pi_3 = \frac{c + \rho_2 h}{2c + (\rho_1 + \rho_2)h}B_1 + \frac{c + \rho_1 h}{2c + (\rho_1 + \rho_2)h}B_2 - \frac{[2 - (\rho_1 + \rho_2)]h}{\left[2c + (\rho_1 + \rho_2)h\right]}V$$

$$\text{s.t. (i) } 1 \geq \rho_1 \geq 0$$

$$\text{(ii) } 1 \geq \rho_2 \geq 0$$

The Lagrangian function of the constrained maximization problem is:

$$L = \frac{c + \rho_2 h}{2c + (\rho_1 + \rho_2)h}B_s + \frac{c + \rho_1 h}{2c + (\rho_1 + \rho_2)h}B_r - \frac{[2 - (\rho_1 + \rho_2)]h}{\left[2c + (\rho_1 + \rho_2)h\right]}V + \lambda_1(1 - \rho_1) + \lambda_2(1 - \rho_2)$$

The Kuhn-Tucker conditions for the third party are:

$$\frac{\partial L}{\partial \rho_1} = -\frac{(c+\rho_2 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_s - B_r) + \frac{2(c+h)h}{[2c+(\rho_1+\rho_2)h]^2}V - \lambda_1 \le 0; \tag{16a}$$

$$\text{If } \frac{\partial L}{\partial \rho_1} \le 0, \text{ then } \rho_1 = 0; \tag{16b}$$

$$\frac{\partial L}{\partial \rho_2} = -\frac{(c+\rho_1 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_r - B_s) + \frac{2(c+h)h}{[2c+(\rho_1+\rho_2)h]^2}V - \lambda_2 \le 0; \tag{16c}$$

$$\text{If } \frac{\partial L}{\partial \rho_2} \le 0, \text{ then } \rho_2 = 0; \tag{16d}$$

$$\frac{\partial L}{\partial \lambda_1} = (1-\rho_1) \ge 0; \text{ If } \frac{\partial L}{\partial \lambda_1} > 0, \text{ then } \lambda_1 = 0; \tag{16e}$$

$$\frac{\partial L}{\partial \lambda_2} = (1-\rho_2) \ge 0; \text{ If } \frac{\partial L}{\partial \lambda_2} > 0, \text{ then } \lambda_2 = 0. \tag{16f}$$

In what follows, we discuss several cases to allow for the possibilities of corner solutions.

Case 1: $0 < \rho_1 < 1$ and $0 < \rho_2 < 1$

It follows from (16a) and (16c) that

$$-\frac{(c+\rho_2 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_s - B_r) + \frac{2(c+h)h}{[2c+(\rho_1+\rho_2)h]^2}V = 0 \tag{17a}$$

$$-\frac{(c+\rho_1 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_r - B_s) + \frac{2(c+h)h}{[2c+(\rho_1+\rho_2)h]^2}V = 0 \tag{17b}$$

Equations (17) implies that

$$\frac{(c+\rho_2 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_s - B_r) = \frac{(c+\rho_1 h)h}{[2c+(\rho_1+\rho_2)h]^2}(B_r - B_s)$$

It is easy to verify from the above equation that there exist no interior and positive solutions for both ρ_1 and ρ_2.

Case 2: $1 > \rho_1 > 0$ and $\rho_2 = 1$

It follows from equations (16a) and (16e) that

$$\frac{\partial L}{\partial \rho_1} = -\frac{ch}{[2c+\rho_1 h]^2}(B_s - B_r) + \frac{2(c+h)h}{[2c+\rho_1 h]^2}V - \lambda_1 \le 0; \text{ If } \frac{\partial L}{\partial \rho_1} \le 0, \text{ then } \rho_1 = 0; \tag{18a}$$

$$\frac{\partial L}{\partial \lambda_1} = (1-\rho_1) \ge 0; \text{ If } \frac{\partial L}{\partial \lambda_1} > 0, \text{ then } \lambda_1 = 0. \tag{18b}$$

We have from equations (18) that

$$\frac{\partial L}{\partial \rho_1} = -\frac{ch}{[2c+\rho_1 h]^2}(B_s - B_r) + \frac{2(c+h)h}{[2c+\rho_1 h]^2}V$$

This derivative can never be less than or equal to zero when $B_r > B_s$. In other words, B_s should be greater than B_r for the existence of a positive solution for ρ_1. That is, third party humanitarian intervention assistance will not be provided to the state unless the stake that the third party places on the state is relatively higher.

Case 3: $\rho_1 = 1$ and $1 > \rho_2 > 0$

It follows from equations (16c) and (16f) that

$$\frac{\partial L}{\partial \rho_2} = -\frac{ch}{[2c+\rho_2 h]^2}(B_r - B_s) + \frac{2(c+h)h}{[2c+\rho_2 h]^2}V - \lambda_2 \le 0; \text{ If } \frac{\partial L}{\partial \rho_2} \le 0, \text{ then } \rho_2 = 0; \quad (19a)$$

$$\frac{\partial L}{\partial \lambda_2} = (1-\rho_2) \ge 0; \text{ If } \frac{\partial L}{\partial \lambda_2} > 0, \text{ then } \lambda_2 = 0. \tag{19b}$$

We have from equations (19) that

$$\frac{\partial L}{\partial \rho_2} = -\frac{ch}{[2c+\rho_2 h]^2}(B_r - B_s) + \frac{2(c+h)h}{[2c+\rho_2 h]^2}V = 0$$

This derivative can never be less than or equal to zero when $B_s > B_r$. In other words, B_r should be greater than B_s for the existence of a positive solution for ρ_2. That is, third party humanitarian intervention assistance will not be provided to the rebel party unless the stake that the third party places on the party is relatively higher.

PROPOSITION 6. *In the model of conflict between state and a rebel group where parts of overall human costs resulting from armed confrontation are reduced through humanitarian intervention by an expected-utility maximizing outside party, intervention is bilateral or biased in nature. Specifically, such third-party humanitarian intervention efforts will not be offered to the rebels (respectively, the state) unless the third party has a relatively higher stake when the rebel party (respectively, the state) is in power.*

4. Policy Implications

This analysis has some important implications for designing and implementing policies of humanitarian intervention. Traditional humanitarian intervention by the United Nations (as in the cases of Somalia, Bosnia, and Rwanda) was supposed to scrupulously neutral, with the intervention forces assisting neither the state nor the rebels. The development of the 'responsibility to protect' norm allowed third-party interveners to intervene against the wishes of the parties to the conflict, but even here the intervention was supposed to have a very specific mandate to protect civilian populations that were at risk. Third-party military intervention was not supposed to engage in broader combat or attempt to resolve the underlying sources of the conflict. Western intervention in Libya in 2011 was sharply criticized for going beyond this restrictive mandate by explicitly siding with the rebels, who eventually overthrew the Qaddafi regime.

However, our analysis suggests that scholars and policy-makers may need to rethink when and how a policy of humanitarian intervention is instituted. Specifically, there are three policy-relevant lessons that can be derived from this analysis: states should act quickly and firmly to limit the quantity and quality of arms available to potential combatants; if conflict

begins, states should intervene strongly and unambiguously on one side of the conflict; and the international community should eschew a declaratory policy of 'responsibility to protect' if members of the global community are unwilling to act on the first two lessons.

Proposition 4 establishes that the human costs of conflict will be lower if the cost of acquiring weapons is high and access to weapons (especially more advanced weapons) is difficult. This does not mean that horrific killing will be prevented by this method alone: the genocide in Rwanda was conducted with small arms and machetes. But it does mean that the ability of combatants to kill large numbers of people may be slowed. Equally important for this analysis, limiting the arming of the combatants will reduce the costs to, and possibly increase the effectiveness of, a third-party humanitarian intervention, since the local parties are likely to be overmatched by the weaponry of the intervention force. As scholars working in the area of Rwandan genocide have pointed out, if the international community had acted in 1994, the relatively weak Hutu militias may have been defeated or dissuaded at a low cost to the interveners, and hundreds of thousands of lives saved. Therefore, third parties should adopt stricter policies concerning the transfer of weapons to potential conflict zones, limiting such transfers through the policies of individual states and through multilateral measures (such as U.N. Security Council resolutions), and stepping up efforts to reduce illicit trafficking of arms.

The model used in this analysis also indicates that the human cost of conflict will be lower when a humanitarian intervention decisively helps one party to defeat the other, thereby bringing the conflict to a rapid end. From this perspective, Western action in Libya was not necessarily wrong, but incomplete: decisive support brought the initial conflict to an end within months. The failure of the Libyan intervention was the unwillingness of the third-parties (primarily the United States, Britain and France) to follow the military victory with the political, economic and security resources necessary to complete the transition to a new, stable Libyan state. This lesson is also reinforced by the finding that states are likely to invest the resources for a decisive intervention only when the leaders of those states see a clear benefit to themselves; a general norm (such as the responsibility to protect) that argues that humanitarian intervention should not be undertaken for self-interested purposes is morally laudable, but it may not be supported by those with the means to actually end the fighting. Of course, this proposition also leaves some important political and ethical questions to be addressed: What happens when no third-party sees an advantage in intervening (such as Rwanda or perhaps the current case of ethnic cleansing of the Rohingya in Myanmar)? Should third-parties help a government suppress of rebellion in order to restore an oppressive peace (as the Russians are doing in Syria)? Is self-interested intervention (even to end a genocidal conflict) much different from old-fashioned imperialism?

Finally, this analysis suggests that there is a moral hazard effect when a norm of humanitarian intervention exists (Proposition 2), and that the moral hazard effect may be more powerful than any deterrent effect that the humanitarian intervention norm may have on the parties to the conflict and their efforts to acquire arms. Therefore, the very existence of a general norm such as the responsibility to protect is more likely to increase the frequency and intensity of conflict; *only* if third-parties limit the availability of arms and actually intervene to bring the conflict to a rapid close will a policy of humanitarian intervention achieve the goal of reducing the human costs of conflict. In the absence of that commitment, it may be better not to proclaim a general norm that may provide false hope to endangered populations while providing incentives to potential combatants to take up arms.

5. Conclusion

In this paper, we have examined the endogenous nature of biased third-party interventions and the effect of humanitarian intervention under the 'responsibility to protect'

norm. The model analysis confirms the moral hazard effect of humanitarian intervention within a contest model of conflict. This effect contains multiple dimensions, including an increased likelihood of conflict victory and an increased conflict-related arming intensity for the rebel party. Despite the moral hazard effect of humanitarian intervention, we find that the direct effect of the intervention policy (i.e., a reduction in the unit human cost of conflict to the rebel party) dominates such that humanitarian intervention unambiguously decreases total human cost of conflict. Biased, humanitarian intervention is qualitatively effective in reducing the total human cost of conflict. Using a similar human cost accounting framework as presented herein, future studies might consider the humanitarian effect of other forms of economic or geopolitical conflict interventions.

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