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Paradise is a Bazaar? Greed, Creed, Grievance and Governance

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Abstract

This study examines the relative merits of grievance-based explanations of civil conflict that stress 'Malthusian crises' and 'creed-related,' civilizational clashes against competing propositions of greed- and governance-related explanations. The results from maximum-likelihood analyses on approximately 139 countries over the entire post-Cold War period find little support for Malthusian propositions. Abundant mineral wealth makes countries highly unstable, whereas scarcity of renewable resources is largely unrelated to civil conflict. There is some evidence suggesting that Malthusian crises are likely to be man made. Ethnicity is related to conflict when society is moderately homogenous and safer if highly plural. Large populations of Christians and Muslims within one society make countries remarkably safer, contrary to popular beliefs that ancient hatreds and Islamic militarism drive conflict. Trade to GDP (openness) is also strongly associated with peace.

Keywords: eco-violence, competition over resource rents, ethnic conflict.

JEL classification: O13, O19, Q32.

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> The fact is that the greatest crimes are caused by excess and not by necessity. Men do not become tyrants in order that they may not suffer cold. Aristotle. *Politics*.[1]

Introduction

The collapse of the Cold War has intensified the search for appropriate theoretical models for explaining what many suggest is a new environment of civil violence (Snow 1996). Some popular explanations see creeping ecological and demographic pressure as the 'causal mechanism' of many of the civil wars, blaming 'environmental scarcity' as a driving force behind these conflicts (Homer-Dixon 1999; Schwartz, Deligiannis, and Homer-Dixon 2000).[2] Apparently, people fight for 'survival' in a 'new age of insecurity' as a result of 'Malthusian' pressures (Renner 1996).[3] Others argue that civil violence is mainly driven by 'greed,' or self-serving behavior, rather than grievance-based, justice-seeking behavior, and that an abundance of resource wealth is likely to spur conflict because it offers lootable in-come over which to fight, making costly strategies of violence viable—a few can 'do well out of war' (Collier 2000). Others focus on societal factors, such as ethnicity and civilizational divides.[4] Apparently, cultural difference and ascription create natural battle lines that result in violence, driven often by primordial hatred. A kindlier version is that difference provides a 'soft' resource to be exploited by 'ethnic entrepreneurs' for gaining access to hard resources, especially through control of the political levers of power vested in a state (Gurr and Harff 1994; Wimmer 1997). This study will assess the relative contributions of these three competing propositions on civil violence by utilizing a model of civil conflict offered by Collier and Hoeffler (1999). I test their model with altered specifications for the post-Cold War decade on a large group of countries (~139), utilizing alternative data and comparing results with theirs.

These tests will gauge the relative importance of proxies that capture some aspect of the major approaches and speak to the debate that continues to occupy social scientists as to whether conflict is produced by selfless opposition to tyranny or whether tyranny derives from the vanities of a few men, a problem that occupied the minds of the fathers

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1 The quotation is from Ebenstein and Ebenstein (1992: 84), who provide a useful selection from *Politics.*

2 Diehl and Gleditsch (2001) provide excellent coverage of the 'state of the art' on environmental and demographic factors and civil and international war.

3 The investigation of environmental factors behind state failure received high priority in the United States, where the Vice President's office initiated the State Failure Project to investigate environmental factors (among others) as possible triggers of state collapse and civil violence (Esty et al. 1999).

4 There is an enormous amount of literature on nationalist and ethnic conflict. In fact, this genre of conflict analysis is perhaps one of the oldest within the social sciences. See Diamond, Larry, and Marc F. Plattner (eds). 1994. *Nationalism, Ethnic Conflict, and Democracy*. Johns Hopkins Press. Gurr, Ted R. 1993. *Minorities at Risk: A Global View of Ethnopolitical Conflict.* United States Institute of Peace Press. Gurr, Ted R., and Barbara Harff. 1994. *Ethnic Conflict in World Politics.* Westview. for review of theories and evidence.

of the modern discipline of political science.[5] One problem facing systematic examination of the causes of violent conflict is identifying the appropriate model, or identifying salient variables to hold constant when exploring the impact of variables of interest.[6] Social science, which lacks the controlled environment of a laboratory, is highly susceptible to spurious explanations because variables of interest are often intercorrelated, with many even causing each other (King, Keohane, and Verba 1994).

All too often, studies of conflict are pursued based on the dependent variable, which is that conflict already exists to arouse the interest of research, leading to misleading conclusions about causes because the lack of variance in case-study based research design leads to overdetermination (Collier and Mahoney 1996; King, Keohane, and Verba 1994). In conflict zones especially, the discourse is driven by grievance, and objective factors are likely to be well masked. In these situations, one can find just about any narrative of grievance to provide the basis of the causal story. The focus on difference, which is a natural function of the 'enemy-image,' is an especial feature of political contests and violence. In such situations, cultural differences in particular may come to be overemphasized—us versus them. The discourse of grievance is often unrelated to objective truth, which makes the discourse highly dependent on the nature and form of the violence itself. Academicians, like the participants, are not impervious to falling prey to the representations and counter-representations that are part of the charged discourse. It is a daunting task indeed for the researcher to enter this perplexing environment and come away with a clear picture of who the 'good' and 'bad guys' are, leave alone to be able properly to identify causal linkages.[7]

Much analysis of conflict during the Cold War was undertaken with the bloc politics of the time as a heavy backgdrop. Conflict was almost always framed according to neo-marxist, dependency theory, modernization theory, or simply according to marxist narratives of class domination and peasant emancipation, or of revolutionary movements and counterinsurgency. Moreover, what seemed to be compelling findings from one or two cases were often generalized as theories explaining other conflicts, so that the discourse of conflict in the wars in China and Vietnam were applied nearly to all other conflicts—with policy imperatives of the time reinforcing the premises of the explanation. One danger of such explanations was that the absence of conflict was often interpreted to mean that there was no objective grievance.

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5 While Aristotle's *Politics* is often cited as support for reducing inequality (a good in its own right) because he argues that a state governed by the 'middle class' is the best form of government, there is little ambiguity in his writing as to the causes of social harmony. In the passage that the statements quoted above is taken from, Aristotle is quite clear that the 'equalization of property will take away from a man the temptation to be a highwayman' and notes that the institutions of the Spartans 'avail only against petty crimes.' He goes on to spell out that the problem is that 'the nobles will be dissatisfied because they think themselves deserving of more than their share, and this is often the cause of sedition and revolution … [because] the avarice of man is insatiable' (Ebenstein and Ebenstein 1992). Much of the concerns in *Politics* revolve around how to control 'greed' rather than the mitigation of 'grievance.'

6 There is really no one accepted model of conflict. The usual approach in the quantitative literature is use standard variables thought to be important, such as the level of wealth, regime type, economic growth rate etc., and then include a variable of interest in the model to test its effects on the dependent variable holding the other variables constant.

7 The point being made here that it is not just large N, hard data (econometric) research that is able to uncover the right relationships, but that there should be variance, whatever the method used.

Often, the causes of complaint are hard to examine objectively. In other words, conflict defines the complaint, which means that the group organized enough to fight first, determines the cause and the subsequent discourse of grievance. Thus, an organizational advantage can determine the discourse of grievance, not the objective causes of grievance—in such a way, Marxist narratives, ethnic grievance etc. gain ascendancy given the particularity of time and place, based importantly on who is able effectively to organize violence. However, the reasons driving capabilities to organize violence and objective factors generating individual and group grievance are totally different things, even if they sometimes go together. Mary Kaldor (1999) has shown convincingly in the case of the Balkans how the criminalized element used violence to marginalize the majority, multiethnic society of Bosnia. As Varshney (1997: 2) points out in reference to communal violence in India,

> It is impossible to establish the truth . . . about cause and effect in communal violence. Contemporary communal violence has become horribly tangled in discursive 'contestations' and politically manipulated 'representations.' Indeed facts and representations cannot be separated. It is not that facts do not exist, but that the most important facts necessary to make causal arguments simply cannot be culled from the morass of representations.

He suggests, however, that contemporary social science should bring in a 'sense of variance' to the study of conflict, so that fact and representation can be separated and general theory built, not on the basis of the aggregation of similar cases, but on the relative strengths of the competing narratives in a world marked by variation (Varshney 1997).

In a cross-national sense, the so-called ethnic war in Sri Lanka illustrates the problems of master narrative and variance. The popular media and even academic analysis seems to be convinced that the current conflict in Sri Lanka is about ethnic grievance, which means that much analysis of Sri Lanka is based on the ethnic question and the historic search for instances of discrimination. As some see it however, looking back at history one can find just about anything to justify present conditions. History is important, of course, but much depends on how historical data are collated. The historical truth about Sri Lanka, however, is that like many other conflict-ridden countries, it contains multiple conflicts. Post-colonial Sri Lanka contains numerous instances of Sinhala-Sinhala violence, the most recent round of which proved to be unusually bloody. Also, the most disenfranchised group of Tamils, the so-called Hill-Country Tamils, who undoubtedly harbor the deepest grievances because of historic discrimination, are non-participants in the violence despite being politically active. The complaints of other groups, such as the Hill-Country Tamils, Muslims, indigenous peoples (the Veddas), and low-caste Sinhalese, or any other group's for that matter, rarely define Sri Lanka's proneness to conflict. Political contests between the Sinhalese political groups lead to extreme forms of violence, often over the most insignificant electoral contests. Thus, policy that seeks to eradicate violence from Sri Lanka will be mistaken if it thinks it achieves this by simply separating two warring factions, based on their success at fighting and their ethnic background.

Is Sri Lanka unique in terms of its proneness to conflict because it contains violence involving two distinctly different ethnic groups, or do the above examples suggest less-discussed factors that make Sri Lanka, like perhaps other countries, prone to conflict on

dimensions other than ethnicity—the dominant Sinhala versus Tamil narrative? Looking at Sri Lanka's history alone to answer this question will lead to misleading conclusions. Collier and Hoeffler (1999) provide much insight into some of these questions by assigning either 'grievance' or 'greed' as the motive for armed violence. Such juxtaposition allows us to distinguish between general causes of conflict and those determined (or overdetermined as the case may be) by particular circumstances and representations, or by the discourse of grievance generated by conflict itself. Testing the strength of variables by using the model's framework provides tractability to some of the complex questions posed by building theory on civil conflict.

1 The Collier-Hoeffler model

According to Collier and Hoeffler (2000), civil war can be modeled as 'loot-seeking' wars (large-scale banditry), or as 'justice-seeking' wars.[8] The first is based on the notion that in-dividuals join rebel movements depending on the expected utility of their actions, which is a function of opportunities forgone by engaging in violence and the availability of lootable income, or the payoff. The higher the per capita wealth and human capital, the less likely individuals will engage in risky behavior, but this is dependent on the size of the payoff, which they proxy as the availability of natural resources, measured as the ratio of primary commodity exports to total exports. The second model is of justice-seeking wars, where groups form on the basis of ousting a grievance-causing government (political system) and ending injustice. Such movements, however, face enormous collective action problems since justice is a public good. Individuals can free ride by not bearing the costs of war. Moreover, justice-seeking rebellions have to be large in order to replace the state, whereas loot-seekers may remain small. Therefore, justice seeking on the basis of difference, or dis-crimination, within highly fractionalized societies is likely to face bigger collective action problems since the likelihood of garnering a large enough coalition is smaller. They proxy the level of grievance and the likelihood of overcoming collective action problems with social variables, such as ethno-linguistic and religious fractionalization and the degree of political repression, and economic variables, such as per capita economic growth and in-come and land inequality.

The results support the propositions in many interesting ways. Collier and Hoeffler (2000) find that both greed and grievance predict conflict significantly. However, greed, proxied by the availability of natural resources (measured as the share of primary commodity exports in total exports) has one of the strongest effects on the incidence of conflict, holding the other factors constant in the model. Moreover, and quite significantly for debates on self-serving behavior versus grievance, the proxies for ethno-religious fractionalization exhibit a curvilinear shape, suggesting that high ethnolinguistic and religious fractionalization increases the organizational costs of fighting and thereby induces a peace effect greater than the grievance effects generated by moderate fractionalization. The purely grievance-measuring variables such as

8 During the Cold War, Political Scientists and Sociologists debated whether or not violent collective action was motivated by relative deprivation, or whether by self-serving, rational action, a debate that relates intimately to the greed versus grievance juxtaposition. See (Weede 1998) for review of the earlier discussion.

income and land inequality are not significantly related to conflict. Likewise, political repression can drive down conflict because it affects the opportunity costs of participants, but moderate democracy tends to increase the incidence of conflict while further increases induce peace. However, the net effect of repression is larger than that of grievance-reducing democracy, suggesting again that greed, rather than grievance is the more potent driver of conflict because grievance should be highest at the highest point of repression, but so are the opportunity costs of rebellion. In other words, costs of organizing to fight determine the outbreak of violence and not the supply of justice. To put it succinctly, there are no martyrs.

The Collier-Hoeffler model provides many insights, and the empirical results dispel some 'standard wisdoms' in the field of conflict studies, mainly that grievance is hardly the strongest stimulant for conflict as most claim (Gurr and Harff 1994). One major drawback in the Collier-Hoeffler model, however, is that it lacks an institutional component, even though their analyses are based at the level of the state. Institutional factors can fashion the opportunity costs of fighting and solve collective action problems for maintaining peace. While per capita wealth and the growth rate capture some aspects of state capacity and governance, the model is perhaps under specified with regard to modeling collective action for peace. At least one robust result from the Collier-Hoeffler analysis provides some cause for pursuing governance factors. They find a strong association between the size of the population and conflict. Larger populations have more conflict. However, larger countries are also found to be less open to trade and contain smaller government, which suggest on the face of it that further investigation is warranted because trade is related to the macro-environment that fashions predatory versus productive behavior, at the societal and state levels and the public and the private spheres of life.[9]

Moreover, the use of primary goods exports in total exports for modeling the motivation for greed-driven conflict raises some questions. Although it is a reasonably good proxy for the purposes outlined by Collier and Hoeffler—i.e. lootable income for measuring the size of the payoff for engaging in violence—the assumption that this measure directly captures the degree to which natural resources are scarce or abundant is problematic and could be questioned on at least four grounds. First, the finding that primary goods to total exports ratio is strongly related to conflict can very well be interpreted to mean that poor countries, which are dependent on primary goods exports are facing Malthusian crises and are unable therefore to meet the demands of society, leading to subsistence crises. This is in fact what the proponents of 'ecoviolence' argue (see below). Secondly, the ratio of primary commodity exports to total exports is not just a function of resource availability, but it varies also with the denominator—total exports. Very poor countries have a high proportion of their exports devoted to primary goods because they have fewer industrial goods to trade. If this poor country is vulnerable to conflict, for whatever reason, it is likely that total exports will remain level, or shrink, raising the ratio. In other words, since the denominator determines the ratio, social factors affecting investment and export activity can affect the ratio. Adding

9 Some economists who model conflict show nicely under what conditions purely *homoeconomicus* prevails and why largely cooperative behavior obtains in other situations, see (Garfinkle and Scarpadas 2000). See (Levi 1988) for similar arguments and framework for analysis of predatory states.

growth of GDP in the model may mitigate some of the problem, but not all of it since the denominator of the primary commodities to total exports is not GDP directly.

Thirdly, not only might underlying tensions affect the ratio, but it may affect the mix of goods being traded. For example, manufacturing is likely to shrink farthest when tensions mount, or when bad policies are implemented, because manufacturing investment requires a stable environment. Rising tensions and shrinking manufacturing may drive a government to extract primary goods more intensively. In this way, social tensions can change the mix of primary to manufactured goods in total exports. If the mix of goods being traded changes simultaneously with declines in manufacturing, the ratio of the overall primary goods to total exports ratio increases. Fourth, since the exportation of oil can dominate the export sector, and since a large proportion of oil-producing countries happen to be Islamic states, some might question whether it is really Islam's militarism that is driving the result rather than lootability of resources. These reasons taken together warrant some altered testing procedures of a model that contributes significantly towards our understanding of the dynamics of conflict. This study addresses the problem using an alternative measure of natural resource availability, and explores the possibility that governance (institutions), measured in terms of the total trade to GDP ratio, may matter in the issue of social peace. I generally follow the Collier-Hoeffler model closely for comparison.

2 Governance and peace

I propose that Collier and Hoeffler's result on the size of the population is perhaps capturing the effects of institutional (governance) variables, since the size of the country is in-versely related to the level of openness (Cameron 1978; Rodrik 1996; Wei 2000). Trade is an important determinant of the macro-environment that determines the degree to which governments encourage productive activity rather than 'diversionary activity' (Hall and Jones 1996). Rodrik (1996) argues that more open economies tend to have larger govern-ments because they are more likely to build institutions that provide social insurance for minimizing the risks of being tied to a global trading system. Apparently, more open economies have a larger share of government to GDP, which is supposed to serve a risk-reducing function. Others find strong evidence to suggest that more open economies have less corruption (Wei, 2000). Alesina and Wacziarg (1997) and Alesina and Spolaore (1997) challenge Rodrik's assertion that open economies have larger governments because of risk factors, and they argue that the association works through the inverse relationship between the size of the population and openness. Large countries spend less on government be-cause there are diminishing returns to paying for the supply of public goods. These re-searchers also argue that large countries contain greater ethnic fractionalization, which also serves to reduce the size of government. These arguments are also powerful reasons for exploring the connection between the size of the population and conflict and the issue of trade and governance.

Some economists use openness to trade as an important aspect of governance, or as some call it, 'social infrastructure' (Hall and Jones 1999). According to Hall and Jones (1999), social infrastructure is the institutional and policy environment within which productive activity flourishes, and where diversionary activity associated with thievery, mafiosi, violence, and predation etc are minimized. The guardian against such activity, the state, also engages in diversionary activity through corruption, poor enforcement of

contracts, confiscatory taxation etc. They find social infrastructure to be a powerful determinant of the differing productivity levels across states. Importantly, however, they measure social infrastructure with two variables—measures of corruption and openness to trade. According to them, people engage in productive activity and exchange where the climate for this activity is guaranteed by an environment that protects the private returns from such activity. Political scientists too, have argued that revenue from trade and excise has been an important determinant of state strength and the rule of order (Hall and Ikenberry 1989). Hall and Ikenberry (1989: 32) point to Ibn Khaldun's observations about the rise of cities and the limits of predatory nomadic existence. As they write,

> A trading center requires a government so that market transactions can be reliable and regular. In North Africa, government control is limited to the cities and their surroundings. The essential contrast, to use a Moroccan expression, is between the *bled el makhzen*, the area of order, and the *bled el siba*, the area of tribal dissidence.

At least one important set of findings reported by the State Failure Task Force, commissioned by the Vice President's office and the Central Intelligence Agency (CIA) but conducted by a panel of eminent independent scholars, shows that the trade to GDP ratio is significantly negatively related to civil disturbance and state failure (Esty et al. 1998). This was one of the most robust results from two phases of the task force's investigation. This project reports that 'countries in Sub Saharan Africa that were above the median on trade openness were on average only about one-half as likely to fail as countries below the median' (Esty et al. 1999). Unfortunately, there provide very little theoretical justification for interpreting such a finding.[10] It is hypothesized here, that the openness to trade is associated with better institutions, so that governance reduces the aggravations associated with predatory climates, increasing the quality of 'social infrastructure.' Importantly, however, the more important trade is to the welfare of people, the more likely that mechanisms of social peace (social capital) endogenously develop to prevent disruptions of productive activity. In other words, social capital through associational life may mitigate collective action problems of creating and maintaining peaceful relations, whether between communal groups or within them (Putnam 1993; Varshney 1997).

Closed economies increase the payoff to illegal activity, such as smuggling and organizing in the shadows, which reduce the opportunity costs of organizing for violence. In other words, activities in the shadow economy provide the organizational basis for violence because organized 'mafias' develop which may exploit an underlying grievance and provide the organizational capacity to challenge the authorities, and as a by product increase ethnic, caste, regional, and communal discourses of grievance in the process. Some (Kaldor 1999; Mueller 2000) have shown how mafia-like organization was behind the extreme violence in the former Yugoslavia, and similar groups are behind movements in many of the former Soviet States. While some see this as a result

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[10] In contrast to the literature on civil war, the literature on interstate war is highly developed in terms of theory on interdependence and conflict, the so called 'liberal peace,' and the empirical evidence has proved to be quite robust (Oneal and Russett 1997); see also the special issue of *the Journal of Peace Research* 36, 4 (1999). Immanuel Kant was one of the first to argue that trade promoted peace by acting as a constraint on rulers who might otherwise embark on conflict 'as if for sport.'

of the privatization of the state, it is much more reasonable to see these groups as elite organizations that flourished as a result of illegal activity now stepping in to fill the vacuum left by the collapse of political authority. Under these circumstances, it is also highly likely that these groups, whether along communal, class, or regional lines, will already harbor highly antagonistic feelings towards state authorities. To sum up, trade may be important for reducing conflict by raising the capacity of government, reducing opportunity costs for acting peacefully because of alternative income-earning opportunities, and by increasing social capital, which acts as a deterrent against groups forming on the basis of violence for profit. It is surely closed economies and borders that increase the payoff to smuggling and other organized criminality, which provide lootable income and form the basis of organizational advantages to groups vis-à-vis the state and the rest of society.

3 Ethnic and religious conflict

The social sciences have generally placed much emphasis on ethnic and religious identities as a causal factor in the incidence of violent conflict, although the exact links are sketchy. In general, the grievances of groups act as a catalyst for overcoming collective action problems for organizing violence—common identity makes mobilization easier (Diamond and Plattner 1994; Gurr and Harff 1994). Difference, whether for socio-biological reasons (primordialism), or as a convenient resource that is exploited by elites (instrumentalism), is supposed to be grievance generating. Difference is supposed to foster mutual fears and in-group/out-group dynamics that make mutual recrimination likely, leading to conflict. The study of ethnicity and nationalism, according to one preeminent scholar on the subject, however, is where 'theoretical overclaiming is in evidence' and where competing positions have not 'produced a great deal of cumulative knowledge'(Horowitz 1998). Despite a multitude of explanations, which are segmented along the primordialist-instrumentalist fault-line, there are few solidly specified models suggesting clearly how ethnic enmity is the real cause of violence and not, as is very often the case, its by product.

Recently, the primordialist vision has gained much credence with the publication of Samuel Huntington's (1997) popular thesis on the 'clash of civilizations', which suggests that cultural differences will be the central factor in conflict in the post-Cold War world. While Huntington's thesis is relevant directly in the arena of international relations, he suggests that civilizational ties, those marked by mass religions, such as Islam, Christianity, Hinduism, Confucianism etc will replace the Cold War configurations which provided the salient identities around class. According to Huntington (1997: 20), 'culture and cultural identities, which at the broadest level are civilizational identities, are shaping patterns of cohesion, disintegration and conflict in the post-Cold War world.' His thesis is concerned to a large extent with the inter-civilizational clash between the 'West and the rest,' where the incompatible ethos of a Christian West and an Islamic Near-East will mark the faultlines along which we will see conflict in the future. As he writes, 'the major civilizations in human history have been closely identified with the world's great religions; and the people who share ethnicity and language but differ in religion may slaughter each other' (Huntington 1997). In fact, he takes great pains to show how Islam in particular can be highly antagonistic to other religions, arguing that an 'overwhelming majority of faultline conflicts have taken place along the boundary looping across Eurasia and Africa that

separates Muslims from non-Muslims.' As he writes, 'Islams borders are bloody, but so are its innards.'[11]

At least one recent study finds little evidence for the 'clash' between states divided along Huntington's civilizational categories (Russett, Oneal, and Cox 2000). Islamic and non-Islamic countries are no more prone to conflict than others, but standard realist and liberal variables have more explanatory power than cultural variables. However, they do report that Islamic borders tend to be bloody—the Islamic innards seem to be more violent, other things being equal. This result is probably driven by territorial and political factors rather than by Islam's propensity for militarism. Some scholars have found an independent effect of Islam on the inability to democratize, however, controlling for other salient factors (Ross 2000). Islamic countries, the large majority of which are located in the Middle East and North Africa also control large deposits of natural resources, mainly petroleum. Thus, it is salient to test Islam's independent effect on conflict in models holding resource wealth, ethnic fractionalization, and democracy constant. If oil and peace don't mix, is it that Islam and peace don't mix because of oil? This study will also test the interactive effects of Islamic populations with Christian and non-Christian populations to test Huntington's assertions that Islam is overly militaristic. Moreover, it is important to find out of moderate ethno-religious factionalization's positive effect on conflict, as reported by Collier and Hoeffler (1999), is being driven by religious homogeneity represented by militaristic religion.

Horowitz (1998) attempts a few steps towards a synthesis of primordialists and the instrumentalists that may be summarized as follows: identities are not hard givens, but they are malleable. However, even in soft form, attachment must exist to be exploited for the rational benefit of elites. Passion and interest work conditionally, where ethnicity at least promotes 'gemeinschaft', or as Daniel Bell's (1975: 169) oft-quoted line suggests, ethnicity matters because it 'can combine an interest with an effective tie.' According to Horowitz (1998), democracy can be highly destabilizing when ethnicity is a ready resource to be politicized for rational political purposes, and ethnicity becomes a 'strategic site' in contests (Bell 1975). It is argued also that institutional arrangements can mitigate violence from breaking out, since 'ethnic peace' is achieved by various societies in many disparate countries at different times. Electoral arrangements and institutional arrangements, such as consociationalism apparently defuse propensities towards violence, but as Horowitz (1985) has pointed out, leaders of large majorities face the risk of being outflanked by those who will play the ethnic card, which creates the logic of polarization.

While most of these explanations outline the contours of the contests by describing the differences of the conflicting parties, the links to violence are not well-specified. Moreover, there is confusion over the type of violence, since ethnicity is often associated with the riot. Riots, however, occur for reasons other than ethnicity, and even though minorities are often targeted, rarely do ethnic groups 'speak with one voice'

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11 Huntington's thesis of the 'clash' is the most popularized, but there has been a spate of books and journal articles in recent years with a similar message that views the rise of Islamic fundamentalism and other forms of fundamentalisms deemed to be responses to modernization and globalization, particularly the advance of westernization—McWorld vs Jihad. In the words of one commentator, anti-western Islamic fundamentalism and its challenges will be the 'new Cold War' (Juergensmeyer 2000). Others disagree. See (Sadowsky 1998).

(Gorenburg 2000; Mueller 2000). Many are able to explain communal polarization, but the links to violence are not made explicit. If elites cause polarization by ethnicizing interests, are they not the ones who stand to lose the most from protracted violence? Does the provision of justice for the entire group compensate elite loss from the conflict? Moreover, is group identity along ethnic lines a sufficient cause for mobilization? The participants in many long and bloody conflicts, such as *la violencia* in Colombia, were not ethnically distinct, but were mobilized by elites to conflict. If minority ethnic groups organize to fight for justice, why are they so rarely unified? What explains the success and monopoly power for supplying justice of some groups over others? Moreover, how are islands of ethnic peace possible in protracted and bloody ethnic war zones? What conditions, at the national level, can predict peace, given that ethnicity is a convenient vehicle for mobilization and manipulation? At the heart of these questions lies the problem of understanding conflict in terms of whether or not greed or objective grievance drive conflict.

4 Environmental pressure and conflict

Since armed conflict takes place overwhelmingly within poor states, it is thought that environmental pressure and poverty are thought to be parts of a process, which have trapped poor countries in a vicious cycle. The extreme pessimistic view of environmental pressure and conflict is reflected in neo-Malthusian arguments about 'the population explosion' (Ehrlich and Ehrlich 1990) and the 'coming anarchy' (Kaplan 1994). The recent outbreak of genocidal violence in places such as Yugoslavia and Rwanda and the continual violence in many parts of Africa and Asia, relayed live on global television have given much impetus to the idea that the world is flying apart because of social pressures wrought by an environmentally decaying planet. It is no exaggeration to suggest that environmental concerns are a matter of 'high politics' and that the discourse on development and peace is dominated by ecological concerns.

More sophisticated analyses of population pressure, scarcity of resources, and conflict offer some complex and nuanced explanations on how the environment is related to conflict (see Homer-Dixon, 1999). While the causal pathways from scarcity to conflict interact in complex ways, the arguments stress the importance of resource scarcity as being the primary underlying cause determining other proximate causes of conflict, which are explained usually as being based in issues of identity, socio-economic questions, and political factors. Some 'ecoviolence' proponents go so far as to argue that renewable resource scarcity is the 'causal mechanism' behind many conflicts (Schwartz, Deligiannis, and Homer-Dixon 2000). Homer-Dixon and associates affiliated with the Toronto school on environmental pressure and conflict argue that environmental transformation alters the sociopolitical fabric of society, disrupting productive relationships and ultimately adversely affecting established constraints on and mechanisms of social peace. The clearest articulation of how environmental factors affect conflict is found in the connection between the incapacitating effects of resource scarcity on the capability of poor societies to adapt to socio-economic pressures.[12]

[12] These assertions are made despite much evidence in economics and political science showing resource wealth to be problematic on many fronts, socially, politically, and economically (Auty 2000; Lal and Mynt 1996; Ross 1999).

Conflict is generated by the scarcity of natural resources in two primary ways. First, resource scarcity drives elites to 'capture' resources, marginalizing powerless groups in the process. According to Homer-Dixon (1999: 177):

> Resource capture occurs when the degradation and depletion of renewable resources interact with population growth to encourage powerful groups within a society to shift resource distribution in their favor.

Such a process is often cited in connection with the recent violence in Haiti, Mexico (Chiapas), Rwanda, South Africa, and the Philippines.[13] Another way in which scarcity causes conflict is indirectly through its debilitating effect on economic and social innovation—what Homer-Dixon terms the 'ingenuity gap.' According to Homer-Dixon (1999: 5, 7):

> . . . many developing countries face increasingly complex, fast-moving, and interacting environmental scarcities. These scarcities can overwhelm efforts to produce constructive change and can actually reduce a country's ability to deliver reform. Consequently, environmental scarcity sometimes helps to drive society into a self-reinforcing spiral of violence, institutional dysfunction, and social fragmentation.
>
> A persistent and serious ingenuity gap raises grievances and erodes the moral and coercive authority of government, which boosts the probability of serious turmoil and violence. . . . If these processes continue unchecked, countries with a critical ingenuity gap therefore risk becoming trapped in a vicious cycle . . .

The argument is that poor countries stay poor and suffer armed conflict because resource scarcity acts to prevent socio-economic innovation. The link between environmental pressure and conflict is mediated in part by the ability of societies to achieve such collective goods as economic growth and innovation, thereby adapting to changing conditions generated by resource scarcity. To deal with scarcity, a society needs ingenuity—but the very scarcities demanding social ingenuity act as constraints on innovation. According to Barbier and Homer-Dixon (1996), endogenous growth theory, which stresses the importance of endogenous technical change for sustained economic growth (a proxy for economic capability and innovation), fails to take into account resource scarcity as a restraint on a society's ability to innovate. As they claim (Homer-Dixon, 1999), over time, an 'ingenuity gap' develops because society is unable to deal with environmental scarcity, leading ultimately to conflict.

Collier and Hoeffler's model of loot-seeking behavior, and the proxy of primary commodity exports, would on first glance contradict the 'ecoviolence' arguments. As they conclude, a country with 'large' amounts of resources would likely suffer more

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[13] The belief that objective scarcity drives elite greed and thereby to resource capture is quite problematic, since it assumes that elites will be less likely to do so under conditions of abundance. In other words, the voracity of elite greed is dependent on scarcity. Also, it is not clear from this argument as to who the antagonists are. Does scarcity promote intra-elite violence over resources (self-centered, rational action), or does violence erupt between the elites and the marginalized (relative deprivation)?

conflict than one that does not. As discussed above, however, resource dependence is not abundance and the Collier-Hoeffler findings may very well be paraded as support for the ecoviolence arguments. Proponents of both sides of the debate have assumed that resource dependence signifies objective abundance, or scarcity. This study corrects this lapse by using a measure of the available stock of natural capital to test objectively the effects of natural resource scarcity on conflict.

5 Method, variables and data

Like Collier and Hoeffler (1999), I use a standard social science technique to gauge the relative significance of the variables representing the competing theoretical positions. Maximum-likelihood, probit analysis gauges the likelihood that a positive outcome (conflict) will obtain for a given value of an independent variable. The transformed Probit scores into the Z metric allows us to identify the direction and magnitude of change in the probability of Y occurring given a unit increase in X (Stata 1999). For comparability, I follow the basic Collier-Hoeffler model with some variation discussed in detail below. The objective of the exercise is to assess the relative strengths of explanations holding constant variables that proxy the competing explanations discussed above.

I use a dependent variable measuring conflict with a much lower threshold of violence for inclusion as a positive outcome. Instead of the threshold of 1000 battle deaths used by the Correlates of War (COW) data, which is the most commonly used, I employ data that use a lower threshold of 25 battle-related deaths (Wallensteen and Sollenberg 2000). This lower threshold captures a level of conflict that covers societal conflicts that fall well short of large-scale civil war, reflecting better the nature of 'ecoviolence' and/or criminalized violence as discussed in the literature.[14] Moreover, the Collier-Hoeffler results are based on large-scale civil war, which is comparatively quite rare compared to all outbreaks of civil violence that result in a reasonably high number of deaths.

Wallensteen and Sollenberg (1999: 605) define a conflict as 'a battle between incompatible interests over government and/or territory where armed force is being used, and where at least one of the parties involved represents the national government.' I test the post–Cold War era (1989–99) because of the recent date of the natural capital estimates. The basic model is $Pr(WAR_{1989\text{-}1999})=f(E, D, P, R, S)$, where E denotes economic variables (per capita income 1989, average trade/GDP 1985-89, and the average growth rate 1985-1989, D denotes demographic variables (population size and density in 1989), P denotes political variables (democracy and its squared term in 1989), and R denotes resources (renewable and sub-soil assets and their squared terms), and S denotes cultural variables proxied by ethnolinguistic fractionalization (and its squared term) and the percentage of Muslims and percentage of Christians in the total population. These data are obtained from La Porta, Lopez-de-Silanes, Schleifer and

14 This view stands in opposition to induced innovation theories such as Esther Boserup's (1965) theory on population pressures and agricultural productivity. Unfortunately, induced innovation theories are dismissed for being overly optimistic by Homer-Dixon (1999).

Vishny (1998).[15] I also enter interactive terms of the resource and demographic variables and the social variables to test for conditional effects.

Per capita level of wealth is usually a highly significant variable predicting peace (Collier and Hoeffler 1999; Hauge and Ellingsen 1998; Henderson and Singer 2000). Higher incomes give governments a larger tax base with which to pacify, or crush opposition, and higher incomes simultaneously raise the opportunity costs of potential rebels because it means a greater loss in terms of earnings in the regular economy. This variable is measured as GDP per capita expressed in purchasing power parity terms (PPP) and is obtained from GDN data (Easterly and Yu 2001). The growth of income in the preceding five years is also a significant predictor of peace (Collier 1998). A higher growth rate possibly signifies the extent of opportunities available for advancement. Growth is measured as the annual average between 1985 and 1989 (the preceding five years to the period under study) and is obtained from the World Development Indicators (World Bank 2000). The previous five-year growth performance should capture the negative growth effects among those states already suffering conflict. I include trade openness (total trade/GDP) measured as the annual average between 1985–89 to capture quality of governance, which would also capture some effects of opportunity costs, institutional aspects, and social capital effects on peace. Some use measures of openness that capture aspects of trade policy (Hall and Jones 1996), but I hope to measure the actual influence of trade on the economy and not simply the potential. These data are obtained from the WDI data. I enter trade to GDP ratio to test if the size of the population might be capturing the effects of a closed economy. I include population density, or 'demand-induced scarcity' in terms of the ratio of people to available land as others have done (Hauge and Ellingsen 1998). The demographic data are from WDI 2000.

I utilize the *Polity III* data as a measure of democracy (Gurr, Jaggers, and Moore 1990). The data gauges democracy and autocracy along a 10-point scale. The degree of political democracy is obtained as democracy score minus the autocracy score plus 11 to obtain positive numbers for all scores, which makes interpreting the squared term of democracy a bit easier. Thus, the score for regime type extends from 1 (most autocratic) to 21 (most democratic). A squared term of the democracy score is added to model the quadratic shape between democracy and civil peace. It has been argued that conflict is likelier among moderate democracies because they are less likely to be harshly repressive, thereby lowering opportunity costs for organizing opposition to the state, or for organizing violence for other purposes. The empirical evidence for this proposition is quite strong—high levels of autocracy and high levels of democracy are both conducive to peace (Collier 1998). Following others, I also include a dummy variable for 'history of conflict' to capture important grievance effects. The dummy variable is constructed from the list of wars in the COW data.

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[15] What kind of conflicts ecological factors provoke and how exactly to measure them is not always clearly specified, but Homer-Dixon (1999: 133) writes that ecological factors 'weaken local and national institutions, which decreases central control over ethnic rivalries and increases opportunities for insurgents and elites challenging state authority.' This statement suggests that the conflicts that ecological factors can provoke at least involve the state. In any case, it should be noted that all the cases analyzed by the 'ecoviolence' proponents are indeed coded as conflicts in the Wallensteen and Sollenberg (1999) data. At least the data do not seem to miss any instances examined by the literature as 'ecoviolence.'

The crucial natural resource variables are measures of the total per capita stock of natural resources (World Bank 1997).[16] This measure is derived as the availability of natural resources composed of the absolute value of the stock of cropland (agricultural resources), timber resources, other forest resources, pasture, protected areas, and sub-soil assets (mineral wealth). The World Bank (1997: 30) defines the stock of natural capital as the 'entire environmental patrimony of a country.'[17] These values represent the inherent surplus value in the extraction and harvesting of a resource because they take into account the difference in the market price and the costs it takes to extract, process, and market these resources (the Ricardian Rent). In general, these natural capital estimates tell us in standardized values the net worth of the stock of natural resources of any given country in per capita terms. I use the total stock with a separate term for the estimates of sub-soil assets, or mineral wealth, in order to gauge the differing impacts of renewable and nonrenewable resources. The nonrenewable component is made up of all mineral assets. I enter the quadratic terms of both resource variables. I assign $5 to all cases that score zero on the sub-soil assets even though there is some ambiguity with 0 values, since the estimate depends on whether a country is actually exploiting the resource. Artificially assigning values is somewhat problematic because of the nature of the 'greed' arguments, since some countries may not exploit certain resources and incidentally not have conflict, which does not mean that lootable wealth does not exist. Conversely, a zero value may signify resource scarcity in a particular country, which may or may not contain conflict (Switzerland has 0 mineral wealth according to this data). The ambiguity associated with 10 zero values, however, is outweighed by the benefits of gaining 10 data points and accounting as stringently as possible for arguments of scarcity represented by the zero values.[18] The sample size is restricted to 77 cases with the natural capital estimates in the model and expands to 139 cases without these data in the model.

6 Results and conclusions:

First, I discuss the results gauging environmental and demographic factors in predicting conflict (Table 1). In column 1, I replicate a model approximating the basic Collier-Hoeffler model, adding trade to GDP to test the hypothesis that it is trade that matters rather than the size of the population. The results are highly supportive of the basic Collier-Hoeffler findings. Per capita wealth is significantly negatively associated with

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16 Ethnolinguistic fractionalization score is the average value of five different indices of ethnolinguistic fractionalization. The 5 indices are 1. Index of ethnolinguistic fractionalization in 1960, which measures the probability that two randomly selected people will not belong to the same ethnolinguistic group 2. probability that two randomly selected people speak the same language 3. probability that two randomly slecetd people do not speak the same language 4. percent of population not speaking the official language 5. percentage of population not speaking the most widely spoken language. See (La Porta et al. 1998) for sources.

17 To some extent, the variable for renewable resource availability has a certain amount of 'ingenuity' built into it since agricultural assets require 'ingenuity' to be produced.

18 18 Unfortunately, these data do not take water resources into account, although the availability of water should be reflected in the agricultural and forest assets, as these assets are closely associated with the availability of water. For a detailed description of the construction of these data, consult Kunte *et al*. (1998).

conflict. The size of the population and population density are positively associated with conflict. The grievance effects of a lack of democracy (justice) are overshadowed by the opportunity costs of conflict, since the democracy terms exhibit a curvilinear shape. The two terms are jointly highly significant. Ethnolinguistic fractionalization exhibits the curvilinear shape reported by others but fails statistical significance (joint significance is p=.39). The relative availability of total natural resources is unrelated to conflict, while the availability of mineral wealth predicts conflict significantly, exhibiting a linear relationship. The results are generally congruent with the Collier-Hoeffler findings, despite the slightly altered procedure and the alternative data utilized in these tests. The results show no significant effect of previous wars, but this result is possibly driven by the sample of countries, since many resource-rich countries and others, such as Angola and Afghanistan, which have been undergoing violent conflict, are not in the sample because of the lack of data.

In column 2, the trade/GDP variable (openness) enters the model. Trade is negatively associated with conflict and statistically highly significant. Population size becomes statistically insignificant. As hypothesized, it seems that the conflict effect of larger countries seem to be working through trade, a result which suggests that policy and governance play a more significant role in inducing peace than does geography. The other results largely remain the same, although the ethnicity variables gain some statistical strength jointly (p=.11). Interestingly, however, economic growth's negative effects on conflict seem to be working through openness to trade. Statistical significance notwithstanding, a standard deviation increase in trade/GDP (27.5 for reduced sample) reduces the risk of conflict by ~28%, compared with the observed risk of conflict of 40%. A standard deviation increase in mineral wealth increases the risk of conflict by roughly 20%. In column 3, I enter a dummy variable for oil exporters. The variable scores 1 for countries that contain above a 50% share of petroleum and 0 for less dependent countries as coded by Easterly and Yu (2001). As seen there, petroleum exporters are highly susceptible to violent instability. There is over a 70% chance, in this sample of countries, for an oil exporter to be involved in a conflict as opposed to non-oil exporters. Other mineral rich countries continue to show a positive effect on conflict.

The results in the three columns show a strong positive relationship between population density and conflict. One explanation is the threshold effect, since the Collier-Hoeffler tests find no relationship between density and conflict with a higher threshold of battle deaths (COW data). However, it may be an indication of demand-induced scarcity. To test specifically whether population density's effect on conflict is capturing the lack of renewable resources, which is the 'ecoviolence' position, I enter a linear term of rural population density (column 4). This term is statistically insignificant. The correlation between the two density variables is .44, therefore the insignificant effect is unlikely to be driven merely by collinearity effects. I also test whether rural population density's effects on conflict are conditional on the scarcity of renewable resources and find that densely populated rural society with greater renewable resource assets per capita are more unstable than those which are not (p=.03, results not shown). There is insufficient theory to explain this result, except that greed-related processes, such as elite control of land working together with a bad policy environment (closed-economy policy environment), drive this result. Real-world examples of conflict in man-made scarcity might be countries such as Myanmar, Zimbabwe, and Nepal, where Malthusian crises are likely to policy-driven rather than attributable merely to 'mother nature.'

The results presented in columns 1-4 show little support for the 'ecoviolence' argument, because rural population density is unrelated to conflict and resource wealth per capita does not condition density's association with conflict in the expected direction. The results gained here on resource wealth and conflict are not surprising considering that enough evidence has been generated in recent years that shows natural resource wealth to be problematic for society on many fronts, especially as it tends to give rise to bad economic and social policies (Auty 2000; Ross 1999; Woolcock, Pritchett, and Isham 2001). There is ample evidence, however, for theories explaining conflict as resulting from greed-driven factors associated with the abundance of mineral resources, especially oil. In column 5, I test the basic arguments in an extended sample of 119 countries by dropping the natural resources data and the economic growth rate (which is statistically insignificant). The sample size is dependent on the availability of the *PolityIII* (democracy) data. As seen there, the basic results hold except for ethnolinguistic fractionalization and the grievance effects of previous conflict, which gain statistical significance. It is difficult to tell what drives the slightly altered results, but it is reasonable to conclude that the increased variance from adding a sizable number of countries (42) matters.

These results mirror the findings of the Collier-Hoeffler studies in general except that ethnolinguistic fractionalization is not as strong as their findings. As discussed above, they construct their variable of ethnolinguistic fractionalization as ethnolinguistic and religious fractionalization. I test the religious variables separately for theoretical reasons discussed above, to test whether civilizational factors matter. Table 2 reports the results. As seen in column 1, adding the religious variables to the model elicits stronger statistical significance from the combo of variables measuring ethnolinguistic fractionalization. The combo of democracy and its squared term become statistically insignificant. Islam is positively related to conflict and highly significant statistically, but so are largely Christian countries (%Protestant x %Catholic). Holding the other variables at their mean values, increasing the share of the Islamic population by standard deviation increases the risk of conflict by 13 percent. The same exercise with the share of Christians raises the risk of conflict by 14 percent. Interestingly, the interactive term of Islamic and Christian populations predicts peace, a result that is statistically highly significant. Increasing the share of both populations in one country by a standard deviation can reduce conflict by 12 percent.

The results on religion are interesting because they are independent of the level of wealth and of democracy. Moreover, since the model holds constant ethnolinguistic fractionalization and the interactive term of Islamic and Christian populations, the positive effect between conflict and Islamic and Christian countries signifies that extreme religious homogeneity might be what is problematic. In fact, the results reported in column 2 show that largely Catholic countries are significantly associated with conflict, where a standard deviation increase in the share of Catholics in the population is likely to raise the risk of conflict by 14 percent (since Christian is an interactive term between Catholics and Protestant, the Protestant term drops out due to collinearity). These results disconfirm fears about Islamic and Christian enmity. Apparently, it is not just the 'innards of Islam' that are conflictual, as Huntington has suggested, but also of Catholicism. Surprisingly, analysts have looked East of the USA to find support for their arguments and not South, towards Catholic Latin America and Africa. Some of the bloodiest conflicts in Africa are raging in largely Catholic countries, such as Burundi and Rwanda and Angola. These results taken together may be suggesting that conflict is likelier in societies where church and state are driving

competing authorities and possibly emasculating political institutions that foster civil society. These results suggest another way in which greater pluralism makes countries safer, as Collier and Hoeffler's findings also suggest.

In column 3, the democracy variables are dropped so as to maximize the sample size to 139 countries. As seen there, trade continues to exhibit a negative effect on conflict. Increasing trade by a standard deviation reduces the risk of conflict by 46%, which is substantial given that the average risk of conflict for the sample of 139 countries is 35 per cent. In column 4, when trade is dropped from the model, ethnicity, population density, and oil exporting countries become statistically insignificant. Size of the population is once again significantly positively related to conflict, suggesting once again that the effects of country size is possibly working through the governance factors associated with a closed economy. In general, the results also suggest that preventing war can reduce the risk of subsequent war as indicated by the positive and statistically significant effect of the dummy variable for previous war. Comparing the grievance effects of a large scale war in the history of a country with the result on trade is illustrative—holding the other variables at their mean values, if a country erases its collective memory, the gains for building peace is only half that of increasing trade by a standard deviation above the mean value. Since the wounds of history take time to heal, pursuing good governance seem a reasonable way to prevent further conflict. This finding calls into question the so-called 'peace keeping' tactic of keeping communities apart, such the current policy in Kosovo. Perhaps greater, more overt efforts should be made to build economic bridges between the communities, the missing links that were obviously missing as a result of Yugoslavia's long history of state intervention that drove profitable activity underground, now thoroughly criminalized and militarized.

In summary, the results taken together suggest strongly that 'greed' effects measured by the availability of natural resources is a potent predictor of conflict. Creed–related conflicts seem to be more prevalent in highly homogenous religious settings, particularly within largely Islamic and Catholic countries. If there is a clash of civilizations, it is much likely that it is political rather than civilizational. There is little support for need-based arguments as expounded by those who see Malthusian crises arising from resource scarcity. Densely populated countries that are less open to trade suffer conflict, but is a result that perhaps also reflects the lower battle-death threshold associated with the dependent variable. Some of these results speak directly to international policy that seeks to break up multiethnic states on the rather loose understanding that 'ancient hatred' drive so called 'ethnic conflict,' a result of which is to separate fighting parties which unwittingly create more densely packed homogenous countries, which according to these results tend to suffer more conflict. Perhaps policymakers should evaluate such simplistic prescriptions and promote instead sounder institutional arrangements for bringing about elite accommodation and toleration. Such policy outlooks as the fear of 'Islamic elections' where Western powers fail to recognize the elections of fundamentalist groups (particularly Islamic ones) might prove to be counterproductive in the long run.

The most salient policy lesson is that it is possible for countries to reduce their risk of conflict substantially by instituting more liberal policies on trade, promoting manufacturing over resource extraction, and adopting policies that will spur the growth of income. International policy can have a direct bearing on many of these aspects since the rich countries can provide market access, capital, and transfer technology. These policies should work simultaneously to reduce the opportunity costs of war at the

individual level, increase social controls against the outbreak of costly violence, and increase state capacities to deal with social instabilities emanating from self-serving individual behaviour, which are usually well-masked by ephemeral discourses of grievance. Trade may influence interdependencies within society so that collective action problems may be overcome. As Aristotle recognized in the time of antiquity, tyranny is rarely driven by 'necessity.' Aristotle instructed through his famous dictum, 'man is a political animal,' the way in which to reduce 'greed-driven' tyranny. By 'political animal' he meant 'polis animal,' or 'civic' person, whose reason for civility was to enjoy the 'good life' as understood by ancient Athenians. Not surprisingly, Athenian political and civic life centered on the *Agora,* the marketplace.

Appendix:

Variable	**. b. .**	**. ea.**	**. . . . . e. .**
ln income	□□□	□□□	□□□
ln □o□□l□□ion	□□□	□□□	□□□
ln □o□□□en□i□□	□□□	□□□	□□□
e□□nolin□□ □□□c□	□□□	□□□	□□□
e□□nolin□□ □□□□c□	□□□	□□□	□□□
□emoc□□c□	□□□	□□□□	□□□
□emoc□□c□	□□□	□□□□□	□□□□□
ln n□□□□□l c□□i□□l	□□	□□□	□□□
ln n□□□□□l c□□i□□l	□□	□□□□	□□□□
ln mine□□l □e□□	□□	□□□	□□□
ln mine□□l □e□□	□□	□□□□	□□□□
□□□□ o□□□□c	□□□	□□□	□□□
□□□□e□□□□	□□□	□□□□	□□□□
□□□lim□ □	□□□	□□□□	□□□□
□□i□□i□n	□□□	□□□□	□□□□
□□i□□i□n □□□□lim	□□□	□□□□	□□□□□
□□□□olic	□□□	□□□□	□□□□

Table 1

Probit estimates of the change in the probability of conflict with at least 25 battle-related deaths occurring between 1989 and 1999 given a unit increase in X.

Independent Variables	(1)	(2)	(3)	(4)	(5)
Ln Income/pc 1989	-.24** (-2.2)	-.15 (-1.2)	-.21 (-1.6)	-.17 (-1.2)	[illegible] (-2.2)
Ln Population 1988	.09* (1.7)	-.05 (-.68)	-.08 (-.93)	-.09 (-1.0)	-.05 (-1.2)
Ln Pop. Density 1988	.13* (1.9)	.17** (2.3)	.20** (2.3)	.19** (2.1)	.09** (2.3)
Ethnolinguistic fraction.	1.2 (1.3)	1.6 (1.5)	1.4 (1.3)	1.5 (1.4)	1.3* (1.8)
Ethnolinguistic fraction.^{2}	-1.3 (-1.1)	-1.4 (-1.2)	-.98 (-.83)	-1.1 (-.91)	-1.3 (-1.6)
Democracy 1988	.15** (2.6)	.13** (2.3)	.18*** (2.9)	.18*** (2.8)	.09* (1.9)
Democracy^2	-.01** (-2.4)	-.01** (2.2)	-.01** (-2.5)	-.01** (2.6)	-.003* (-1.8)
Previous War Dummy 1945-1988	.13 (.94)	.11 (.85)	.16 (1.2)	.16 (1.2)	.18* (1.7)
GNP growth/pc 1985-89	-.07** (-2.5)	-.03 (-1.2)	-.003 (-.11)	-.01 (-.23)	
Ln Total Natural Resources 1990	1.23 (.87)	1.9 (1.2)	-.131 (-.88)	-2.1 (-1.2)	
Ln Total Natural Resources^2	-.08 (.95)	-.12 (-1.3)	2.3 (1.4)	-.13 (-1.3)	
[illegible]	-.26*	-.27*	-.24	-.22	

	(-1.7)	(-1.8)	(1.4)	(-1.2)	
□n □ine□□l □e□o□□ce□ □	.03** (2.1)	□□□□ (2.4)	.03* (1.7)	.03 (1.5)	
Trade/GDP 1985-89		-.01** (-2.4)	-.01** (-2.5)	-.01** (-2.4)	-.01** (-2.0)
Oil Exporter Dummy			.77*** (3.8)	.76*** (3.4)	.47* (1.9)
Ln Rural Population Density 1988				.04 (.44)	
Wald $\chi 2$	44.6	53.0	51.0	50.1	51.3
p-value	.0000	.0000	.0000	.0000	.0000
Log likelihood	-32.4	-30.3	-27.2	-27.0	-56.3
Observed p	.40	.40	.40	.41	.40
Predicted p	.32	.30	.30	.31	.35
N	77	77	77	76	119

*denotes significance < .10, ** denotes significance < .05, and *** denotes significance < .01

Huber-White corrected standard errors computed in all tests

Table 2

Probit estimates of the change in the probability of conflict with at least 25 battle-related deaths occurring between 1989 and 1999 given a unit increase in the X variables.

Independent Variables	(1)	(2)	(3)	(4)
Ln Income/pc 1989	-.19**	-.18**	-.14**	-.21***
	(-2.3)	(-2.1)	(-2.3)	(-3.8)
Ln Population 1988	-.05	-.01	-.003	.07**
	(-1.2)	(-.24)	(-.01)	(2.5)
Ln Pop. Density 1988	.13***	.15***	.06**	.04
	(3.1)	(3.1)	(2.0)	(1.3)
Ethnolinguistic fraction.	1.9***	2.1***	1.1**	.65
	(2.6)	(2.8)	(2.0)	(1.2)
Ethnolinguistic fraction.^{2}	-1.8**	-1.9**	-1.1*	-.77
	(-2.3)	(2.3)	(-1.8)	(-1.1)
Democracy 1988	.07	.05		
	(1.5)	(1.1)		
Democracy^2	-.003	-.002		
	(-1.5)	(-1.1)		
Previous War Dummy	.22*	.25**	.20**	.21**
	(1.9)	(1.9)	(2.0)	(2.2)
Avg. Trade/GDP 1985-89	-.01***	-.01**	-.01**	
	(-2.6)	(-2.3)	(2.0)	
Oil Exporter Dummy	.53***	.49**	.41*	.39
	(2.6)	(2.0)	(1.9)	(1.5)
%Muslim	.004**	.005**		
	(2.1)	(2.5)		
%Christian	.01*	.006		
	(1.7)	(1.3)		

%Christian x %Muslim	-.001** (2.1)	-.001** (-2.3)		
%Catholic		.004* (1.8)		
Wald $\chi 2$	67.3	64.9	46.2	35.4
p-value	.0000	.0000	.0000	.0000
Log likelihood	-50.8	-49.2	-61.5	-66.5
Observed p	.40	.40	.35	.35
Predicted p	.34	.32	.27	.29
N	119	119	139	139

*denotes significance < .10, ** denotes significance < .05, and *** denotes significance < .01
Huber-White corrected standard errors computed in all tests

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