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**‘THE FRIGHTFUL INADEQUACY OF MOST OF
THE STATISTICS’:
A CRITIQUE OF COLLIER AND HOFFLER ON
CAUSES OF CIVIL WAR**

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DISCUSSION PAPERS

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‘The Frightful Inadequacy of Most of the Statistics’ A Critique of Collier and Hoeffler on Causes of Civil War^{*}

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Introduction

Over the past five years numerous cross-national statistical studies have been conducted on the causes of civil war.¹ The most influential studies have been those by Paul Collier and Anke Hoeffler.² Their early work inspired many of the subsequent inquiries into the relationship between natural resource dependence and the onset of civil war,³ and their findings have been widely reported in media such as *The Financial Times*, *The Washington Post*, *The New York Times* and *The Economist*.⁴ Their work has also been widely cited in governmental and international reports on security and stability, including the recent reports of the Commission for Africa,⁵ the British Prime Minister’s Strategy Unit,⁶ and the United Nations Secretary-General’s High-Level Panel on Threats, Challenges and Change.⁷

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¹ For a selection of the quantitative studies on the causes and duration of civil war, see *Journal of Peace Research*, 39:4 (July 2002) and 41:3 (May 2004), and *Journal of Conflict Resolution*, 46:1 (February 2002) and 49:4 (August 2005).

² See, for example, Paul Collier & Anke Hoeffler, ‘Greed and Grievance in Civil War’, *Oxford Economic Papers*, 56:4 (2004), pp.563-595; ‘On the Incidence of Civil War in Africa’, *Journal of Conflict Resolution*, 46:1 (2002a), pp.13-28; ‘Greed and Grievance in Civil War’, *Working Paper Series WPS/2002-01*, Oxford: Centre for the Study of African Economies, Oxford University, 2002b; ‘Greed and Grievance in Civil War’, paper dated 21 October 2001, at www.worldbank.org/research/conflict/papers/greedgrievance_23oct.pdf; ‘Justice-Seeking and Loot-Seeking in Civil War’, 1999, at www.isnie.org/ISNIE99/Papers/collier.pdf. Also Paul Collier, ‘Economic Causes of Civil Conflict and Their Implications for Policy’, paper dated 15 June 2000a, at www.worldbank.org/research/conflict/papers/civilconflict.pdf; ‘Rebellion as a Quasi-Criminal Activity’, *Journal of Conflict Resolution*, 44:6 (2000b), pp.839-853; ‘Doing Well out of War’, paper prepared for the Conference on Economic Agendas in Civil Wars, London, 26-27 April 1999, at www.worldbank.org/research/conflict/papers/econagendas.pdf.

³ Michael L. Ross ‘What Do We Know about Natural Resources and Civil War?’, *Journal of Peace Research*, 41:3 (2004a), pp.337-356.

⁴ James Fearon, ‘Primary Commodity Exports and Civil War’, *Journal of Conflict Resolution*, 49:4 (2005), pp.483-484.

⁵ Commission for Africa, *Our Common Interest: Report of the Commission for Africa*, London: Commission for Africa, 2005. This report contains 42 references to Collier’s single- and co-authored work.

⁶ Prime Minister’s Strategy Unit, *Investing in Prevention: An International Strategy to Manage Risks of Instability and Improve Crisis Response*, London: Prime Minister’s Strategy Unit, Cabinet Office, 2005. This report contains 17 references to co-authored work by Collier and Hoeffler.

⁷ United Nations Secretary-General’s High-Level Panel on Threats, Challenges and Change, *A More Secure World: Our Shared Responsibility*, New York: United Nations, 2004, endnotes 16, 22 and 110.

In this paper I offer a critique of Collier and Hoeffler (C&H).⁸ I argue that their research is filled with empirical, methodological and theoretical problems that lead to unreliable results and unjustified conclusions. I present an overview of their method and findings and then discuss concerns regarding inappropriate proxies; unsubstantiated explanations of results; incomplete, inaccurate and biased data; and theoretical and analytical flaws that preclude an adequate understanding of the causes of civil war. The greatest problem is that C&H seek to ascertain the causes of civil war without studying civil wars, and attempt to determine the motives of rebels without studying rebels and rebellions. Their most prominent finding – that dependence on natural resources heightens a country’s risk of war because it affords rebels an opportunity for extortion – is not based on any evidence of rebel behaviour; it is an inference drawn from a correlation between the onset of civil war and the ratio of primary commodity exports to GDP. To borrow a felicitous phrase from Keynes, the C&H model suffers from a “frightful inadequacy of most of the statistics”.⁹

Overview of Collier and Hoeffler

C&H define civil war as an internal conflict where there have been at least 1,000 combat-related deaths per annum and where both government forces and an identifiable rebel organisation have suffered at least 5% of the fatalities. They examine 161 countries and 78 civil wars over the period 1960-1999. The sample and the definition of civil war are drawn from the Correlates of War project.¹⁰ C&H use the terms ‘civil war’ and ‘rebellion’ interchangeably.¹¹

C&H distinguish between political science and economic accounts of rebellion. Political science explains conflict in terms of motive: rebellion occurs when grievances are sufficiently acute that people want to engage in violent protest. Economic theory, on the other hand, regards rebellion as an industry that generates profits from looting so that insurgents are indistinguishable from bandits or pirates. Rebellions “are motivated by greed, which is presumably sufficiently common that profitable opportunities for rebellion will not be passed up”.¹² From this perspective the incidence of rebellion is explained by the circumstances that generate profitable opportunities. In short, according to C&H, political science and economics assume different rebel motivation (i.e. grievance versus greed) and offer different explanations for rebellion (i.e. atypical grievances versus atypical opportunities).

In order to explain rebellion and test the political science and economic theories, C&H begin by identifying quantitative indicators of grievance (e.g. grievance related to repression, political exclusion and economic inequality) and quantitative indicators of opportunity (e.g. opportunities to finance rebellion through extortion of natural resources, donations from diasporas, and subventions from foreign governments). They then conduct a regression analysis to determine which of the variables are statistically significant in relation to the onset

⁸ The critique is based mainly on C&H (2004), which extends and revises their earlier work, and on Collier (2000a), which provides a more elaborate theoretical exposition.

⁹ John Maynard Keynes, ‘Professor Tinbergen’s Method’, *Economic Journal*, 49:195 (1939), p.567. Keynes was referring to the problem of building regression models with unobservable variables such as expectations, estimated from badly measured data (David F. Hendry, ‘Econometrics – Alchemy or Science?’, *Economica*, 47:188 (1980), p.396).

¹⁰ The Correlates of War project and data can be viewed at www.correlatesofwar.org.

¹¹ C&H (2004).

¹² C&H (2004), p.564.

of civil war. On the basis of this analysis they develop an econometric model that predicts the outbreak of war.¹³

C&H find that the grievance variables of economic inequality, political repression, lack of democracy, and ethnic and religious polarisation are statistically insignificant in the onset of civil war. Ethnic dominance is the only significant grievance variable. With this exception, the factors that increase the risk of war are opportunity variables. They include low secondary school enrolment, low economic growth and low income per capita; a highly dispersed population; a large population; a high dependence on primary commodity exports, the risk peaking when these are 33% of GDP and then declining; and large diasporas, which substantially increase the risk of renewed conflict. Time is also a relevant factor: directly after a civil war there is a 32% probability of renewed war but the risk falls thereafter at around 1% per annum.¹⁴

C&H's overall finding is that:

political and social variables that are most obviously related to grievance have little explanatory power. By contrast, economic variables, which could proxy some grievances but are perhaps more obviously related to the viability of rebellion, provide considerably more explanatory power.¹⁵

With respect to the greed versus grievance debate, C&H conclude that opportunity as an explanation of conflict risk is consistent with the economic model of rebellion as motivated by greed; it is also consistent with grievance motivation as long as perceived grievances are sufficiently widespread to be common across societies and time; and “our evidence does not therefore imply that rebels are necessarily criminals”.¹⁶

Mixing apples and oranges: The problem of inappropriate proxies

In order to conduct a statistical analysis of the causes of civil war, C&H must find numerical indicators for each of their variables. In some cases this is not difficult. For example, they measure economic inequality by the Gini coefficient of income, the ratio of the top-to-bottom quintiles of income, and the Gini coefficient of land ownership. Many of the other variables cannot easily be captured numerically, however, and C&H must therefore find measurable proxies. In the examples that follow, the proxy does not capture the relevant variable and, as C&H occasionally concede, some of the proxies intended to test for opportunity could just as well be indicators of grievance.

- C&H believe that rebellions might be financed through rebel extortion of natural resources. Their proxy for natural resources, which include food, non-food agriculture, oil and other raw materials, is the ratio of primary commodity exports to GDP. This proxy in no way captures rebel extortion.¹⁷ Moreover, C&H note that primary

¹³ C&H (2004).

¹⁴ C&H (2004).

¹⁵ C&H (2004), p.563.

¹⁶ C&H (2004), p.589.

¹⁷ Aside from the question of extortion, it is not clear that primary commodity exports are a good proxy for natural resources where extraction, cultivation, infrastructure and transport are hampered by underdevelopment and conflict. Moreover, weak states that have poorly resourced customs authorities and little control over their borders are unlikely to have accurate export figures.

commodity exports could be linked to grievance since they might be associated with poor public service provision, corruption and economic mismanagement, in which case any increase in conflict risk might be due to rebel responses to poor governance rather than to financial opportunities for rebellion.¹⁸

- C&H suggest that rebellions might be financed through donations from diasporas. Their proxy for this opportunity variable is the proportion of a country's population living as emigrants in the United States. This proxy does not capture the financial contribution that diasporas make to rebels. It is more likely to indicate emigrants' dissatisfaction with one or another aspect of their country of origin.
- C&H propose that because rebel recruits must be paid and their cost may be related to the income foregone by enlisting as rebels, rebellions might occur when foregone income is unusually low. The proxies for foregone income are mean income per capita, male secondary schooling and the economic growth rate prior to the onset of war. Yet C&H admit that low per capita income could be an objective economic grievance.¹⁹ Low school enrolment could similarly be linked to grievance. Income per capita and school enrolment are most obviously indicative of a country's level of development, which might affect the risk of civil war in various ways.
- According to C&H, the opportunity for rebellion may be that "conflict-specific capital", such as military equipment, is unusually cheap. Their proxy is the time that has elapsed since the most recent previous war in a country, the assumption being that "the legacy of weapon stocks, skills, and organisational capital will gradually depreciate".²⁰ This assumption is unjustified for several reasons: regional conflict zones may be awash in inexpensive light weapons, the armament of choice in many civil wars;²¹ the level of military skill and capacity needed for a successful rebellion is relative to the government's military skill and capacity, which might be low; rebels can acquire military equipment, training and support from allies in neighbouring states; and some rebel movements are able to seize government armaments.²² In any event, the proxy of time elapsed since the previous war does not capture the cost of military equipment.
- C&H regard financial support to rebels from foreign governments as a possible opportunity variable. Their proxy is the Cold War because during that period the superpowers supported rebellions in countries allied to the opposing power. This proxy does not capture support to rebels from neighbouring states.
- Another opportunity variable is an atypically weak government military capability. C&H's proxies for this variable include mountainous terrain and geographic dispersion of the population, both of which C&H consider to be favourable to rebels. These features may have military relevance in some cases but there is no necessary relationship between them and government military capability, which depends on

¹⁸ C&H (2004), p.567.

¹⁹ C&H (2004), p.569.

²⁰ C&H (2004), p.569.

²¹ On the proliferation of light weapons in conflict zones, see various reports of the Small Arms Survey, Graduate Institute for International Studies in Geneva, at www.smallarmssurvey.org.

²² This was true, for example, of the Eritrean People's Liberation Front (David Pool, 'The Eritrean People's Liberation Front', in Christopher Clapham (ed.), *African Guerrillas*, Oxford: James Currey, 1998, pp.26-27).

many factors, not least the wealth of a country. In addition, C&H note that population dispersion and mountainous terrain may be linked to grievance.²³

- C&H view ethnic and religious hatreds as grievance variables. Yet their proxies measure heterogeneity and do not capture hatred or the kind of ethnic and religious discrimination and propaganda that might generate hatred. As C&H put it: “Although such hatreds cannot be quantified, they can evidently only occur in societies that are multi-ethnic or multi-religious and so our proxies measure various dimensions of diversity”.²⁴
- Political exclusion is another possible grievance variable. The proxy used here is “ethnic dominance”, which C&H define as occurring if the largest ethnic group in a country constitutes 45% to 90% of the population. This proxy is a demographic indicator that does not capture political dominance or exclusion.
- C&H include political repression as an objective grievance. They measure it according to the Polity III dataset, which quantifies political rights and autocracy,²⁵ and the Freedom House index of political freedom.²⁶ The problem here is that repression should be viewed not only as an indicator of grievance but also as an indicator of low opportunity. Intense repression is a severe psychological and physical deterrent to rebellion and is used by states to crush nascent and weak rebel groups. This is a crucial specification error in C&H’s model. As discussed below, it leads to substantial errors in their conclusions.

Three general problems are evident at this stage. First, in the examples cited above C&H’s proxies are arbitrary and often spurious. The sense of arbitrariness is heightened if we compare the proxies used by C&H in different studies. For example, Christopher Cramer points out that C&H use income inequality as a proxy for potential government defence spending in one study and as a proxy for grievance in a later study, and dependence on primary commodities stands for motive in one study and for opportunity in another.²⁷ At times income per capita is a proxy for government’s revenue-raising and defence spending capacity,²⁸ and elsewhere a proxy for the cost of paying rebel recruits.²⁹ Economic growth is variously a grievance variable,³⁰ an opportunity variable linked to the availability of jobs,³¹ and an opportunity variable associated with rebel labour costs.³²

Second, the meaning that C&H assign to the proxies is too restrictive. Because their investigation focuses on opportunity and grievance as competing explanations for rebellion,

²³ C&H (2004), p.588.

²⁴ C&H (2004), p.571. For a technical discussion on ethnic and religious ‘fractionalisation’ and ‘polarisation’, the two indices of heterogeneity used by C&H (2004), see José G. Montalvo & Marta Reynal-Querol, ‘Ethnic Polarization, Potential Conflict, and Civil War’, *American Economic Review*, 95:3 (2005), pp.796-816.

²⁵ For an overview and explanation of the Polity III dataset, see Keith Jagers and Ted Robert Gurr, ‘Tracking Democracy’s Third Wave with the Polity III Data’, *Journal of Peace Research*, 32:4 (1995), pp.469-482.

²⁶ The Freedom House indices and country ratings can be viewed at www.freedomhouse.org.

²⁷ Christopher Cramer, ‘*Homo Economicus Goes to War: Methodological Individualism, Rational Choice and the Political Economy of War*’, *World Development*, 30:11 (2002), pp.1851-1852.

²⁸ Collier (2000a), p.10.

²⁹ C&H (2004), p.569.

³⁰ C&H (1999), p.7.

³¹ C&H (2002a), p.16.

³² C&H (2004), p.569.

each of the variables is intended to capture a relevant factor in one of these categories. In reality though some of the variables might simultaneously reflect dynamics in both categories. For example, it is possible that economic growth and per capita income, which C&H associate with rebel labour costs, capture a range of opportunity and grievance factors that are linked to a country's level of development; and there is no doubt that political repression, which C&H associate with grievance, is also indicative of low opportunity when repression is intense.³³ It is likely too that some variables have different effects in different civil wars, as Michael Ross shows in relation to natural resources.³⁴

Third, much of what C&H seek to measure is not in fact being measured by the proxy in question and we cannot be sure what the proxies are actually capturing. This lack of certainty renders the results of the regression analysis ambiguous and impossible to explain without a proper inquiry. As discussed in the following section, C&H do not conduct such an inquiry. Many of their conclusions are merely a restatement of the dubious assumptions that gave rise to the proxies in the first place.

The chicken and the egg: The problem of inferring causality

It is a basic rule of statistical analysis that correlation does not imply causality. If two variables are correlated, causality might run in either direction so that X causes Y or Y causes X; causality might run in both directions if X and Y are mutually reinforcing; and the correlation might be due to a third variable that causes both X and Y. By way of illustration, per capita income and secondary school enrolment are highly correlated.³⁵ How is this to be explained where, say, both factors are low? It might be the case that low income is one of the causes of low school enrolment; that low school enrolment is one of the causes of low income; that both variables are low as a result of underdevelopment; that both variables are low because of war; or that a combination of factors accounts for the correlation. The point is that the relationship cannot be explained without a thorough investigation of the phenomena and the context.

C&H do not conduct such investigations. The conclusions they draw from their statistical analysis are speculative and they provide no solid basis for favouring their interpretations over plausible alternatives. Unanchored by evidence, the conclusions float precariously on a raft of untested assumptions. I present below four examples of this tendency in relation to opportunity variables, and then discuss C&H's finding that most of the grievance variables are insignificant.

The size of the diaspora

C&H find that the size of the diaspora is not statistically significant in relation to an initial war but that it is significant in relation to the renewal of hostilities.³⁶ They conclude that a large diaspora increases the risk of repeat conflict because "diasporas preserve their own

³³ C&H (2004).

³⁴ Michael Ross, 'How Does Natural Resource Wealth Influence Civil War? Evidence from 13 Cases', *International Organization*, 58:1 (2004b), pp.35-67.

³⁵ C&H (2004), pp.573-4.

³⁶ When testing the diaspora variable, C&H (2004), pp.574) reduce the size of their sample from 78 to 29 wars because of missing data. They do not indicate what proportion of the 29 cases are repeat wars but it is necessarily small in relation to the sample as a whole.

hatreds: that is why they finance rebellion”.³⁷ The finding is thus interpreted as evidence supporting the opportunity thesis.³⁸

All of this is speculative, with one conjecture flowing from another: the assertion that diasporas retain their hatreds is an unproven explanation for why diasporas fund rebels; the claim that diasporas fund rebels is itself an unproven explanation for why a large diaspora increases the risk of repeat conflict; the claim that a large diaspora heightens the risk of repeat conflict is an unproven inference drawn from a positive correlation between renewed civil war and the proportion of a country’s population living as emigrants in the US; and the assumption that the size of a country’s diaspora in the US is a good proxy for that country’s diaspora as a whole is questionable. In an earlier work Collier avoids this assumption and describes the risk of renewed civil war as relating more narrowly to countries with an “unusually large American diaspora”.³⁹

C&H construct a mathematical model that leads them to conclude that large diasporas are a cause of the repeat wars rather than a consequence of the previous wars.⁴⁰ Here as elsewhere, C&H infer causality from correlation and confuse the cause of a war with the means by which it is financed. They do not consider the most plausible causal relationship, which is that preserved hatred and unrequited grievance from the first war are the causes of both diaspora support to rebels and the high risk of renewed hostilities. If indeed diasporas do fund rebels because of ‘preserved hatreds’, then that surely indicates a strong sense of grievance.

The effect of time

C&H find that the risk of renewed conflict declines over time as peace is maintained. Directly after a civil war there is a 32% probability of renewed fighting but the risk falls at around 1% per annum thereafter.⁴¹ C&H conclude that this reflects the gradual depreciation of rebellion-specific capital and hence an increasing cost of rebellion. They reject the alternative explanation that war-induced hatred gradually fades over time, arguing that the “diaspora effect”, whereby a large diaspora slows the healing process by financing rebels and offsetting the depreciation of rebellion-specific capital, lends support to the opportunity interpretation.⁴²

Here, too, the argument rests on speculative claims: C&H do not demonstrate that diasporas consistently or generally fund rebels; they do not prove that diasporas slow the healing process; they do not prove that the proxy of time captures the cost of rebellion-specific capital; and they do not prove that the depreciation of rebellion-specific capital from the previous war is a critical factor. These are all untested assumptions.

The declining risk of renewed conflict over time might reflect two quite different dynamics, neither of which is addressed by C&H: low structurally-induced grievance following a successful peace settlement; and low opportunity as a result of a decisive military victory by government or rebels. In a cross-national statistical study of civil wars that ended between 1945 and 1996, Barbara Walter finds that renewed war is likely to have less to do with the attributes of the previous war than with contemporary incentives for individuals to join a rebel organisation. Two conditions are especially important: individual hardship or severe

³⁷ C&H (2004), p.575.

³⁸ C&H (2004), p.588.

³⁹ Collier (2000a), p.6.

⁴⁰ C&H (2004), pp.574-575.

⁴¹ C&H (2004), p.581.

⁴² C&H (2004), p.589.

dissatisfaction with one's situation; and the absence of non-violent means for change.⁴³ Walter's findings suggest that a more open political system and a higher quality of life significantly reduce the risk of renewed war regardless of what happened in the previous conflict. The preceding conflict is relevant only in so far as governments that fought a short war against one set of challengers, or that ended a previous war in partition, are significantly more likely to face a violent challenge from a new rebel group.

The cost of rebel soldiers

C&H find that the proxies intended to capture the cost of paying rebel recruits – male secondary school enrolment, per capita income and economic growth – are significant and reduce substantially the risk of conflict as they rise. C&H interpret this as evidence that the opportunity for war increases when the cost of paying rebel soldiers is low. They doubt the alternative interpretation that low earnings are a source of grievance because they find that income inequality is insignificant. They do not consider the possibility that the proxies are capturing underdevelopment as a structural risk factor that heightens the likelihood of war through various effects.

Nor do C&H prove that the cost of paying rebel soldiers is a key determinant in the incidence of civil war. The fact that soldiers must be paid does not mean that the decision to embark on or refrain from war is based on the cost of these payments, which may have little or no bearing on the causes of rebellion. Anticipating such scepticism, C&H argue as follows to support their claim that rebellions may occur when the foregone income of rebel soldiers is unusually low:

Since non-economists regard this [claim] as fanciful we give the example of the Russian civil war. Reds and Whites, both rebel armies, had four million desertions (the obverse of the recruitment problem). The desertion rate was ten times higher in summer than in winter: the recruits being peasants, income foregone were [sic] much higher at harvest time (Figes, 1996).⁴⁴

This passage refers to the dynamics of a war that is underway and does not support the proposition that rebellions may occur when foregone income is unusually low. If Figes' weighty book on the Russian revolution testifies to anything for present purposes, it is that the causes of civil war cannot be boiled down to a simplistic binary choice between grievance and opportunity. Nevertheless, Figes makes clear that the roots of the war lay in structural and political factors associated with grievance. These factors included:

growing conflict between a society rapidly becoming more educated, more urban and more complex, and a fossilized autocracy that would not concede its political demands [for liberal reform] ... [and] several decades of growing violence, human suffering and repression, which had set the Tsar's people against his regime.⁴⁵

⁴³ Barbara F. Walter, 'Does Conflict Beget Conflict? Explaining Recurring Civil War', *Journal of Peace Research*, 41:3 (2004), pp.371-388.

⁴⁴ C&H (2004), p.569.

⁴⁵ Orlando Figes, *A People's Tragedy: The Russian Revolution 1891-1924*, London: Jonathan Cape, 1996, pp.13-15.

Primary commodities

C&H find that “primary commodity exports substantially increase conflict risk”.⁴⁶ When the other variables are held at their mean, a rise in natural resource dependence from zero to the peak danger of 33% increases a country’s risk of civil war from 1% to 22%.⁴⁷ C&H attribute the heightened risk to “the opportunities such commodities provide for extortion, making rebellion feasible and perhaps even attractive”.⁴⁸ This is the only result that C&H construe, albeit tentatively, as support for the greed thesis. They find almost no statistical support for the grievance thesis, and much statistical support for the opportunity thesis, but they recognise that opportunity is consistent with both greed and grievance motivations.⁴⁹ In C&H’s analysis, the economic theory that rebellion is motivated by greed hangs on the single tendril of a correlation between civil war and the ratio of primary commodity exports to GDP.

When C&H state that “primary commodity exports substantially increase conflict risk”, they are not describing their result accurately. Since the relevant variable is the ratio of primary commodity exports to GDP, and not primary commodity exports per se, the denominator is as important as the numerator and the heightened risk of war is linked to a high ratio in this regard. C&H’s interpretation of the result as being due to “the opportunities such commodities provide for extortion” is therefore logically unsound. Logically in terms of their finding, a country with abundant natural resources would have a low risk of rebellion if primary commodity exports were only a small fraction of GDP; a country with a low level of natural resources would have a high risk of rebellion if primary commodity exports amounted to one-third of GDP; and a country with a given level of natural resources and a varying GDP over time would have a varying risk of war.

C&H do not attempt to prove their claim about rebel extortion. They insist that there is plenty of case study evidence supporting the extortion interpretation but refer to only one source, Michael Klare’s book on natural resource wars.⁵⁰ Klare does not in fact provide the corroboration implied by C&H. He identifies diverse causes of internal wars over minerals and timber, with grievance chief among them. He views these wars variously as being motivated by a desire to reap the financial benefits of resource exploitation; as interwoven with long-standing ethnic, political and regional antagonisms; as provoked when governments exploit resources in areas occupied by indigenous people or ethnic minorities; and as most likely to occur in developing countries where there are few sources of wealth and governments are weak and divided, widely seen as corrupt, and unable to mediate competition for valuable resources by legal and regulatory means.⁵¹ Especially vulnerable are former colonies where the occupying power destroyed local institutions, plundered the countryside and was replaced by an autocratic regime with close ties to the military and/or a particular ethnic constituency, depriving minorities of access to political power and profitable economic activity; in these situations minorities often see no alternative but to engage in armed rebellion and once a rebellion has erupted, the fighting often evolves into a resource conflict.⁵²

⁴⁶ C&H (2004), p.588.

⁴⁷ C&H (2004) find that this relationship is non-linear such that increases in resource dependence beyond 33% lead to a declining risk of civil war.

⁴⁸ C&H (2004), p.588.

⁴⁹ C&H (2004), p.589.

⁵⁰ Michael Klare, *Natural Resource Wars: The New Landscape of Global Conflict*, New York: Metropolitan Books, 2001.

⁵¹ Klare (2001), pp.190-212.

⁵² Klare (2001), p.193.

There is ample evidence of rebel extortion of natural resources.⁵³ However, this does not prove that rebels are motivated by greed or that civil war is caused by greed. Rebels who are motivated by grievance also need to finance their operations and might do so through extortion. In these situations the extortion is a consequence rather than a cause of the rebels' decision to embark on war. In a qualitative study of the civil wars that occurred in the 1990s in the gemstone-producing countries of Afghanistan, Angola, Burma, Cambodia, the Democratic Republic of Congo, Liberia and Sierra Leone, Ross finds that in most cases the trade in stones was causally unrelated to the initiation of conflict and only became salient long after the war had begun. In most cases the causal arrow ran in the opposite direction, the conflict helping to make the rebel groups dependent on gemstone sales for revenue. The two exceptions, where rebels may have been motivated by the lure of gemstone wealth, were Sierra Leone and possibly the Congo.⁵⁴

Finally, C&H's result on primary commodity exports does not appear to be robust. For example, when Buhaug and Lujala use sub-national data relating to the specific site of rebellion, they find that most of the 252 armed conflicts in the Uppsala armed conflict dataset are not located in areas rich in natural resources.⁵⁵ In a review of fourteen cross-national econometric studies on natural resources and conflict, Ross notes that efforts by other scholars to replicate C&H's result have often failed.⁵⁶ He concludes that the claim that primary commodity exports are linked to civil war is fragile and should be treated with caution. He discerns four regularities in the studies under review: oil increases the risk of conflict, especially separatist conflict; 'lootable' commodities like gemstones and drugs do not make conflict more likely although they tend to lengthen its duration; there is no evident link between legal agricultural commodities and civil war; and the association between the onset of civil war and primary commodities as a broad category of different goods is not robust. Beyond these patterns, there is little consensus on the validity of the resource-civil war correlation. Ross attributes the disparate findings to differences in the civil war datasets used by different researchers and to the categories of 'civil war' and 'primary commodities' being overly broad.

The unbearable lightness of grievance

Having considered some of C&H's results on opportunity variables, I turn now to their finding that most of the grievance variables are insignificant. There are five concerns in this regard. First, as discussed previously, a number of C&H's proxies fail to capture the designated variable. In these cases no meaningful judgement can be made about the variable's statistical or political significance or lack thereof. With respect to the grievance variables, for example, the finding that indices of ethnic and religious *heterogeneity* are insignificant tells us nothing about the prevalence and salience of ethnic and religious *discrimination* in the incidence of civil wars.

Second, in some instances the absence of a statistical correlation between grievance variables and the onset of civil war may be due to C&H's use of national data that does not capture

⁵³ See, for example, Ross (2004b).

⁵⁴ Ross (2004b). This summary of the findings is taken from Ross (2004a), p.345.

⁵⁵ Halvard Buhaug & Päivi Lujala, 'Accounting for Scale: Measuring Geography in Quantitative Studies of Civil War', *Political Geography*, 24:4 (2005), p.410. The Uppsala Conflict Data Project has a benchmark of 25 annual battle-deaths and distinguishes between 'minor armed conflict', 'intermediate armed conflict' and 'war'. See Gleditsch *et al.*, 'Armed Conflict 1946-2001: A New Dataset', *Journal of Peace Research*, 39:5 (2002), pp.615-637 and the Project website at www.pcr.uu.se.

⁵⁶ Ross (2004a).

politically significant grievance at the sub-national level.⁵⁷ For example, the Gini coefficients of land and income inequality for the national population might not reveal the inequality and deprivation experienced by the community from which the rebels emerged. Similarly, political repression and discrimination scores for a country might fail to reflect the marginalisation and persecution of a minority group that embarks on rebellion. If the aim of the study is to determine the causes of rebellion, then examination of the particular circumstances of the rebels is essential. The importance of this point is highlighted by Buhaug and Lujala's observation that as many as 40% of the 252 armed conflicts between 1946 and 2001 had a spatial extent of less than 10% of the country in which they occurred.⁵⁸

Third, C&H seek to identify general patterns in their sample as a whole, implicitly assuming a substantial degree of homogeneity among civil wars. This assumption might be unwarranted and C&H might miss trends that are politically significant in a statistically insignificant number of cases. For example, if land inequality were a major cause of civil war in some countries but not others, this might not show up in C&H's regression analysis. Likewise, even if religious and ethnic tensions were not statistically significant in relation to the whole sample, it would not follow that they are always unimportant politically. Collier's assertion that "rebellion is unrelated to objective circumstances of grievance" is therefore too broad and emphatic.⁵⁹ It might be incorrect in respect of some variables and certain regions or in respect of some variables and certain types of conflict (e.g. ethnic conflicts, peasant rebellions, anti-colonial wars, separatist struggles etcetera).

Fourth, Collier mistakenly infers from the absence of a correlation between grievance and civil war that there is an absence of causality between grievance and civil war:

Analysts often reason back from the political discourse during conflict and deduce that the war is the consequence of particularly intense political conflict, based in turn upon particularly strong reasons for grievance. Yet the intensity of objective grievance does not predict civil war. Many societies sustain intense political conflict for many years without this developing into war. Political conflict is universal, whereas civil war is rare. My argument is that where rebellions happen to be financially viable, wars will occur.⁶⁰

The statistical finding that objective grievance fails to predict civil war does not imply the absence of a causal relationship between objective grievance and war. This is because the incidence of civil war depends not only on the incentives to rebellion but also on the formidable obstacles to rebellion. Rebellion is constrained by some of the opportunity variables identified by C&H, such as government's military capability, and by a range of other factors: it entails crossing a forbidding moral and psychological threshold into the realm of killing; it entails extreme personal risk, disruption and danger, not only to rebel soldiers but often also to their families and communities; it requires dynamic leaders who are capable of effective mobilisation, organisation and military engagement; and it is invariably confronted by the repressive machinery of the state. As a result of these factors, there can be both a strong causal relationship between grievance and civil war and a low incidence of civil war.

⁵⁷ I thank Jochen Mankart for alerting me to this issue. Buhaug & Lujala (2005) demonstrate the relevance of scale for geographic variables like terrain and natural resources.

⁵⁸ Buhaug and Lujala (2005), p.410.

⁵⁹ Collier (2000a), p.4.

⁶⁰ Collier (2000a), p.13.

Fifth, Collier's assertion that rebellion is unrelated to objective circumstances of grievance is egregiously false with respect to repression, which C&H view as a grievance variable and find to be statistically insignificant. How can repression be unrelated to the onset and incidence of rebellion when it is one of the primary means by which states deter, contain and crush rebellion? The absence of a positive correlation between repression and the outbreak of war may be due precisely to the fact that repression is directly related to the *prevention* of rebellion.⁶¹ The absence of a negative correlation might be due to the fact that C&H's sample of wars is limited to conflicts that had at least 1,000 combat-related deaths per annum; rebellions are excluded from the sample if they had a lower level of fatalities because repression contained or smashed a rebel group (or for any other reason). C&H's result on repression is less plausible than the statistical finding that intermediate political regimes with some openness and some repression have a much higher risk of civil war than either strong democracies or harsh autocracies.⁶²

A rigorous inquiry into the impact of repression would aim to identify the cases where repression had snuffed out a rebellion as well as the cases where it had contributed to rebellion; an example of the latter is apartheid South Africa, where the minority regime's use of force against non-violent protests over several decades contributed to the African National Congress's decision to engage in armed struggle in 1961. Since repression is unlikely to be an 'independent' variable in reality, the inquiry would also seek to identify the grievances that generated the protest that was met by repression.

Conclusion

C&H's overall finding in their investigation of the causes of civil war is that the political and social variables most obviously related to grievance have little explanatory power whereas the economic variables more obviously related to the viability of rebellion have considerable explanatory power.⁶³ This finding is unjustified given the nature of C&H's method. Regression analysis indicates the presence or absence of statistical correlations between the dependent variable and the independent variables. Neither the presence nor the absence of a correlation is self-explanatory, and none of the variables has explanatory power in its own right. Each statistical result requires an explanation. C&H's explanations are speculative, based on conjecture rather than evidence, and they do not demonstrate the validity of their conclusions.

Who's counting? The problem of inaccurate, missing and biased data

In any quantitative study the validity of the results might be affected by the quality of the data that constitute the inputs. Inaccurate, missing and biased data might lead to erroneous results and mistaken conclusions. I consider below these problems in relation to C&H.

⁶¹ C&H (2004) recognise that government's capacity to thwart rebellion is an opportunity variable but they focus only on its military capability, ignoring its legislative, enforcement, policing, intelligence and surveillance capabilities. As noted above, moreover, C&H's proxies do not even capture government's military capability.

⁶² Håvard Hegre *et al.*, 'Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816-1992', *American Political Science Review*, 95:1 (2001), pp.33-48.

⁶³ C&H (2004), p.563.

Reliability of data

The first set of potential problems relates to the availability and reliability of country data. Many developing countries do not have accurate and complete data on their GDP, population size and other features because their governments lack the financial resources and logistical means to gather and collate accurate figures. As discussed further below, John Dawson and his colleagues show that data quality varies directly with the wealth of a country; unsurprisingly, poor countries have poor quality data.⁶⁴ In countries wracked by war, the problems are bound to be chronic.

We might therefore expect data on African states to be both incomplete and of low quality. Douglas Lemke demonstrates that this is indeed the case and that it has a harmful effect on quantitative research. He shows that Africa is systematically underrepresented in statistical international relations analysis because of missing information on regime-type and power; regime-type data is seventy times more likely to be absent for dyads with at least one African state than for dyads composed exclusively of developed states.⁶⁵ In the Penn World Tables (PWT), an authoritative source of information on the economic features of states, almost one-quarter of the annual observations for African countries in the period 1950-1988 lack GDP data.⁶⁶

In addition to the problem of missing data, Lemke notes that the PWT and Lewis Fry Richardson's deadly quarrels dataset include assessments of the quality of their data for different countries, making it possible to confirm that the Africa data is consistently of poor quality. He adds that it would be astonishing if the Correlates of War and Polity datasets were not characterised by similar systematic variation in the quality of data. Lemke concludes that some of the major statistical findings in international relations research on war might be artefacts of this variation in data quality.

Lemke's study casts doubt on the reliability of C&H's results since roughly 40% of the civil wars in their sample took place in African countries and many others occurred elsewhere in the developing world. In addition, C&H use the Polity dataset on political systems and repression; the Correlates of War dataset on civil wars; and the PWT data on GDP in determining per capita income, economic growth and dependence on natural resources. The doubts are heightened if we consider the data bases more carefully.

Dawson *et al.* maintain that although the PWT contain the best international economic data for many purposes, the available information for a large number of countries is extremely imprecise. The PWT compilers assign to each country's data a quality grade of A, B, C or D on a descending scale from best to worst.⁶⁷ Dawson *et al.* find that these grades correlate strongly with a country's level of development, with less developed countries having lower quality data. They calculate that at least two-thirds of the country datasets have margins of error of approximately 20% to 40%. This can have a substantial deleterious effect on the empirical results of a cross-country study.⁶⁸

⁶⁴ John Dawson *et al.*, 'Economic Information Versus Quality Variation in Cross-Country Data', *Canadian Journal of Economics*, 34:4 (2001), pp.988-1009.

⁶⁵ Douglas Lemke, 'African Lessons for International Relations Research', *World Politics*, 56:1 (2003), pp.120-124.

⁶⁶ Lemke (2003), fn11.

⁶⁷ The PWT data and quality ratings can be viewed on the website of the Centre for International Comparisons, University of Pennsylvania, at <http://pwt.econ.upenn.edu/>.

⁶⁸ Dawson *et al.* (2001), pp.989-990.

As noted above, the Correlates of War definition of civil war includes a threshold of at least 1,000 combat-related deaths per annum and this figure is used to code the start and the end of the wars. Statistics on fatalities might be even less accurate than GDP data. In the chaotic and dangerous circumstances of war, deaths may go unreported and uncounted, it may be impossible to distinguish between combat- and non-combat-related deaths, and both government and rebels may have sound political and military reasons to inflate or downplay the number of casualties. Media reports from which the data are drawn may be influenced by official and non-official propaganda, the intensity of fighting and other impediments to access by journalists, and the extent to which the war is covered by Western media.⁶⁹ Aside from the unreliability of the data, Sambanis registers concerns about the accuracy and consistency of the coding of civil war deaths in the Correlates of War project.⁷⁰

Researchers' decisions

Whereas the problems raised above relate to the availability and reliability of data, a second set of potential problems relates to decisions made either by the researchers who compile the datasets or by the researchers who use them. I consider these problems mainly with reference to the Correlates of War data base, which C&H use for their sample of civil wars.

The threshold of 1,000 combat-related deaths per annum is an arbitrary benchmark. Arguably, it can be defended on the grounds that some benchmark is required, a sizable number of fatalities is implied by the notion of 'war', and civil conflicts with fewer deaths do not amount to wars. The threshold is much harder to justify in relation to rebellions. If we want to understand the causes of rebellion, the benchmark is unduly restrictive.⁷¹ The immediate implication for C&H's study is that their list of civil wars is a non-random sample of the rebellions that occurred between 1960 and 1999. Rebellions with a lower level of fatalities are either excluded completely or excluded until such time as they reach the definitional threshold. A relatively low level of fatalities might be due to the size or geography of a country, the strategies employed by the belligerents, or the balance of military power between the government and the rebels.

The choice of threshold might have a major impact on C&H's results. According to Ross, for example, Hegre's findings on resource dependence match those of C&H when he uses a similar database and the 1,000-death benchmark, but when he uses a lower threshold of 25 deaths per annum he finds that primary commodity exports have no influence on the likelihood of civil conflict. This might suggest that natural resource dependence affects the intensity rather than the outbreak of conflict.⁷²

⁶⁹ Human Security Centre, 'Mapping and Explaining Civil War: What to Do about Contested Datasets and Findings? Workshop Report', Oslo, Norway, 18-19 August 2003, at www.humansecuritycentre.org/workshops/oslo/osloconcept.pdf, pp.3-6.

⁷⁰ Nicholas Sambanis, 'A Note on the Death Threshold in Coding Civil War Events', *The Conflict Processes Newsletter*, June 2001, at <http://mailer.fsu.edu/~whmoore/cps/newsletter/june2001>. It would also be worth looking at the reliability of the data on income inequality, political repression, primary commodity exports and population size. Population figures are especially important because C&H use population size when determining the size of the diaspora, ethnic dominance, geographic dispersion of the population, school enrolment, and income per capita.

⁷¹ As noted above, the Uppsala armed conflict dataset has a benchmark of 25 annual battle-deaths (Gleditsch *et al.*, 2002).

⁷² Ross (2004a), p.341.

The Correlates of War data indicate the starting date of each war. By definition, this date marks the point at which the conflict met the criterion of 1,000 deaths per annum. The accuracy of the date has enormous implications for C&H's results since the measurement of many of their variables is time specific. In the regression analysis C&H compare five year periods in which a civil war broke out with equivalent periods that were conflict-free, and they measure the variables that are not time invariant either for the first year of the period or during the preceding five years. If a rebellion began long before it reached the civil war threshold, then C&H's measurements may be incorrect.

The concern here is not limited to incorrect measurements. It also has a crucial bearing on endogeneity and the possibility of reverse causality. The endogeneity problem arises where, for example, low income is correlated with war not because it preceded and contributed to the outbreak of war but because it is a consequence of war. In order to avoid this problem, C&H measure income, economic growth and some of the other variables during the five year period before the year in which a war commenced.⁷³ This solution fails, however, if the rebellion or civil strife began much earlier than that.

C&H's mistake is to assume that endogeneity is limited to preceding wars:

Evidently since we are measuring income prior to war the endogeneity only arises if a country has more than one war. Since the first war will have reduced income, for subsequent wars the correlation between income and war could in principle reflect this reverse causation.⁷⁴

C&H test for this by excluding 'repeat wars', but they do not control for lower level hostilities. This can lead to mistaken conclusions, as Ross illustrates in relation to natural resource dependence. Whereas C&H maintain that resource dependence heightens the risk of war, Ross suggests that civil wars might cause resource dependence by forcing a country's manufacturing sector to flee, leaving its less mobile resource sector as the major force in the economy by default. The danger of reverse causality is not eliminated by using lagged independent variables because "civil wars can be preceded by years of low-level violence that drives off manufacturing firms, producing a higher level of resource dependence before the conflict officially commences".⁷⁵

Another difficulty arises if data for a particular variable are missing for certain countries. C&H exclude those countries from their sample when testing the variable.⁷⁶ For example, when they test the diaspora variable the number of wars is reduced to 29, which is 37% of the total number of wars in the sample. In the baseline model from which C&H make their predictions, the reduced sample is 46 wars (59% of the total), of which 24 are first-time wars and 22 are repeat wars. This subset might be biased and the results skewed if the countries omitted because of missing data were not random but constituted a distinct category. In light of the earlier discussion, African countries could comprise such a category. Ross suggests that C&H's deletions lead to bias that overstates the impact of primary commodities.⁷⁷ By his calculations, C&H's excluded conflicts are less dependent on primary commodity exports than the included conflicts; the deletions consequently raise the mean primary commodity

⁷³ C&H (2004), p.573.

⁷⁴ C&H (2004), p.587.

⁷⁵ Ross (2004a), p.338.

⁷⁶ C&H (2004), pp.572-582.

⁷⁷ Ross (2004a), pp.347-348. Ross is analysing C&H (2002b).

exports-to-GDP ratio for the remaining conflicts and could result in a spurious correlation between these exports and the likelihood of conflict.

Finally, Buhaug and Lujala maintain that quantitative studies on civil war are wrong to rely on country-level data for geographic variables like natural resources, population distribution, terrain and ethnic composition. Country statistics might be poor approximations of conflict zones because these variables have substantial sub-national variations and most civil wars are geographically limited to small parts of the country.⁷⁸

Conclusion

As a result of the problems associated with geographical scale, endogeneity and inaccurate and missing data, C&H's study is vulnerable to serious measurement errors, biased samples and artificial findings.⁷⁹ Whereas the inferences that C&H draw from the correlations may be suspect in the absence of convincing evidence, the correlations themselves are suspect if the data are unreliable.

On the face of it, econometric analyses of civil wars have the virtues of objectivity, precision and rigour. Yet researchers who use this method have to make measurement choices in relation to sample size, missing data, datasets, coding issues, sub-divisions within the independent variables, and the scale of measurement. These choices can lead to substantially different findings. For example, C&H's result on repression is quite different from that of Hegre *et al.*;⁸⁰ their finding that mountainous terrain is insignificant is opposed by Fearon and Laitin;⁸¹ some of their results on ethnic heterogeneity are the opposite of those reached by Montalvo and Reynal-Querol;⁸² and their result on natural resources is not supported by Fearon and Laitin, Elbadawi and Sambanis or Montalvo and Reynal-Querol.⁸³ Buhaug and Lujala observe that:

the empirical evidence for direct connection between natural resource abundance and civil war is far from impressive, and findings seem to vary with the operationalization of the resource proxy.⁸⁴

In addition to the measurement choices, there is subjectivity in selecting variables and proxies and in drawing inferences from the results. While every researcher might make legitimate decisions and strive for precision and rigour, the overall picture is one of multiple choices and discrepancies, conveying a strong sense of subjectivity, arbitrariness and imprecision.⁸⁵

⁷⁸ Buhaug & Lujala (2005).

⁷⁹ C&H (2004).

⁸⁰ Hegre *et al.* (2001).

⁸¹ James Fearon & David Laitin, 'Ethnicity, Insurgency, and Civil War', *American Political Science Review*, 97:1 (2003), pp.75-90.

⁸² Montalvo & Reynal-Querol (2005).

⁸³ Fearon & Laitin (2003); Ibrahim Elbadawi & Nicholas Sambanis, 'How Much War Will We See? Explaining the Prevalence of Civil War', *Journal of Conflict Resolution*, 46:3 (2002), pp.307-334; Montalvo & Reynal-Querol (2005), p.805. Using the civil war dataset of the Peace Research Institute of Oslo, Montalvo & Reynal-Querol (2005, pp.805-808) find, like C&H (2004), that ethnic fractionalisation is insignificant but, unlike C&H (2004), that ethnic polarisation is significant and ethnic dominance is insignificant.

⁸⁴ Buhaug & Lujala (2005), p.402.

⁸⁵ For a technical discussion on the problem of subjectivity in econometric analysis, see Edward E. Leamer, 'Let's Take the Con out of Econometrics', *American Economic Review*, 73:1 (1983), pp.31-43. For a summary of discrepancies in econometric studies on the causes and duration of civil war, see Buhaug & Lujala (2005), pp.401-403.

The process of checking and disproving results could lead in time to certain findings becoming more robust. Yet the prospect of substantial progress and diminished arbitrariness is dimmed by the difficulties posed by missing, unreliable and inappropriate data. Four difficulties in particular stand out. First, it is improbable that gaps and inaccuracies in the historical data will ever be overcome adequately. Second, despite improvements in international data gathering in many areas, information will remain least available and least reliable for the countries that are the focus of inquiry, namely those engulfed by war. Third, it is impossible to determine the magnitude of the bias or inconsistency introduced by measurement error because there is no way to measure accurately the measurement error.⁸⁶ Fourth, political variables like repression and discrimination are not easily quantified; the indices for these variables obscure important information; and other factors relevant to the causes of civil war, such as history, ideology, propaganda, leadership and ethnic politics, cannot be quantified meaningfully.

Why not study civil wars and rebellions? The deep flaws in C&H's model

In addition to the problems raised above, there are deep flaws in C&H's model. In this section I argue that their theoretical assumptions, econometric method, limited analytical focus and narrow empirical scope prevent them from developing an adequate understanding of the causes of civil war. I also demonstrate the considerable gap between their theoretical and empirical conclusions.

Through a glass darkly

Collier maintains that his results seem counter-intuitive because people generally view rebellion as a protest motivated by genuine and extreme grievance. He argues that this view derives from the discourse of rebels, which is completely untrustworthy. Rebel organisations cannot afford to be regarded as criminal because they need a positive image internationally and need to motivate their recruits to kill. They therefore have to develop a discourse of grievance in order to function. Those of us who care about oppression, inequality and injustice are susceptible to believing this discourse but we may simply have been duped.⁸⁷ Economists, on the other hand, tend to be sceptical of the explanations that people give for their behaviour, "preferring to work by 'revealed preference': people gradually reveal their true motivation by the pattern of their behaviour".⁸⁸ Elsewhere Collier puts this argument as follows:

...since both greed-motivated and grievance-motivated rebel organisations will embed their behaviour in the narrative of grievance, the observation of that narrative provides no informational content to the researcher as to the true motivation for rebellion. To discover the truth we need a different approach. The approach I take, which is the conventional one in social science, is to infer motivation from patterns of observed behaviour.⁸⁹

Collier and C&H do not in fact work in this fashion. The most striking problem with their efforts to understand the motives of rebels is precisely that they do not study 'patterns of

⁸⁶ Dawson *et al.* (2001), p.989.

⁸⁷ Collier (2000a), pp.1-5.

⁸⁸ Collier (2000a), pp.4-5.

⁸⁹ Collier (1999), pp.1-2.

observed behaviour'. For example, instead of considering empirical evidence on the sources and cost of rebel weaponry, C&H use the proxy of time elapsed since the previous war; instead of considering the evidence on support to rebels from foreign governments, C&H use the proxy of the Cold War; instead of examining the actual recruitment and financing of rebel soldiers, C&H use proxies like income per capita and economic growth; and instead of examining well-documented cases of rebel extortion, C&H look at the ratio of primary commodity exports to GDP. Not one of C&H's variables entails an observation of rebel behaviour. The analysis is so oblique that the object of study is never in focus.

The main reason for the oblique approach is that C&H's quantitative method does not easily enable them to observe rebel conduct directly. They need numerical data and they find the data at the structural level. On the basis of assumptions about rebel behaviour and motive, they identify structural indicators and measurable proxies; and on the basis of a statistical analysis of these variables and the outbreak of civil war, they draw inferences about rebel behaviour and motive. As a means of testing the rival greed and grievance theories, this is not merely a circuitous and haphazard route; it is a cul-de-sac. Unsurprisingly, C&H's study does not yield an insightful account of rebel motivation. Their results can be summarised as follows: grievance factors are insignificant, with the exception of 'ethnic domination', which is a demographic index that does not capture grievance; a range of opportunity variables are significant but they could indicate greed or grievance; and just one correlation, between civil war and natural resource dependence, is tentatively judged to be indicative of greed.⁹⁰ At the end of the study, the motivation of rebels is a mystery.

Just as C&H attempt to discern rebel motives without studying rebel behaviour, so they seek to ascertain the causes of civil war without studying civil wars. Information about the wars in C&H's sample is limited to their starting date, duration, conformity to the definition of civil war, the name of the country in which they occurred, and whether they were preceded by a previous war. There is no examination of the intensity and scope of the war; the manner in which it was fought; the events that led up to it; the way in which it ended; the rebels' demands; the extent of popular support for the rebels and for government; the belligerents' capabilities, ideology, allies, constituencies and social composition; and the regional context and role of neighbouring states. C&H do have a perspective on civil war, which informs their choice of variables and their conclusions, but it stems from a theory of rebellion rather than from a detailed knowledge of civil wars. As discussed below, the theory rests on assumptions that are not credible and that are not validated by C&H's findings.

The econometric method employed by C&H can accommodate additional information on civil wars but it is not able to identify the causes of these wars. At best, it can determine the presence or absence of statistical correlations between aspects of civil war and the independent variables selected by the researcher. An explanation of the results and a proper exploration of causal relationships require observation and the gathering of evidence by other methods.

A poverty of theory

Aside from the limitations of their method, C&H's attempts to identify the causes of civil war are sidetracked by the category error they make in juxtaposing grievance and opportunity as competing explanations for rebellion. Grievance can logically be contrasted with greed since both fall into the category of motivation and are indicative of cause. Opportunity, on the other

⁹⁰ C&H (2004).

hand, falls into a different category and does not indicate motive or cause; it can be created, seized, spurned or ignored depending on motives and other causal factors. After testing grievance and opportunity variables as if they were rival explanations for the onset of civil war, C&H end up concluding correctly that opportunity as an explanation of conflict risk is consistent with both greed and grievance motivations.⁹¹

Why then do C&H put so much emphasis on opportunity as an overarching explanatory factor? The answer lies in two explicit assumptions. First, people are greedy. C&H cite Hirschleifer's 'Machiavelli Theorem' whereby "no one will pass up a profitable opportunity to exploit someone else", and extend this notion to rebellions: "rebellions are motivated by greed, which is presumably sufficiently common that profitable opportunities for rebellion will not be passed up".⁹² Second, irrespective of objective conditions, perceived grievances and the lust for power are found more or less equally in all societies.⁹³ Given these assumptions, the key to explaining the incidence of civil war lies in identifying the opportunities that make rebellion feasible and profitable. Regardless of why a rebel organisation is fighting, it can only fight if it is financially viable and predatory behaviour is its means of financing the war. The conclusion is that "rebellion is unrelated to objective circumstances of grievance while being caused by the feasibility of predation".⁹⁴ In economic theory rebellion is thus conceived as a form of organised crime.⁹⁵ However, rebel groups need a good image internationally and need to motivate their recruits, so they manufacture a false sense of grievance.⁹⁶

There are two problems with the logic of this position. First, it is illogical to argue that rebellion is *caused* by the *feasibility* of predation. If predation provides the financial means for rebellion, then the feasibility of predation establishes the opportunity. The cause is an entirely separate matter: a set of rebellions could have varying feasibility and a similar cause (e.g. colonialism or minority rule), or they could have different causes and similar feasibility (e.g. because of access to weapons and funds). By way of analogy, if two states go to war it would not make sense to say that the hostilities were caused by the feasibility of taxation and other means by which the belligerents raised revenue for their armies.

Second, it is illogical to insist both that rebellion is unrelated to objective grievance and that rebel leaders have to manufacture a false sense of grievance for the purpose of recruitment, mobilisation and cohesion. If people can be mobilised for war on the basis of false grievances, why can they not be mobilised around objective grievances? Why is it necessary to manufacture grievances in situations where there are objective and heartfelt grievances? And why is it necessary to manufacture grievances in order to motivate rebel soldiers if rebellions are motivated by greed?

Collier illustrates his argument with reference to the Eritrean People's Liberation Front (EPLF). He attributes the EPLF's defeat of the much larger Ethiopian army of President Mengistu in 1991 to the cohesion it achieved through indoctrination courses that inculcated a sense of injustice among its members. He adds that rebel organisations in ethnically diverse societies tend to be ethnically homogenous and actively manufacture ethnic grievances as a

⁹¹ C&H (2004), p.589.

⁹² C&H (2004), p.564.

⁹³ Collier (2000a), p.4; C&H (2004), pp.564-565.

⁹⁴ Collier (2000a), p.4.

⁹⁵ C&H (2004), p.564; Collier (2000a), p.2.

⁹⁶ Collier (2000a), pp.4, 5 & 12.

necessary way of motivating their forces.⁹⁷ This is a grossly inaccurate account of the EPLF. Collier ignores the marginalisation and deprivation that fuelled the Eritrean struggle for independence; the EPLF's preoccupation with uniting nine ethno-linguistic groups and two religions around an Eritrean *national* identity; the Front's programmatic emphasis on facilitating land reform and providing social services to peasants and village people rather than engaging in predation; and the harsh repression of the Ethiopian regime, which included mass killings, forced removals and other extreme abuses.⁹⁸ The Eritrean case invoked by Collier to illustrate his theory highlights instead the inadequacy of that theory.

The core assumptions of the theory are too reductionist, crude and far-fetched to provide any purchase on reality. It is not plausible to suggest that 'perceived grievances' are the same in, say, Finland and Sudan or Australia and Congo, or that the low risk of rebellion in Finland and Australia is due to the infeasibility of rebel predation. Nor it plausible to claim that human nature, in all its manifest complexity, is reducible to or dominated by a single motivation or trait, and even less that people in general or at least in sufficient numbers are so driven by greed that they will embrace the horrors of war and the risk of exile, imprisonment, injury, torture and death for uncertain financial gain. A portrait of mercenaries as a general proposition about human nature is not credible. It is equally unrealistic to imagine that the diverse rebel movements of the past six decades can be captured by a simple characterisation, whether as criminals, bandits or freedom fighters.

Christopher Cramer presents a compelling broader critique of rational choice theories of conflict based on neoclassical economics, of which C&H's studies are an example. He argues that:

rational choice theories of conflict typically lay waste to specificity and contingency, that they sack the social and that even in their individualism they violate the complexity of individual motivation, razing the individual (and key groups) down to monolithic maximizing agents.⁹⁹

Cramer insists that the theoretical assumption of rational choice individualism is entirely unjustified given the complexity of conflict, the range of structural constraints on individualism, and the compulsions other than utility maximisation that restrict choice and create a diversity of war rather than a single type. He proposes instead a political economy approach that analyses social relations and the powerful influence of material conditions on those relations, and that focuses not just on choices of violence but also on relations of force and their institutionalisation historically.¹⁰⁰

Most importantly, C&H fail to prove the validity of their core assumptions. The strength of their theoretical convictions is inversely proportionate to the weakness of their corroborating evidence. They do not attempt to substantiate their claim that perceived grievances are found more or less equally in all societies; they do not demonstrate that predation is a primary or

⁹⁷ Collier (2000a), p.12.

⁹⁸ See Alex de Waal, *Evil Days: Thirty Years of War and Famine in Ethiopia*, New York: Human Rights Watch, 1991; Ruth Iyob, *The Eritrean Struggle for Independence: Domination, Resistance, Nationalism, 1941-1993*, African Studies Series 82, Cambridge: Cambridge University Press, 1995; Pool (1998); Peggy A. Hoyle, 'The Eritrean National Identity: A Case Study', *North Carolina Journal of International Law and Commercial Regulation*, 24:2 (1999), pp.381-416.

⁹⁹ Cramer (2002), p.1846.

¹⁰⁰ For a theoretical and empirical critique of Collier's notion of rebels as criminals, see Francisco Gutiérrez Sanín, 'Criminal Rebels? A Discussion of War and Criminality from the Colombian Experience', *Crisis States Working Papers*, 27, London: Crisis States Research Centre, London School of Economics, 2003.

common cause of rebellion; they offer no evidence of rebel extortion other than a reference to Klare, who emphasises grievance and structural problems in his account of resource wars;¹⁰¹ they concede that opportunity can account for both greed- and grievance-led rebellions; and they conclude that “our evidence does not therefore imply that rebels are necessarily criminals”.¹⁰²

The missing links

No single study or model can be expected to capture all aspects of a complex phenomenon like civil war. Nevertheless, because C&H seek to determine the causes of civil war and consider a large number of social, political and economic factors, it is worth highlighting how narrow their analytical and empirical focus is. Whereas Collier asserts that civil wars are “caused by the feasibility of predation”,¹⁰³ in reality these wars have both a range of causes and a range of different *types of cause*. The different types of cause, which are often conflated in research on civil wars, can be summarised as follows:

- Structural conditions. Certain structural conditions might put a country at risk of civil war and, from a comparative perspective, make some countries more likely than others to experience civil war. The relevant structural issues include political, social and economic factors and often have regional and international dimensions.
- Dynamic causes. Civil wars do not arise suddenly out of thin air. They are preceded by a set of significant events that constitute a causal chain or constellation and culminate in large-scale violence between government and opponents.
- Catalytic events. In the causal chain or constellation of events leading to civil war, there is sometimes a dramatic event that sparks rebellion and is thus an important proximate cause of war.
- Actors’ decisions. Civil war entails organised violence on the part of rebels and government. The decision by these actors to engage in or refrain from large-scale violence is therefore a key determinant in the incidence of war. In some cases the decisions of external actors are also among the significant causes of civil war.
- Soldiers’ motives. Government and rebel soldiers have a range of reasons for joining an army. These reasons might be political, ideological, social, financial etc.¹⁰⁴

This framework is intended to indicate that civil wars have different types of cause and that consideration of several causal categories might provide a more comprehensive understanding than any single category on its own. The framework highlights how narrow C&H’s focus is and how much they miss. In summary, their focus lies exclusively at the structural level. They ignore the dynamic and proximate causes of civil war, which is to say that they ignore history and politics. At the levels of actors’ decisions and soldiers’ motives, they have little interest in the state and the government. They are very interested in rebels although they do not analyse

¹⁰¹ Klare (2001).

¹⁰² C&H (2004), p.588.

¹⁰³ Collier (2000a), p.4.

¹⁰⁴ For fascinating studies on rebel armies, see David Keen, “‘Since I Am a Dog, Beware My Fangs’: Beyond a ‘Rational Violence’ Framework in the Sierra Leonean War”, *Crisis States Working Papers*, 14, London: Crisis States Research Centre, London School of Economics, 2002; and Gutierrez (2003) on Colombia.

rebel behaviour. Their geographic focus is almost entirely domestic, the only exceptions being a country's diaspora living in the US and foreign government support for rebels. Beyond this, they do not consider the regional and international factors that might be part of the structural context or influential in terms of actors' decisions. Some of these gaps are discussed below.

At the structural level, C&H do not conduct an open-minded inquiry into the causes of civil war and the relationship between the relevant political, economic and social factors. Instead, their analysis revolves around the artificial dichotomies of opportunity versus grievance and greed versus grievance. This inhibits consideration of varied and mixed motives on the part of rebels.¹⁰⁵ It also stifles observation of the interaction between motive and opportunity, both of which are germane to the initiation of rebellion. As discussed above, it leads to the selection of independent variables to represent a single phenomenon in the category of either grievance or opportunity when many of the variables could simultaneously reflect dynamics in both categories. Finally in this regard, the independent variables are not independent in reality and their relevance to civil war onset may stem from the way in which some of them facilitate, reinforce or exacerbate others of them.

For reasons that are not explicit, C&H ignore the government as a decision-making actor. They are preoccupied instead with the decisions, actions and motives of rebels. They cover the political system and the degree of freedom and repression in a country, which reflect the government's character, but they do not consider the kinds of governmental decision, action and motive that are among the causes of civil war. By way of illustration, the following decisions and actions by governments and security forces were instrumental in provoking armed rebellion in Africa: the unilateral declaration of independence by the white minority regime in Rhodesia in 1965; the massacre by South African police of non-violent demonstrators at Sharpeville in 1960; and the decision by a provincial governor in Zaire in 1996 to expel the Banyamulenge people from the country in which they had lived for over two hundred years.

Because their analysis is confined to numerical data at the structural level, C&H's study is rendered apolitical and ahistorical. They disregard the actions and interactions of government and opposition groups, the divisions and struggles within the state, political parties and rebel organisations, the influence of political leadership, and the power of ideology as a means of cohesion and mobilisation by government and rebels. They observe ethnic demographics but not the politics of ethnicity; religious diversity but not religious ideology; economic inequality but not class politics; and social categories but not social relationships. In short, in their study of the intensely political and historical phenomenon of civil war, C&H ignore the stuff of politics and history.

Conclusion

C&H's findings are unreliable and their conclusions are unjustified. Many of their proxies are arbitrary and spurious, the meaning they assign to the proxies is too restrictive, and it is not clear what the proxies are actually capturing. This lack of certainty renders the results of the regression analysis ambiguous and capable of different interpretations. C&H's interpretations and their conclusions about rebel behaviour are speculative, based on untested assumptions

¹⁰⁵ See Cramer (2002), pp.1853-1854 for a discussion on the coexistence of, and relationship between, greed and grievance in civil wars.

and inferences rather than on evidence of rebel conduct. As a result of measurement problems associated with geographical scale, endogeneity and inaccurate and missing data, their study is also vulnerable to measurement errors, biased samples and artificial findings. Limited to numerical data at the structural level, their analysis ignores politics, history, ideology, government decisions, the regional context and the constraining effect of repression, all of which are critical to the causes and incidence of civil war. C&H are unable to develop an adequate understanding of the causes of civil war and the motives of rebels because they do not analyse civil wars and rebels.

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The aim of the Crisis States Programme (CSP) at DESTIN's Development Research Centre is to provide new understanding of the causes of crisis and breakdown in the developing world and the processes of avoiding or overcoming them. We want to know why some political systems and communities, in what can be called the "fragile states" found in many of the poor and middle income countries, have broken down even to the point of violent conflict while others have not. Our work asks whether processes of globalisation have precipitated or helped to avoid crisis and social breakdown.

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Research Objectives

- ❶ We will assess how constellations of power at local, national and global levels drive processes of institutional change, collapse and reconstruction and in doing so will challenge simplistic paradigms about the beneficial effects of economic and political liberalisation.
- ❷ We will examine the effects of international interventions promoting democratic reform, human rights and market competition on the 'conflict management capacity' and production and distributional systems of existing polities.
- ❸ We will analyse how communities have responded to crisis, and the incentives and moral frameworks that have led either toward violent or non-violent outcomes.
- ❹ We will examine what kinds of formal and informal institutional arrangements poor communities have constructed to deal with economic survival and local order.



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