

Food Aid and War:
The Role of Humanitarian Aid in the Duration of Civil Conflict in Sub-Saharan Africa

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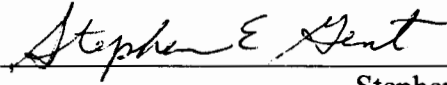
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I. Introduction

On March 5, 2012, the not-for-profit organization Invisible Children launched its *Kony 2012* campaign in the form of a YouTube video, directed by Jason Russell, which received nearly 100 million views in its first six months. *Kony 2012* was essentially a call to arms, to both citizens and governments alike, to track down and capture Joseph Kony, leader of the Lord's Resistance Army (LRA) in Uganda, who had been indicted by the International Criminal Court, by the end of the year. Although Kony and the LRA have not been particularly active in recent years, the video created a lively discussion throughout the United States, in particular, concerning the role of the US in the affairs of Africa. It raised further questions in society about the uses of not only military aid as a means of stopping the LRA, but also humanitarian aid as a means of aiding the Ugandans affected and displaced by Kony.

Although Sub-Saharan Africa may not have been a topic of discussion among the general populace until the release of *Kony 2012*, the region has long garnered the attention of humanitarian and developmental organizations as a result of its low levels of economic development, unstable, corrupt governments, and seemingly unending conflict. International nongovernmental organizations (NGOs) and government organizations alike have funneled billions of dollars into the region with high hopes of encouraging development and democratization, looking for inspiration to the actions of international financial institutions such as the World Bank and the International Monetary Fund in Latin America during the latter decades of the 20th century.

After the increasing levels of foreign aid and intervention that has been directed at Sub-Saharan Africa, the country has seen improvements across the board in terms of economic and social development and political democratization. That said, the majority of the continent is still

impoverished and controlled by authoritarian leaders (though many operate under the guise of democratic elections). For example, in 2011, the majority of countries in Africa received a Polity IV ranking of 5 or fewer. Of these, about half received rankings below 1. The scale indexes countries based on the competitiveness and openness of their elections, ranging from -10 (highly autocratic) to 10 (highly democratic). The continent of Africa, therefore, is composed primarily of anocracies (both closed and open). Further, the continent is characterized by a number of ongoing conflicts, including those with the Boko Haram in Nigeria and the Tuaregs in Niger and Mali. This raises the question of why foreign aid has not resulted in a more socially, politically, and economically developed, peaceful Africa.

Previous research has dealt primarily with development and military aid and their effects on economic development and democratization in the region. While theoretical evidence suggests that humanitarian aid, unlike democracy aid, has overwhelmingly negative consequences in terms of the duration of conflict (LeRiche 2004, Lischer 2003), there has been little scholarship on the subject. In a world in which new NGOs emerge every day with the goal of providing food and clean water to those in impoverished countries and regions of conflict, it is imperative that we understand fully both the intended and the unintended consequences of this humanitarian aid. In this respect, my research represents a departure from existing literature.

In the following essay, I attempt to discern why it is that humanitarian aid results in an increase in the length of conflict. First, I will survey the existing literature on the subject, drawing on the work of notable political scientists who have conducted research in fields of conflict and foreign aid, and determine where, precisely, my research fits into the gaps in the current pool of scholarship. Then, I will describe the theoretical causal mechanism used to explain why humanitarian aid increases conflict duration. Next, I will outline my research design

and assess the empirical results. Finally, I consider two case studies as a means of qualitatively demonstrating the ways in which my findings can be applied.

II. Literature Review

Conflict Theory

The literature is rich with discussion of what causes intrastate conflict everywhere, including within Africa. Collier and Hoeffler (2000) compare the two main models of rebellion: greed and grievance. The latter they compare to a protest and describe as being motivated by ethnic or religious differences or economic inequality, with the goal of appeasing their grievance; the former, they compare to organized crime and describe as being motivated by rent-seeking behavior (4). Rent-seeking behavior can be defined as “the socially costly pursuit of winning a contestable prize” (Economides, et al 2008, 464). In other words, insurgencies arise, according to the greed model, because governments and insurgents seek monetary acquisition for themselves and for their followers; their goal is economic profit, not policy change. Collier and Hoeffler tested both models statistically, and found that most of the proxies for the grievance model were insignificant, whereas the greed model “performs well” (26). This means that more conflicts begin as a result of rent-seeking behavior, rather than as a direct effect of inequality.

Collier and Hoeffler’s greed-based account can be used to explain another phenomenon of human behavior that appears a little more frequently in the literature: moral hazard. Moral hazard is, in a general sense, the tendency to engage in risky behavior because the costs incurred will not be borne by the risk-taker. In the context of conflict, moral hazard begins when a government or an insurgent receives a large amount of aid. The knowledge that this aid flow will continue creates perverse incentives within the government or the leadership of the insurgency to spend these funds irresponsibly (Bräutigam 2000, 3). Moral hazard, in this case, is supported by the

rent-seeking incentives described in Collier and Hoeffler's greed theory: rent-seeking leads rulers to engage in risky behavior because they know that, if they do so, they will still continue to receive aid. In many African countries, where government institutions are weak and transparency is all but inexistent, moral hazard serves as a particularly strong problem, due to the culture of rent seeking. Bräutigam notes that rentier states have "little incentive to improve state capacity" (25) because the flow of revenue depends not on taxes raised from citizens and domestic businesses, but on foreign aid, which flows almost continuously in some states. This creates a moral hazard problem in which governments inefficiently allocate their revenues, fail to find alternative sources of revenue, and remain dependent on foreign aid sources to fund government activities.

Moral hazard plays a major role in both the initiation and the duration of conflict. For example, Kuperman (2008) explains that rebel leaders, in many cases, are more likely to arm their followers and secede from the state because they expect that, should the state attempt to violently suppress them, the international community will intervene on their behalf (51). Further, he explains, insurgents have even been known to attack the state, deliberately provoking retaliation, so that they are able to achieve their political goals (which correspond with Collier and Hoeffler's greed theory) when the international community intervenes.

Effects of Foreign Aid

There exists a great deal of scholarship surrounding the effects of democracy aid. Aid seems to have a positive impact on democratization. Knack (2004) used both the Freedom House combined political freedoms and civil liberties index, which ranks countries from 2 to 14 on aspects such as freedom of speech and free and fair elections that "represent informed citizen preferences" (254), and the Polity IV data set, which provides a 10-point index based on factors

such as institutional checks on executive power and competitiveness of elections. He found that foreign aid resulted in an increase in democratization, in terms of the Freedom House and Polity IV indices, in recipient countries due to the technical assistance used to strengthen electoral processes and judicial and legislative checks on executive power, and through improving education systems and increasing incomes. Goldsmith (2001) similarly concluded that high quantities of democracy aid resulted in statistically significant increases in levels of democracy, which she too defines on the basis of the Freedom House political freedoms index.

By contrast, however, foreign aid has a negative impact on governance and economic development. Bräutigam and Knack (2004) describe the moral hazard problem that exists in many African states such that the receipt of foreign aid incentivizes governments to build up systems of patronage and to spend money inefficiently (263), all while reducing incentives for democratic accountability (265). Bräutigam and Knack conclude that large amounts of aid have a “robust statistical relationship” with deteriorations in governance. Economides et al (2008) concluded that high levels of aid actually do not result in economic growth. This is due to the incentives created by foreign aid that encourage rent seeking behavior, rather than productive economic activities. It is necessary to note that these studies tend to be inconclusive as a whole: some find positive relationships between democracy, governance, and growth and foreign aid, while others find negative relationships.

These studies shine light on several fundamental characteristics of foreign aid and its distribution. Knack’s and Goldsmith’s findings, in contrast with Bräutigam and Knack’s and Economides’ seem to suggest that foreign aid can have positive effects if it is utilized efficiently in that it is channeled into institutions that strengthen the transparency and the accountability of the government in a given aid recipient country. However, if, instead, the primary use of foreign

aid is to appease the patronage systems of national and local leaders, the results in terms of economic development and democratization will be negative.

Aid and Conflict

The literature is a little more decisive in regards to the effects of foreign aid on the duration of conflict in recipient states. There seems to be a consensus that democracy aid results in a decrease in violence. De Ree and Nilleson (2009) show that increasing democracy aid decreases the duration of a conflict that has already begun (they do not find a relationship between high levels of aid and the start of new conflicts). This is a highly significant relationship; a 10% increase in foreign aid results in an 8% decrease in continuation of conflict (312). They attribute this to the ability of governments to strengthen their armies by channeling funds received through foreign aid flows into military expenditures. Savun and Tirone (2011) echo this finding, concluding that the negative relationship between democracy aid and the probability of conflict during democratization is both statistically and substantively significant (242).

Nielson et al (2011) takes these findings one step further, claiming that democracy aid shocks—“severe decreases in aid revenues” (220)—result in a surge of violence. Aid shocks cause a sudden shift in the balance of power between governments and insurgents, creating a commitment problem in which governments can no longer credibly commit to provide resources to appease rebel groups. So, according to Neilson et al, foreign aid prevents conflict by promoting a balanced status quo that supports peace.

On the other hand, other scholars argue that humanitarian aid results in an increase in violence. Matthew LeRiche (2004) gives a theoretical account, supported by historical case studies, of rebels taking advantage of the humanitarian aid provided for victims of the

insurgency. Insurgents frequently, he writes, are treated at international aid clinics and gain access to food and supplies supplied for the wounded (106). There is a strategic aspect to these actions. Indeed, insurgents use scorched earth techniques in order to induce drought and famine, thus producing a need for aid provided by NGOs (108). Further, refugee camps allow governments to direct their funds to military expenditures, rather than humanitarian aid. With both militant groups and governments adequately supplied, conflicts can continue. Blouin and Pallage (2008) develop a model based on this idea that famine relief efforts, also known as food aid, inadvertently supply armies, and thus increase conflict.

Lischer (2003) echoes these findings, and suggests other causal mechanisms as well, using the case of the Rwandan genocide and the 1992-1995 war in Bosnia as examples. She considers four means by which humanitarian aid can exacerbate conflict. The first is that refugee relief can feed militants. The second is that it feeds and protects civilian supporters of militants. Third, it can contribute to the war economy. This consists of raiding warehouses and, if insurgency leaders or supporters control the distribution process, inflating population numbers and diverting the surplus resources toward military preparations (84). Finally, humanitarian aid can provide legitimacy to combatants in that aid organizations are often able to shape international opinion by simplifying the insurgencies into black and white conflicts (85).

It is important to note that, although LeRich, Blouin and Pallage, and Lischer all provide reasonable theoretical models to explain how humanitarian aid results in an increase in conflict, none of them tested their theories and hypotheses quantitatively, as I do in my research.

The previous literature surrounding the effects of foreign and humanitarian aid on the duration of conflict is highly troubling. Indeed, while it appears that democracy aid has a

statistically significant relationship with a decrease in conflict, humanitarian aid has the opposite effect, and actually results in an increase in violence. The literature also highlights a key idea: that a great deal of the problems associated with foreign aid result from the misuse and the misadministration of that aid (Lischer 2003; de Waal 1997). It becomes important, then, to pinpoint what implementation policies are effective at decreasing the duration of conflict and at efficiently and effectively distributing resources, and which are not. By doing so, we may develop a more efficient mechanism to administer humanitarian aid such that it minimizes the moral hazard problems that lead to further conflict.

III. Theory

In reviewing the relevant literature, an important question arises: why is it that democracy aid, while it does not conclusively result in increased democracy or development, results in a shorter duration of conflict, whereas humanitarian aid results in increased length of insurgencies and civil wars? Further, are the causal mechanisms linking military and humanitarian aid to an increased conflict duration the same? These are obviously questions that must be answered definitively, so that international NGOs, private volunteer organizations, and governments do not continue wasting their resources by funneling money, food, and medical care into developing countries with the hopes of nourishing citizens, while actually fueling conflict.

Before the answer to this question can be explored, humanitarian aid must be defined. According to the United States Agency for International Development (USAID), humanitarian aid is foreign aid that is a direct response to “both natural and man-made disasters as well as problems resulting from conflict” (Tarnoff and Lawson 2012, 6). It consists of food and medical aid, and is provided to victims and refugees of these disasters and conflicts. It is frequently

administered by nongovernmental and private volunteer organizations. Sometimes, these NGOs and PVOs just supply the resources, and leave the responsibility of their distribution to local leaders; in other cases, they are responsible for both raising funds and distributing resources to victims and refugees.

With this key term defined conceptually, the theoretical causal mechanisms driving the relationships between foreign aid and conflict duration may be explained. We must consider first why it is that humanitarian aid increases the duration of conflict, and second why it is that other types of aid, namely democracy aid, as explored by researchers such as de Ree and Nilleson, Savun and Tiron, and Nielson et al, described previously, have the opposite effect. Consistent with the literature, I will first attempt to justify this difference on the basis of moral hazards.

The knowledge of the vast quantity of resources available to be exploited for military purposes creates perverse incentives for rebelling militant groups. Knowing that humanitarian aid will be administered under certain conditions, insurgents will be faced with a moral hazard problem, in which they will seek to generate conditions that will entice international NGOs into distributing humanitarian aid in the area. For example, militants will engage in scorched earth techniques in order to destroy all of the crops in a region, thus inducing famine (LeRiche 2004, 108). Once a system of humanitarian aid is securely in place, they will utilize the available resources in order to continue the conflict.

Military aid, similarly, creates a moral hazard problem. Military aid to governments tends to increase in response to conflicts as a means of increasing the strength of a regime's armed forces, empowering it to put down the insurgency without international support. This aid is invaluable to developing countries, as it frequently involves high-tech weapons and advanced

military training. Therefore, government leaders have an incentive to continue the conflict, so that the flow of international military aid continues (Bapat 2011, 303).

Why does democracy aid, in contrast, not result in a lengthening of conflict? Democracy aid, as explained previously, can result in a shortened duration of conflict because it strengthens government institutions. Indeed, democracy aid is channeled into strengthening education and electoral processes. Education leads to an increased demand for transparency in government, while improved electoral processes provide the means for increased transparency and accountability. Citizens will then gain confidence in the government, which will be strengthened and better able to put down rebellions. It is also important to consider the nature by which democracy aid is administered. Indeed, in most cases, a country must request democracy aid before it is delivered (Burnell 2013, 83). This implies that a country receiving democracy aid is already committed to democratization and, therefore, has the preconditions for shorter duration of conflict.

The presence of democracy aid does not have a particularly extreme impact on moral hazard in the government in regards to the continuation of conflict. Intuitively, this makes sense. Because democracy aid is not applied as a means of combating insurgencies, but rather, is applied independently of conflict, increasing the duration of a conflict will not increase the amount of aid received. The government, therefore, has little incentive to continue an ongoing insurgency.

Therefore, it can be concluded that the differences between the emergence of a moral hazard problem as a result of the receipt of humanitarian, military, and democracy aid can be attributed to the conditionality of the aid. In other words, because humanitarian and military aid are conditional on (in that they increase as a result of) the persistence of a conflict, and

democracy aid is not, the former two types of aid create moral hazard problems in which the principle actors are incentivized to continue the conflict, whereas the latter type does not create these perverse incentives.

The next question that emerges is whether or not the existence of moral hazard alone is sufficient to justify an increase in the length of conflict. Operationally, this means analyzing other mechanisms present in humanitarian or military aid that could explain the resulting increase in conflict duration. The primary institutional difference here lies in the access and availability of aid resources, and the presence or absence of intermediaries in the government to distribute aid resources. Indeed, because of the tangibility of humanitarian aid in comparison to other forms of foreign aid, resources tend to be easily accessible to insurgents. In theory, the resources provided by military aid are not easily accessible to insurgent or civil society groups. Further, whereas humanitarian aid tends to be administered through NGOs or, occasionally, local leaders or groups in civil society, military aid is generally directly administered on a government-to-government basis.

I therefore hypothesize that, in a comparison of different types of foreign aid administered during times of civil war and other conflicts, humanitarian aid will result in an increased duration of conflict, whereas other types of aid will have the opposite effect. This is a result of both the initial conditionality of the granting of aid, which can result in the emergence of moral hazard problems within the government and insurgent groups, creating a resolve to continue conflict, and the later accessibility of this aid, which empowers rebel groups, creating the means to do so.

IV. Research Design

I performed my research in a two step process: the first, a quantitative analysis to confirm empirically that humanitarian aid does, in fact, result in longer duration of conflicts in Africa; the second, a qualitative case study analysis in order to determine why this relationship exists.

My data is taken primarily from the Uppsala Conflict Data Program/Peace Research Institute, Oslo (UCDP/PRIO) Armed Conflict Dataset and Global Humanitarian Assistance's International Humanitarian Response Dataset. The former dataset includes detailed information on the actors involved in and the duration of civil conflicts since 1945. The latter provides the annual amounts of international humanitarian aid received by countries between 1995 and 2011, expressed in millions of 2011 US dollars. In addition to this merged dataset, I included a variety of developmental variables from the United Nations Development Program's Human Development Indicators, as well as geographical indicators from Nathan Nunn's and Diego Puga's "Ruggedness" dataset.

As an operational definition of conflict, I turn to the definition used in the Code Book of the UCDP/PRIO Armed Conflict Dataset. An armed conflict is:

a contested incompatibility that concerns government and/or territory
where the use of armed force between two parties, of which at least one is
the government of a state, results in at least 25 battle-related deaths. (1)

It is important to differentiate between this definition of conflict and the definition utilized in other similar data sets, such as the Correlates of War project. Correlates of War provides information only for those conflicts that have resulted in 1,000 battle-related deaths. I plan to use the 25 deaths definition of conflict because, in Africa especially, many "contested incompatibilities" that meet every other requirement of the definition have fewer than the 1,000 deaths required by the Correlates of War project. By requiring 1,000 deaths, many important

conflicts would be left out of consideration. Furthermore, it is important to note that, although the UCDP/PRIO definition specifies that “at least” one warring party is a government, I will only be considering those that involve exactly one government. In other words, I plan to study the effect of humanitarian aid only on the duration of civil wars.

According to UCDP, a conflict begins on “the date... of the first battle-related death in the conflict,” and ends on the date in which the last battle-related death occurs. UCDP notes that, for many conflicts, there is no clear-cut start or end event; the data, in some cases, therefore, represents the best available estimation. It is crucial to note that the UCDP/PRIO dataset includes dates for both conflicts and conflict episodes. Whereas conflicts involve an overarching goal between two (or more) sides, episodes are merely instances of violence, baked within conflicts. One conflict can have multiple episodes that occur over different periods of time. This distinction has important theoretical implications for my findings. I do not hypothesize that an increase in humanitarian aid will result in a longer period of time before an insurgent group achieves its political ends; rather, I instead hypothesize that increased aid causes longer spells of violence.

Because of the relatively small number of observations in the dataset ($N=219$ in the full model), the list of independent variables employed is far from exhaustive, in order to maintain a high enough number of degrees of freedom to perform a statistical analysis. The primary independent variable is a logged function of the total amount of humanitarian aid received in a country in a given year, from any source. This variable is logged for two reasons: the first, statistical; the second, substantive. Statistically, values for levels of humanitarian aid are highly skewed to the right. Logging the aid variable, therefore, reduces a great deal of the skewness in the data, better enabling it to be approximated with a normal distribution. Substantively, to a

country that receives only a small amount of humanitarian aid, for instance, \$500,000, an increase of an additional \$500,000 is a lot. To a country that receives a larger amount, for instance, \$5,000,000, this \$500,000 is next to negligible. Logging the aid variable, therefore, makes interpretation of coefficients more generalizable because they can be interpreted as percent changes.

The first control variable included in the model is per capita GDP. It has been shown that poorer countries are more likely to be engaged in conflict. This relationship occurs for several reasons. First, insurgencies are likely to arise for both greed and grievance reasons. Grievance-motivated rebel groups emerge in response to economic inequality, high unemployment and inflation, and low standard of living. In these cases, the costs of fighting are lower than the cost of maintaining the status quo. Greed-motivated insurgencies occur similarly as leaders seek economic gain for themselves. Once these insurgencies have begun, poor states often lack the capacity and the resources to suppress them.

Per capita GDP values have not been provided for Somalia for the entire duration of this study, generating missing values for those observations. If these missing values were random, across multiple countries, they could be ignored; the regression could be utilized with these observations being dropped. However, there is nothing random about the omission of data for Somalia. The country has undergone constant conflict for more than two decades; it has been considered a failed state by the international community, because of the government's inability to control its citizens. Eliminating Somalia from the survival analysis very well might be equated with systematically eliminating a key set of observations. I was able to obtain a predicted estimate of Somalia per capita GDP by running a simple OLS regression on each of the observations in the dataset. The dependent variable used was per capita GDP; the independent

variables were life expectancy at birth, per capita carbon dioxide emissions, and the rate of cell phone contracts in the population. Each of the independent variables were taken from the United Nations Development Program's HDI website; every variable that reported data for Somalia was included in the regression. The results of this regression are shown in TABLE 1. The R-square value of the regression model is 0.9566, suggesting that the predicted values of Somalia's per capita GDP are accurate estimates; the model describes 95.66% of the variation in the dependent variable.

I next control for the geographical composition of the countries using a variable for the Terrain Ruggedness Index, originally developed by Riley, DeGloria, and Elliot (1999), and utilized in Nunn and Puga's "Ruggedness" dataset. The index is based on changes in elevation across a country, and is intended to serve as a proxy for how easily concealable wildlife habitats are for predators hunting their prey.

The remaining control variables are related to Collier and Hoeffler's greed theory. In Africa, much conflict is driven by desire to control natural resources. Further, Alao (2007) found that an abundance of natural resources in a country contributes to a longer conflict duration. Because of that, I include two dichotomous variables, *oil* and *diamonds*, coded 1 if the country has known reserves and production operations of the respective resource, and coded 0 otherwise. Due to Alao's findings, I would expect these variables to have a significant effect on lengthening civil conflicts within Africa.

I perform a survival analysis on the data, in which a failure is defined as the end of an episode of a conflict (note that it is not, as previously discussed, the end of a conflict entirely). I employ a lognormal distribution in the regression. In a lognormal distribution, the hazard rate of a failure increases initially; after it reaches a certain threshold, however, it decreases. This

suggests that an insurgency is most likely to be stopped at its outset. The longer it survives, however, the more likely it is to endure (the lower the hazard rate). Theoretically, this seems viable. As time goes on, rebel groups are able to acquire more resources and more support; they gain more skills that enable them to survive. This is in contrast to, for instance, a Weibull distribution, in which the hazard rate increases more or less constantly as time goes on, which would suggest that insurgencies are more and more likely to be stopped, the longer they go on. This alternative seems less likely, both empirically, in that many insurgencies are unable to break into fully-fledged civil wars, and theoretically, in that, as described previously, rebel groups are able to learn and adapt as time goes on.

The final regression equation utilized is, therefore:

$$duration = a + b1(\log(aid)) + b2(capitagdp) + b3(rugged) + b4(oil) + b5(diamond)$$

Finally, I divide the data into three separate models: North Africa, Sub-Saharan Africa, and a full model combining the two. I do this as a means of discerning whether or not there is something inherent in Sub-Saharan Africa that makes it more conflict-prone than North Africa; if there is, employing separate models offers a way of determining where these divergences exist and, potentially, a means for attempting to combat them in future application of humanitarian aid in the region.

V. Results and Analysis

The results of the analysis on the full model can be found in TABLE 2. Results from the model that dropped the observations in Somalia are on the left of the table; those from the model employing the estimates for Somalia are on the right. There is little difference between the two, suggesting that the relationship between the variables is strong both with and without the Somalia observations. Each cell lists the coefficient associated with each variable, as well as the

standard error. Variables with a p-value of less than 0.1 are denoted with one asterisk; those with a p-value of less than 0.05, with two asterisks; and those with a p-value of less than 0.001, with three asterisks.

The logged transformation of humanitarian aid is statistically significant in all versions of the model, at a 95% confidence level or higher. Because the model employed is of an accelerated failure-time form, the coefficients can be interpreted as proportional increases or decreases in the time it takes to reach a failure as a result of the presence of a given variable. This means that, in the full model with Somalia estimates, for instance, a one percent increase in humanitarian aid, expressed in 2011 prices, results in a failure 0.039 times longer than would occur without the aid. This supports the hypothesis that humanitarian aid results in an increased duration of conflict.

Results from running the regression on data from North Africa and the full model can be found in TABLE 3. In Sub-Saharan Africa, the effect of humanitarian aid on conflict is much stronger than the average for Africa as a whole. A conflict in a Sub-Saharan African country that receives one percent more of humanitarian aid will endure almost 1.5 times as long as it would if it did not receive this aid. This relationship is also illustrated in FIGURE 1, which shows a plot of the hazard rates of the model at four different levels of humanitarian aid: 0, \$19.600 million (the mean value minus one standard deviation), \$55.231 million (the mean value), and \$116.728 (the mean value plus one standard deviation). As the graph suggests, the acquisition of humanitarian aid decreases the risk of a conflict ending. This graph also illustrates two other interesting points. First, the impact of humanitarian aid in perpetuating conflict is diminishing with each standard deviation increase in aid. Second, with the passing of time, hazard rates all converge to a level very close to zero, regardless of the level of aid received, suggesting that a conflict is more likely to end closer to its initiation.

The North Africa model, interestingly enough, shows an opposite effect: a conflict in North Africa will be more than 3.5 times shorter if it receives humanitarian aid than if it does not. This could result from a number of things, including better-developed state institutions that hold leaders accountable to a more efficient allocation of resources.

Some other variables are worth noting. First, per capita GDP is significant in the full model at more than a 99.9% confidence level. However, it is substantively insignificant; though the coefficient is positive, it is hardly higher than zero, suggesting that changes in per capita GDP have little effect on the duration of a conflict once it begins. It is possible that per capita GDP has the effect of decreasing the likelihood of the beginning of a conflict; however, that is out of the scope of this study. Second, although *rugged* is not significant in the full or Sub-Saharan Africa models, it is negative and significant in the North African model. This means that for every point increase in the ruggedness index, a conflict is 41 times more likely to end. It is worth noting that the ruggedness variable has a distribution that is highly skewed to the right. The median of the data is only 0.858, whereas the maximum value is 6.202. This suggests that very few countries will make that 1 point jump to result in such a severe decrease in the hazard rate. It is still interesting that the North Africa data points to a result contrary to what is in the literature about terrain and conflict. It could be that North Africa is an outlier in this respect, or, more probable, that elevation is not the sole geographical determinant of conflict length. Finally, neither oil nor diamonds are significant variables in any model. This outcome may have occurred because the existence of significant amounts of oil and diamonds may be embedded in other variables, such as per capita GDP, or assumptions inherent in the model (for example, in the North Africa model, both variables were left out of the regression because there was no variation in their values).

VI. Case Study

Now that the relationship between levels of humanitarian aid and the duration of conflict has been established, it is important to consider why, exactly, that relationship exists. This can be done through the use of case studies. Somalia offers a vivid picture of the role of humanitarian aid in fuelling civil conflict, through a comparison of the south-central region, centered around Mogadishu, and the northern regions of Somaliland and Puntland, since the early 1990s.

Although Western critics have been quick to write off the entire country as a basket case, it remains true that northern Somalia, since the mid 1990s, has been relatively peaceful, relative to southern-central Somalia. This difference can be largely accounted for by attention from the international community in the form of humanitarian aid: whereas aid agencies played a vital role in contributing to the war economy in the southern regions in response to refugees and starved Somalis since the start of the conflict, they have been almost absent in the northern regions, until recently, giving Somaliland and Puntland opportunities to solve their own internal conflicts peacefully. Somalia also offers a nice case study because information is missing from almost all datasets used in this research because of this conflict. The missing data, therefore, is not random, but systematic, and studying the country qualitatively provides an opportunity to consider its characteristics that resulted in this missing data.

The Conflict

In early 1991, the long-standing regime of Siyad Barre was toppled by a coalition of militant groups organized along clan lines (Lewis 2010, 215). General Mohamed Farah Hassan “Aideed,” a Habr Gidir, was given permission to establish a military wing of the United Somali Congress (USC) in Ethiopia (Drysdale 1994, 23). However, doing so alienated Ali Mahdi

Muhammad, leader of the USC's Mogadishu faction, who feared that his own clan, the Hawiye, would lose its hold on the Barre opposition movement (24). Nonetheless, the two teamed up with the Somali Patriotic Movement (SPM), the Somali National Movement (SNM), an Isaaq clan-based insurgent group in Somaliland, and the Somali Democratic Movement (SDM) (44). By December 29, 1990, the uprising against Barre had begun, and by April, Barre's forces were driven out of the country.

Mahdi was appointed as the interim president by the chairman of the Mogadishu faction of the USC, without the consultation of Aideed, the SNM, or the SPM (Drysdale 1994, 29). The effect was a complete division of southern Somalia along clan lines, devolution into complete anarchy, and the emergence of guerrilla warfare throughout Mogadishu and surrounding areas. Aideed refused to recognize Mahdi as president, and his forces took up arms against Mahdi's (31). Meanwhile, the northwestern region of Somaliland unilaterally declared independence and entered into its own civil war (Bradbury 2008, 49)

The Somali conflict has seen numerous international interventions and attempts at peace talks, but, even as late as early 2014, Somalia is still declared a failed state by the international community. The southern region has not seen peace since the start of the conflict. Further, despite Somaliland's unilateral declaration of independence in 1991 and its proven commitment to peace and at least some degree of democracy, the international community fails to recognize it as sovereign.

The Role of Humanitarian Aid

While it may be easy to accept the international community's definition of the whole of Somalia as a failed state, to do so would be to overlook extreme internal differences within the

country. Indeed, although Somalia is uniformly poor, in terms of conflict, the autonomous regions of Somaliland, in the northwest, and Puntland, in the northeast, have seen relatively greater peace over the last twenty years than the remainder of the country, centered on Mogadishu, has. This difference can be attributed, in part, to the role that humanitarian aid has played in the country since more than ten years prior to the start of what is now known as the Somali Civil War.

In the late 1970s, the Somali National Army staged a large-scale invasion of Ethiopia's Ogaden region, believing that the region rightfully belonged to them, as it was overwhelmingly populated by ethnic Somalis, and was only given to Ethiopia as the result of a British colonial treaty (Bradbury 2008, 27). The conflict ended when the Somali troops were forced back over the border as a result of sudden support by the Soviet Union for the Marxist regime in Ethiopia (Bradbury 2008, 39). Although the war lasted for less than a year, it created an estimated 1.5 million refugees, approximately 40% of Somalia's population at the time (Bradbury 2008, 39). The international community responded to the refugee situation by beginning humanitarian aid operations in Somalia (Frushone 2001, 13). Throughout the 1980s, Somalia received approximately \$120 million per year in humanitarian assistance; nearly half of the population was able to access food aid (Bradbury 2001, 10-14).

A combination of events resulted in a redistribution of these humanitarian resources within Somalia. First, a famine in the south, in part a result of the combination of a drought and the start of armed conflict around Mogadishu, led to an influx of aid as nearly 1.5 million Somalis were left without access to food (Perlez 1992). Second, the Somali National Movement's armed rebellion in the northwestern region of Somaliland, which began in 1988 and intensified after the fall of the Barre regime, posed a dangerous threat to humanitarian

organizations, and the result was a large-scale evacuation of foreign workers and, with them, the delivery of humanitarian aid (Bradbury 2001, 14). It is interesting to note here that, although it is often the case that humanitarian aid follows conflict (in other words, one would assume that the outbreak of conflict in Somaliland would have resulted in a further influx of aid), in contrast, aid organizations acted completely to the contrary in this case. This dynamic ultimately contributed to the relatively short length of the conflict in the north, particularly in comparison to the conflict in the south, which has been ongoing for more than twenty years.

By the time the coalition led by General Aideed toppled the Barre regime, the southern and central regions surrounding Mogadishu were receiving relatively high levels of humanitarian aid from international NGOs; these levels would only increase as the conflict progressed. By contributing to the war economy, the receipt of this aid played a role in the conflict's long duration of, at the time of writing, more than twenty years, and counting. This occurred through several mechanisms.

First, and perhaps most apparently, rebel groups who were allowed access to aid were able to feed their armies at virtually no cost. Countless periodicals report attacks on aid workers by militias and looting of warehouses. In 1992, the United Nations estimated that only half of the food aid brought to Somalia by international NGOs actually reached the refugees and starved Somalis for whom it was intended (Perlez 1992). In this way, humanitarian aid serves as a direct means of fuelling the conflict, by providing rebel groups with supplies and therefore freeing up a large portion of their budget to spend on weaponry and other expenses instead. Further, in some cases stolen food has been resold in markets at inflated prices (Perez 1992). In many cases, the food is resold by citizens hoping to make a profit for themselves; however, militant groups also profit.

Diversion of aid by insurgents has been ongoing since the start of the conflict, and continues even to this day, though it has evolved in some senses. During the 2011 famine, for instance, this was particularly prevalent. Al Shabaab militants constructed a system requiring payments as high as \$10,000 from international humanitarian aid agencies in order to gain access to certain war-ravaged regions of the country (Tran 2013). While such sophisticated systems of administration and duties, as well as the militant groups involved, are certainly deviations from the traditional methods of stealing from storage buildings by various opposing clan groups, the fact remains that insurgents are still, almost 25 years later, manipulating humanitarian aid and utilizing it to fuel the war economy. Moreover, competition for aid resources among opposing rebel groups also has the effect of further escalated conflict.

Aid diversion is closely tied to the issue of moral hazard. To best understand this in the context of the Somali conflict, it is necessary to consider the clan dynamics, both in the south around Mogadishu, and in the northwest in Somaliland.

Kinship

The Somali people were historically pastoralists, organized along clan lines. Kinship was, for the Somalis, the “principle of social organization and the key to understanding politics” (Bradbury 2008, 13). Although the importance of kinship was altered, first with the emergence of statehood under colonial rule, and later as clan lines were manipulated by the Siyad Barre regime so that it could maintain its grasp on power (14), clans remained an important social tie. When the civil war erupted, there was a resurgence of organization along clan lines, as kinship affiliations filled the vacuum left by the state to serve as social safety nets.

As previously described, Mahdi and the Mogadishu faction of the USC were primarily Hawiyes, whereas Aideed and the Ethiopian faction of the USC were largely Habr Gidir. This distinction was crucial for explaining why the two groups went to war with one another after the defeat of Siyad Barre. Initially, Mahdi was upset when Aideed formed his own military wing of the USC, fearing that the Hawiyes would be alienated and lose their important role in the coup. Then, when Mahdi was appointed interim president without consulting Aideed, the latter refused to acknowledge his position. The result was a division within Mogadishu between pro-Mahdi Hawiye and pro-Aideed Habr Gidir forces (Drysdale 1994, 31).

Somaliland, too, can be characterized by opposing clan groups during this time. The SNM was dominated by the Isaaq clan (Drysdale 1994, 136), and its military wing was originally organized along opposing sub-clan lines (Bradbury 2008, 69), most notably the Habar Yunis and the Ise Muse (Drysdale 1994, 72). Somaliland ultimately declared its independence in large part due to the alienation by the central government of the Isaaq clans. Somaliland was a British protectorate during the age of imperialism, until it was given independence in 1960. It existed as a sovereign state for five days, before joining with the then Italian administered UN Trust Territory of Somalia (Bradbury 2008, 32). Initially, Somaliland was as excited as the central government about the idea of a “Greater Somalia,” uniting all of the Somali people.

However, over the next several decades, a series of events unfolded that caused the northwest region to become uneasy. First, in contrast to the great amount of power held by the Isaaq clan under British colonial rule, after joining Somalia, the Isaacs became a minority (33). Second, the defeat of the Somali National Army to the Ethiopians during the Ogaden War and Djibouti’s declaration of independence, both in 1977, shattered dreams of a Greater Somalia and contributed to a feeling of uneasiness among the Isaacs (41). In 1988, the SNM attacked the

Somali army in Hargeisa. The government responded harshly, with the result of raising morale among the Isaaqs, who were able to rally support from other groups and encourage them to militarily oppose the central government as well (46). This was when the SNM joined the coalition with the USC and SPM to overthrow Siyad Barre. Once this goal was accomplished and Mahdi declared himself interim president without consulting the SNM, Somaliland declared its independence.

Within the first three years of its independence, Somaliland was brought to the cusp of civil war on two occasions. The first conflict, which began almost immediately after its declaration of independence and lasted for ten months (Bradbury 2008, 87), broke out because several sub-clans feared the dominance of the group of sub-clans that composed the government (Lewis 2010, 161). The conflict was reconciled before it became too violent in a peace talk in Djibouti, which formed a representative reconciliation commission (163). The second conflict emerged in late 1994 when the Harti sub-clan in eastern Somaliland was unable to get their candidate elected as Vice President. Their support for Somaliland waned, and they urged their fellow clansmen to seek reinstatement with the rest of Somalia. However, they were unsuccessful in doing so, and this conflict, too, was resolved in a meeting of elders and “a series of intra- and inter-clan peace meetings” (Bradbury 2008, 122). What followed were six years of uninterrupted stability.

Moral Hazard

The conflict that emerged between Mahdi’s USC-Mogadishu and Aideed’s USC-Ethiopia forces unfolded in large part due to fears among members of opposing clans that they would be shut out of decision-making processes. Mahdi felt alienated when Aideed formed the militant

wing of the USC; likewise, Aideed felt alienated when Mahdi was declared interim president without his consent. The two conflicts in Somaliland resulted from similar fears among several different Isaaq sub-clans. Whereas in the southern region, these clan-based conflicts have resulted in 23 years of virtually nonstop civil war, in Somaliland, both conflicts were short-lived and cut short before they were able to escalate into full-scale civil war. This can largely be attributed to the moral hazard problems created in the south by insurgent groups with access to humanitarian aid.

In the south, availability of humanitarian aid resources created an incentive for rebel groups to continue the conflict, if not for any reason but simply that they were able to do so. Despite 15 international attempts at bringing the fighting factions in the south to peace conferences (for instance, Djibouti I and Djibouti II in 1991, the UN Conference on National Reconciliation in Addis Ababa in 1993, and Kenya in 2000) (Bradbury 2008, 2), each believed it more beneficial to continue the conflict, because the spoils of victory associated with beating out an opposing group far outweighed whatever peace deal they could reach. In this way, “social upheaval in the south degenerated into a war of attrition” (Lewis 2010, 146), largely fueled by the vast quantity of and accessibility to foreign-provided humanitarian aid.

In Somaliland, on the other hand, an almost complete absence of aid meant that militias were ill-equipped, and were therefore forced to seek peaceful solutions after relatively very little fighting. It is interesting to note that, in 1992, when some international organizations returned to Somaliland, the humanitarian aid provided served as a spark for the internal conflict in Berbera (Bradbury 2008, 92). This demonstrates just how responsive situations can be to the availability of humanitarian aid because of the moral hazard problems that it creates.

VII. Conclusion

In a world that is becoming increasingly more globalized every day, foreign aid has come to play a major role. However, as more research is conducted, the benefits of various types of foreign aid are beginning to be doubted; aid is no longer viewed universally as a golden elevator, designed to bring impoverished or conflict-prone countries up to par with developed nations. Critics have questioned whether development aid actually generates its intended economic growth, or whether it merely fosters corruption and inefficient resource allocation. They have questioned whether military aid actually enables governments of conflict-afflicted states to put down insurgencies, or whether it has the opposite effect, incentivizing resource-hungry leaders to live in a state of perpetual conflict so that they continue receiving aid. More recently, they have even begun to question the efficacy of humanitarian aid, often seen as the form of foreign aid least likely to do any harm.

The analysis I performed in this paper demonstrates that the effect of humanitarian aid on the duration of civil conflict in Sub-Saharan Africa is both positive and statistically significant at a confidence level of at least 99%. Further, this relationship is substantively significant; on average, a one percent increase in levels of humanitarian aid to a Sub-Saharan African country increases the length of the conflict by almost 1.5 times.

The Somali Civil War and the relative peace in the northwestern region of Somaliland offer a good case study to determine why this relationship exists. Humanitarian aid was largely absent from Somaliland during the 1990s and 2000s, whereas it was abundant in the southern and central regions of Somalia. This abundance of aid was exploited by insurgent groups, who sought food and medical resources for their troops. Further, its availability created a moral hazard problem among competing militias, incentivizing them to continue fighting, rather than

cutting their losses and negotiating a peace deal. The presence of humanitarian aid, therefore, perpetuated conflict in the south, whereas its absence contributed to the relative peace found in Somaliland during the same time.

My findings shed light on several interesting points for both policymaking and future research. First and foremost, they suggest that nations should not be so generously carefree with their humanitarian aid disbursements to conflict areas, as aid unquestionably contributes to the war economy and perpetuates conflict. Further, that my findings for North African cases were very different from those for Sub-Saharan Africa is a point of interest for both future research and, ultimately, the development of new policy objectives. That a one percent increase in humanitarian aid to a North African country has the result of increasing the likelihood that a conflict will end by almost four times (whereas the same increase in aid has the opposite effect in Sub-Saharan Africa) could suggest that, while governments international NGOs should proceed with caution in Sub-Saharan Africa, they should be less hesitant about distributing food and medical aid in conflict regions in North Africa. Future research should emphasize clarifying what, in particular, can account for this difference. If it can be attributed to differences in institutional and governmental efficiency, developed country governments should focus their policies in the developing world on improving institutions so that they become comparable to those found in North Africa.

TABLE 1:
Linear Regression Results

Variable	Coefficient (Std Error)
<i>CO2</i>	1358.731*** (35.159)
<i>Phone</i>	12.919*** (1.820)
<i>Life Expectancy</i>	14.047* (7.827)
<i>Constant</i>	-13.350 (405.061)
N	232

Notes: Significance levels: *** is <0.001, ** is <0.05, * is <0.10

Year	Somalia Per Capita GDP Estimate (2005 USD)
2000	814.86
2005	917.88
2006	923.05
2007	928.22
2008	929.51
2009	943.56
2010	942.26
2011	942.26

TABLE 2:
Accelerated Failure Time Survival Regression Models: Lognormal
(Full Model Results)

Variable	With Missing Values	With Somalia GDP/Capita Estimate
<i>Log(aid)</i>	0.037*** (0.010)	0.039*** (0.010)
<i>Ruggedness</i>	-0.017 (0.014)	-0.017 (0.013)
<i>Diamonds</i>	-0.017 (0.043)	-0.011 (0.043)
<i>Oil</i>	-0.040 (0.041)	-0.050 (0.040)
<i>GDP/capita</i>	0.000*** (0.000)	0.000*** (0.000)
<i>Constant</i>	9.545*** (0.057)	9.536*** (0.058)
N	219	219
Episodes	64	64

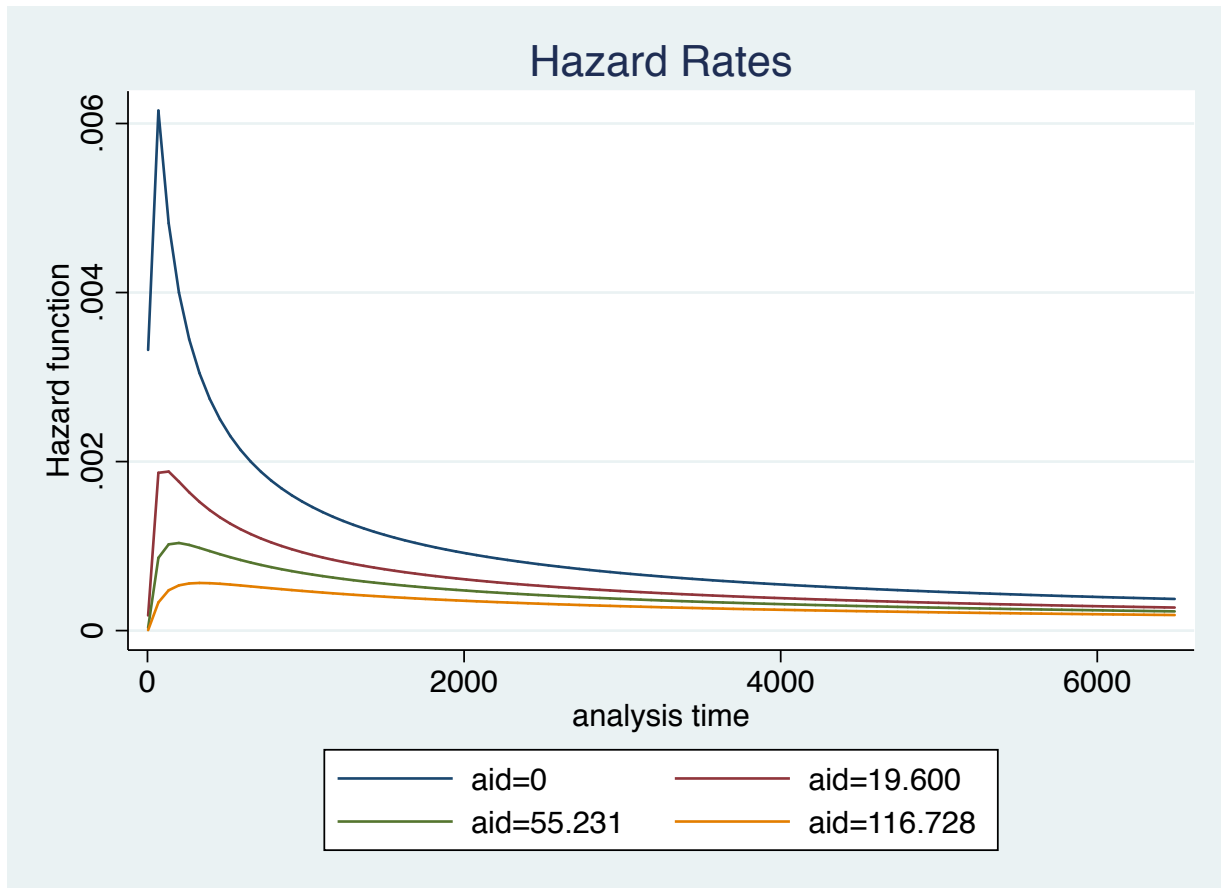
Notes: Significance levels: *** is <0.001, ** is <0.05, * is <0.10

TABLE 3:
Accelerated Failure Time Survival Regression Models: Lognormal

Variable	Sub-Saharan Africa	North Africa
<i>Log(aid)</i>	0.441** (0.174)	-3.605** (1.194)
<i>Ruggedness</i>	0.052 (0.191)	-41.391** (14.416)
<i>Diamonds</i>	-0.120 (0.412)	--
<i>Oil</i>	-0.285 (0.608)	--
<i>GDP/Capita</i>	-0.000 (0.000)	-0.002 (0.002)
<i>Constant</i>	4.886*** (0.765)	49.514*** (14.134)
N	179	40
Episodes	59	5

Notes: Sub-Saharan African model includes GDP/capita estimates for Somalia. Significance levels: *** is <0.001, ** is <0.05, * is <0.10

FIGURE 1:



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