Is Genocidal Behavior Learned? Assessing the Familial Ties of Genocide Perpetrators

Thesis

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Abstract

Since 1945, nearly 50 genocides have occurred, causing more deaths than all internal and international wars combined. In recent years, scholars have highlighted the role of interpersonal networks in shaping the dynamics of mass killing and violence. Fujii and McDoom find that local social ties, particularly those connected to kinship, explain patterns of participation in the 1994 genocide in Rwanda. Inspired by these studies, and utilizing data from Rwanda’s post-genocide Gacaca courts, I draw on criminological theories of socialization into deviance to investigate whether siblings’ behavior predicts perpetration of particular types of genocidal offenses. Results indicate that exposure to siblings’ violence influences the type of individual participation, suggesting that genocidal crime, like other types of crime, may be learned through interaction with intimate social ties.
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Chapter 1: Introduction

Samantha Power, United States ambassador to the United Nations, designated the 20th century “the age of genocide” (Power, 2013). Since 1945, over 50 such events have occurred, causing more deaths than all internal and international wars combined (Harff, 2003). Social scientific research on instances of mass killing and violence stems back to post-World War II, where the motives of Nazi killers were examined (e.g., Adorno, 1950). Since then, studies have accumulated at increasingly expanding rates, though explanations for the proliferation of “willing executioners” remain inconclusive (Goldhagen, 1997; Loyle, 2009; Waller, 2001; Owens et al., 2013). Much mystery still clouds how and why seemingly “ordinary” individuals become involved in genocidal killing processes.

In recent years, a small body of research has profiled the social networks of perpetrators and found evidence that social interaction influences participation in genocidal crimes (McDoom, 2014; Fujii, 2009; Straus, 2016). In line with Granovetter’s simple yet powerful theoretical insight, these studies emphasize that genocidal behavior, like many forms of social behavior, is fundamentally embedded in prior social relations (Granovetter 1985, p.504; Fujii, 2009; McDoom, 2014). Further, it is not the quantity of ties in someone’s social network that influences pathways into genocidal violence, but primarily the quality and type of tie. Small-scale, interview-based studies reveal that
family members who perpetrate genocide play particularly prominent roles in the radicalization process (McDoom, 2014; Fujii, 2009).

Stemming from this research, I advance knowledge on perpetrators’ pathways into genocidal violence through systematically investigating the relevance of siblings’ crimes. Utilizing the entire collection of Rwanda’s Gacaca court trials, the largest database of convicted genocide perpetrators in history, I assess how sibling ties among Rwanda’s genocide perpetrators are linked to characteristics of offenses. To do so, I focus on the extraordinary events in 1994 Rwanda, in which approximately one in five ethnic Hutus mobilized to perpetrate genocidal crimes (McDoom, 2014). Over the span of a few months, at least 800,000 individuals were killed, millions were displaced, and many others were the victims of sexual violence, property attacks, and torture (African Rights, 1995). Critically, this violence was marked by exceptionally high levels of civilian participation (Des Forges, 1999; Straus, 2006).

After reviewing scholarship on the motivations and behaviors of genocide perpetrators, I explicate how the criminological theory of differential association provides a set of formal propositions to examine whether radicalization in genocidal behavior is learned through siblings. I then discuss prior research on the relationship between siblings and deviant behavior, before turning to an overview of the Gacaca court data. Finally, employing mixed effects logistic regression, I assess how siblings’ crimes predict perpetration of distinct types of genocidal offenses.

1 Outside of the Rwandan government, Dr. Hollie Nyseth Brehm, myself, and a small research team are the only individuals afforded access to the court trials. Hollie Nyseth Brehm obtained the records through her partnership with the Rwandan National Commission for the Fight against Genocide.

2 Estimates range from 800,000 to 1.2 million individuals.
Chapter 2: Background

Copious writing is devoted to the definition of genocide (Owens et al., 2014). In 1948, the contracting parties at the General Assembly of the United Nations adopted the Convention on the Prevention and Punishment of the Crime of Genocide and formally codified it as “acts committed with intent to destroy, in whole or in part, a national, ethical, racial or religious group,” and declared it illegal under international law (Schabas, 2005). However, while the legal codification provides an operational definition, it suffers from several limitations. Perhaps most saliently, perpetrators do not always publicize their intentions as clearly as Hitler did in 1925’s Mein Kampf, in which he articulately proposed the extermination of a people (Harff, 2003).

Further, individual participation in genocide may not always be so deliberate (Loyle, 2014). While the state typically affects the scale of genocidal violence, generally through offering “scripts” for participation, it does not fully determine exactly who participates or what types of crimes someone commits (Fujii, 2009, p.18). Therefore, I conceptualize genocidal crimes as acts of direct and indirect violence committed during genocide, regardless of intent. Direct violence includes person-to-person violence, such as...
as murder or assault. Indirect violence includes looting and property theft (see Brown, 2016). Both direct and indirect violence are crimes of genocide as outlined by international law, and both forms of violence occurred during the 1994 genocide in Rwanda.
Chapter 3: Literature Review

*Individual Theories of Genocide Participation*

Research on participation in genocide is generally divided between theories focusing on structural factors and those relating to the individual (Loyle, 2009). Well-developed in the literature, structural approaches invoke institutional, cultural, and situational explanations, such as characteristics of the state or particular historical conditions. For instance, institutional theories argue that state authority facilitates participation in genocide by legitimating the act, marking it “non-deviant” social behavior (Loyle, 2009, p.28). In contrast, cultural perspectives contend that certain societies are uniquely susceptible to genocidal violence. Goldhagen (1996) argues that members of the National Socialist Party could attend church on Sunday and kill Jews on Tuesday because of the special virulence and pervasiveness of German anti-Semitism. Likewise, Hinton (2005) finds that the Khmer Rouge’s “strategic appropriation of traditional Cambodian cultural schemata” motivated its followers to murder between one and a half to three million people in the late 1970s (Lincoln, 2008, p.113).

Theories focused on the individual, more limited, are driven by three major foci: psychological aberration, personal life conditions, and group membership (Loyle, 2009, p.27). Regarding the psychological aberration perspective, Browning and Arendt profiled individual perpetrators and concluded that they were “ordinary men” responding...
to group norms and bureaucratic obedience structures, rather than ideological fanatics (Arendt, 1963; Browning, 1993; Owens et al., 2014). Relatedly, in his notorious studies of obedience, Milgram concluded that Nazi killers were likely not psychologically deranged, but responding to authority figures in ways the general population might as well (Milgram, 1974). Studies pertaining to perpetrators of genocides other than the Nazi Holocaust generally follows suit. Straus’ (2006) interviews with perpetrators of the Rwandan genocide suggest that the demographic distribution of the killers largely resembled the adult Hutu male population. They, too, were emphatically ordinary.

The personal life conditions approach speculates as to whether persons dissatisfied with their social, economic, or political situation utilize violence to settle scores – either emotionally or materially (Loyle, 2009; Andre and Platteau, 1998). In the political science conflict literature, this theory is referred to as “the expression of individual grievances” (Loyle, 2009; Staub, 1989). In these types of situations, participation in conflict may be more likely when “private goods” are offered to an individual (Lichbach, 1995; Loyle, 2009). Although analyses of individual gains are under-developed in the perpetrator literature, conflict studies emphasize the efficacy of “selective incentives” in compelling individuals to violent action (Gurr, 1970; Loyle, 2009, p.29-30).

Finally, some studies suggest that membership in particular social groups can influence one to act against his or her particular value structure (Loyle, 2009; Kuper, 1983). In instances of genocide, individuals may be more likely to engage in violence if other members of their social networks are also participating, sometimes out of fear of social sanctions. Therefore, according to research in this vein, stronger social structures
within communities will actually increase an individual’s incentive to participate, through legitimating acts of violence (Fujii, 2009; McDoom, 2014; Loyle, 2009).

Fujii’s (2009) and McDoom’s (2014) research falls into the “group membership” camp. Fujii (2009, p.30), building on the work of Straus (2006), sought to disaggregate the Rwandan genocide and investigate the innumerable decisions made by ordinary Rwandans who “killed, rescued, and resisted … pillaged, profited, and protested” through 82 in-depth interviews. Ultimately, she finds that non-elite “foot soldiers” of the genocide joined the killing sprees because of personal relationships with local, self-interested politicians, rather than ethnic hatred or fear. Specifically, political leaders used family ties as avenues of recruitment (Fujii, 2009, p.187). Moreover, through surveying 116 members of a demographically representative sector in southwestern Rwanda, McDoom (2014) found that for every additional family member who participated in the violence, the odds of the related individual participating increased by 75 percent. For McDoom (2014), family members were more predictive of participation than economic, social, or religious ties.

Fujii (2009) and McDoom’s (2014) research attests to the powerful significance of interaction with genocidal family members as to whether someone perpetrates a crime during the social upheaval of a genocide. However, the exceptional scale of genocidal violence depends not only on who participates, but the particular type of offense someone commits. Had Hutus in 1994 Rwanda committed only crimes against property, up to one million people would not have lost their lives. Therefore, it is critical to further investigate how familial relations influence perpetration of direct versus indirect genocidal offenses, such as murder versus property theft, to understand both why and
how the genocidal violence escalated to such an extraordinary degree. To do so, I turn now to a discussion of the criminological theory of differential association and prior research on the relationship between siblings and crime.

*Differential Association through Siblings*

Stephen Smith, the Executive Director of the Aegis Trust, aptly noted in 2004 that “the Nazis did not kill six million Jews…nor did the Interahamwe kill a million Tutsis, they killed one, and then another, and then another … Genocide is not a single act of murder, it is a million acts of murder.” In other words, despite its central organization, genocide is, essentially, a series of crimes (Nyseth Brehm 2015). As such, in 2005, Hagan and colleagues (2005, p.555-6) implored criminologists to initiate the study of genocide, as well as of other war crimes and crimes against humanity, to apply well-tested theories of deviant behavior to wide-scale civilian participation in political violence (Pickett et al., 2014; Savelsberg, 2010).

A foundational criminological theory, differential association proposes that criminal behavior is learned through a process of social interaction, and that most learning takes place within intimate groups (Sutherland and Cressey, 1978). The content of learning crime includes two important elements: the requisite skills and techniques, as well as definitions both favorable and unfavorable to violation of law (Matsueda, 2006; Sykes and Matza, 1957; Cressey, 1953). Critically, the theory further posits that individuals are exposed to *specific* values and techniques for committing *particular* types of offenses (Matsueda, 2006; Sutherland and Cressey, 1978; Burgess and Akers, 1966, p.141). College students may absorb from their peers “I can drive fine after a few beers”
while white-collar criminals understand that “everyone cheats on their taxes sometimes” (Matseuda, 2006). Therefore, to understand the behavior of the genocidal property offender versus the genocidal killer, differential association directs researchers to examine the values, mores, and behavior of key members of the individual’s social circle (Sutherland and Cressey, 1978; Burgess and Akers, 1966, p.141).

Extensive research has examined processes of social learning within families, and has demonstrated a number of salient patterns pertaining to the role of siblings. Controlling for the roles of parents and peers, siblings’ alcohol and substance abuse (Whiteman et al., 2013; Carbone-Lopez and Miller, 2012), antisocial behavior (Herrenkohol et al., 1999), and deviant social ties (Ardelt and Day, 2002) are strongly predictive of similar types of outcomes. Further, these effects do not differ by ethnicity, race, family structure, or the quality of the sibling relationship (Ardelt and Day, 2002). Given such a plethora of evidence, some scholars have postulated that the family environment may be the key factor in understanding the etiology and maintenance of deviant behavior (Grych and Fincham, 1990; Yahia and Noursi, 1998).

Relatedly, siblings clearly play important roles in perpetration of extreme acts of political violence. For example, nearly every major terrorist attack on Western soil has involved siblings, with three sets of Saudi brothers among the 19 hijackers who carried out the September 11th attacks (Yardley et al., 2016). The macabre list also includes the Kouachi brothers, who gunned down 12 people in the Paris offices of the satirical newspaper Charlie Hebdo, the Tsarnaev brothers, who perpetrated the 2014 Boston Marathon bombings, and the Barkraoui brothers, who detonated suicide vests at the

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6 Akers developed Sutherland’s propositions to emphasize the role of social reinforcement.
Brussels airport in March of 2016. As scholars affirm, the mechanisms underlying this phenomenon may be multitude. Siblings can radicalize each other while reinforcing a sense of purpose and ideological calling, keep watch on each other to ensure an attack is carried out, and communicate easily. Further, the “glue” of the family can often serve as insurance against one betraying the violent mission (Stern and Berger, 2010; Yardley et al., 2016).

The studies cited above attest to the important role of siblings as figures who influence deviant behavior, in terms of extreme forms of politically-motivated murder as well as more common forms of delinquency. However, while a few studies explore the relevance of social learning within families in non-Western countries, no research to date, to my knowledge, explores the applicability of differential association to crimes committed in the context of genocide. Further, there is a dearth of research examining the differential impact of exposure to specific types of deviance (for an exception, see Yahia and Noursi, 1998), such as indirect versus direct genocidal crimes. This research thus addresses these conspicuous lacunas.
Chapter 4: The Current Study

On 6 April 1994, the plane carrying President Habyarimana was shot down on descent into Kigali. Immediately, Hutu extremists seized power and began systematically hunting down and murdering Tutsis and Hutu moderates. While government leaders were largely responsible for orchestrating the genocide, there was vast popular participation, including particularly high levels of civilian participation without formal recruitment. Judges, doctors, and priests took part in the genocide by murdering their neighbors, looting houses, or raping individuals (Mamdani 2001; Hatzfeld 2006; Straus 2006; Nyseth Brehm et al., 2014). As stated above, over the span of a few months, at least 800,000 individuals were killed, millions were displaced, and many others were the victims of sexual violence, property attacks, and torture.

The present study explores these exceptional events to assess the relevance of siblings’ behavior during genocide as a predictor of whether those who looted (“property offenders”) also committed acts of violence (became “property and violent offenders”).

The massive scale of death that occurred during the Rwandan genocide was a result of wide-scale civilian participation in general as well as perpetration of particular types of offenses. While an extraordinary number of people committed crimes against property, such as looting dead bodies on the street, others committed not only property offenses but also murder, torture, and sexual assault. Understanding the factors that shaped property
offenders’ pathways into violent crime is thus crucial for understanding the magnitude and duration of the genocide.

To elaborate further, while some individuals committed exclusively property offenses, others committed exclusively violent offenses, and still others committed both. In this paper, I focus on those that committed just property and those that committed property and violence. Put another way, I ask, what are the odds of property offenders with violent siblings committing violent crime, compared to the odds of property offenders without violent siblings committing violent crime? This means that I do not consider the relevance of sibling ties for those who exclusively committed violent offenses, because if these individuals had not committed those acts, they would not be in the database. There is no appropriate counterfactual condition. Focusing on property offenders versus “property and violent” offenders allows me to best estimate the discrete outcomes associated with siblings’ crimes.

Thus, stemming from Sutherland’s theory of differential association, which proposes that individuals learn specific techniques for particular types of offenses, I design a model to test the following hypotheses based on the different types of crimes siblings could have committed, either “property only” offenses, “violent only” offenses, or “property and violent” offenses. I consciously made a distinction between the latter two categories. The “property and violent” siblings group will allow me to test the effects of exposure to violence when individuals are exposed to both violent and non-violent (or “indirectly violent” genocidal behavior). In other words, is siblings’ violent behavior still impactful when exposed to multiple definitions of deviance? Therefore, my hypotheses are:
$H1$: Among those who committed property offenses, those with property-only offending siblings will not have significantly higher odds of committing violence, compared to those with no criminal siblings. 

$H2$: Among those who committed property offenses, those with violent-only offending siblings will have significantly higher odds of committing violence, compared to those with no criminal siblings.

$H3$: Among those who committed property offenses, those with “property and violent” offending siblings will have significantly higher odds of committing violence, compared to those with no criminal siblings.

Data

After the 1994 genocide, Rwanda instituted the Gacaca courts, a justice system unique to the country, as a mechanism to both bring perpetrators to justice and initiate a healing process for the country. Gacaca means grass, and as the name implies, the Gacaca courts were held outside in empty markets, schoolyards, and other public places within each community (Nyseth Brehm et al., 2014). Lay members of the community who were 21 years or older, held no previous convictions, and had not served in a government role during the genocide were selected as judges. Overall, the Gacaca justice system consisted of 12,103 courts and completed 1,958,634 cases (Nyseth Brehm et al., 2014, p. 339; National Service of Gacaca Jurisdictions).

Rainey (2014, p.1083) clarifies that while social scientists commonly consider a lack of statistical significance evidence for a negligible effect, this is neither necessary nor sufficient. Instead, scholars should utilize the “two one-sided tests” approach, which stems from the biostatistics literature and “enables analysts to make more compelling arguments for their hypothesis of a negligible effect by explicitly testing whether meaningful effects are plausible.” To hypothesize a null effect, I followed Rainey’s methodological suggestions.
Approximately nine percent of total cases were appeals cases (Nyseth Brehm et al., 2014, p. 340). In this article, to avoid confusion and duplication, I omit appeals from the analysis. I also exclude those who were acquitted, as I am only interested in siblings’ effects on types of crimes committed during the genocide. Therefore, my total sample consists of 1,456,574 convictions, though this number refers to trials, not people. Individuals who committed multiple crimes had separate trials for each crime he or she committed in each administrative district where it occurred (Nyseth Brehm et al., 2014; National Service of Gacaca Jurisdictions).

_Gacaca_ law divided the genocidal crimes into the following three categories based on their relative severity. In line with the data analyzed, the percentages refer only to guilty convictions.

- **Category One (2.79% of trials):** People accused of planning, organizing, or supervising the genocide; people who acted in positions of authority or leadership; people who incited genocide; and people who committed acts of rape or sexual torture.
- **Category Two (25.24% of trials):** People or accomplices who intentionally killed someone or injured someone through acts intended to kill her or him; people who committed dehumanizing acts on the dead, torture, and other criminal acts against other people.
- **Category Three (71.97% of trials):** People who committed offenses against property, such as looting.

Through a partnership with the Rwandan National Commission for the Fight against Genocide, Ohio State University professor Hollie Nyseth Brehm obtained all of

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8 The courts were originally designed with four categories of crime.
the records from the trials. The court records include basic demographic and familial information about the perpetrators, including sex, date of birth and family identifiers, as well as the relevant information from their trials: whether they were found guilty, the punishment, the category of the crime, and the date of the trial. As category one trials primarily involved individuals in unique positions of power such as members of the interim government, they are not included in this study. Rather, I restrict my analysis to “ordinary” members of 1994 Rwandan society: category two violent offenders and category three property offenders. Critically, category three property crimes constitute the non-violent (or “indirectly violent”) genocidal offenses.

As stated above, individuals had separate trials for each crime he or she committed in each administrative district where it occurred. Therefore, I first converted the database from one of trials to one of people. I accomplished this by matching perpetrators on three key variables: their own last name, their father’s last name, and their mother’s last name. In Rwanda, family members do not share the same last name, so matching on three distinct sets of text ensures the validity of capturing unique individuals. With this step, the database went from 1,456,574 trials to 777,252 individuals. Excluding category one offenders (the minute group of perpetrators who planned and organized the genocide) as well as category two “violent only” offenders, the number drops to 549,995. Of these perpetrators, 88 percent (483,603) committed exclusively property offenses, while 12 percent (66,392) committed property and violent offenses.

Next, I matched siblings according to shared parents’ last names. Individuals whose mother and father shared the same last names were classified into sibling groups.
Those who were missing information on these variables were dropped from the database (see footnote nine regarding missing data). I then generated a median age for each sibling group, and dropped siblings who fell outside of 15 years of that median age to account for unlikely matches and outliers. Finally, as the Gacaca data include the location of the crime committed, I match individuals to the Rwandan commune (administrative district) where the crime occurred in order to control for certain environmental effects. After matching siblings and communes, my database consists of 359,249 perpetrators. Of this final sample, 91 percent (327,820) of the property offenders committed exclusively property offenses, while nine percent (31,429) committed “property and violent” offenses.

**Dependent Variable**

I utilize as my dependent variable a conviction of violent genocidal crime, a category two Gacaca offense, versus a non-violent (or “indirectly” violent) genocidal crime, a category three Gacaca offense. Violent genocidal crime is coded as one and non-violent genocidal crime is coded as zero. In total, approximately nine percent of the

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9 I argue that despite the missing data, my results presented here are still meaningful. I assume that missing or erroneous data on parents' names are entered without any regard to the characteristics of the person or the crime, so I argue that these data are missing completely at random (“MCAR”), as distinct from missing at random (“MAR”). Data missing completely at random pose the fewest problems for the analyst because, by definition, MCAR data will add no systematic bias (Vogt et al., 2014). Therefore, MCAR data will not bias regression estimates in one direction or another, although they may introduce more error compared to a perfectly complete and accurate data set. Further, running my analyses on communes (administrative districts) with the least amount of missing data yields extremely similar results.

10 The administrative boundaries in Rwanda changed after 1994, so the 1991 census data administrative boundaries did not match the administrative boundaries pertaining to the Gacaca courts.

11 This analysis relies on the assumption that everyone who was found guilty indeed perpetrated the crime, but like all courts, there were surely those who were found guilty but did not commit the crime, as well as a “dark figure” of unreported or undiscovered crime. However, the fact that there were acquittals indicates the care the court took to assess who was truly guilty of genocidal offenses.
property offenders also perpetrated at least one violent offense. Note there is no
distinction regarding the frequency of violent crime committed, only whether it occurred.

Predictor Variables

My key predictor variables are also derived from the Gacaca data and reflect the
different types of crimes property offenders’ siblings committed. I utilize a categorical
variable to capture the variation. The four categories include whether a particular
offender had: (1) no criminal siblings, (2) property-only offending siblings, (3) violent-
only offending siblings, and (4) property and violent-offending siblings. Note that each
category refers only to the presence of absence of these groups. I make no distinction as
to whether the property offender had multiple “violent only” siblings or one “violent
only” sibling. Likewise, if a property offender had only one sibling who committed a
violent crime and a property crime, he or she would be classified in the “property and
violent” siblings category. The first category, no criminal siblings, constitutes the
reference group.

Tellingly, of the sample of 359,249 property offenders I analyze, 152,018 (42
percent) had at least one sibling who perpetrated either a property and/or violent
genocidal offense. Breaking this number down further, as Figure one visually
demonstrates, 102,556 property offenders had a sibling (or siblings) who exclusively
committed property offenses, 11,432 had a sibling (or siblings) who exclusively
committed violent offenses, and 38,030 had a sibling (or siblings) who committed both
violent and property offenses.
These “sibling effects” variables are categorical rather than continuous for three important reasons. First, treating siblings as continuous results in skewness and non-linear distributions, due to the large number of people who have either zero or one criminal sibling(s). Second, after running a model predicting violent crime that included a continuous measure of siblings who had committed violent offenses, a post-estimation pairwise comparison indicated that there is no statistical difference between one violent sibling versus several. Finally, as I do not have the non-perpetrator population, the data do not allow for analysis of how the proportion of sibling ties influences behavior. Put another way, I know how many siblings committed a genocidal crime, but not how many out of the total number of siblings. A strong argument regarding proportionality would require data on the non-perpetrator population. Therefore, I test the association of simply having at least one sibling who commits a particular genocidal offense.

Control Variables

I incorporate two sets of control variables. The first set reflects individual characteristics of the property offenders and are derived from the Gacaca database. These include age and sex, which scholars affirm are among the strongest correlates of violent crime (Gottfredson and Hirschi, 1990). The modal age of the “property offenders” group is 30, though the individuals range from ages six to 79, and 90 percent of them are male. As stated above, some scholars have theorized that individuals perpetrate genocidal crimes due to “selective incentives.” While the Gacaca database includes the individuals’

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12 82 percent of the property offenders in my database have either zero or one criminal sibling(s).
occupations, which could be an appropriate measure for socioeconomic status and thus capture variation in incentives, over 99 percent of property offenders were farmers, rendering it meaningless to include this individual-level variable in the model.

The second set of control variables reflect the broader communities in which people lived. The first two variables, marriage and formal employment rates, are obtained from the 1991 Rwanda Census and reflect characteristics of Rwandan communes. These were small areas governed by mayors who wielded substantial local power, including often directing violence when the genocide began (Wagner, 1998; Nyseth Brehm, 2015; IPUMS International 2012). In 1994, Rwanda was divided administratively into 145 communes.

The 1991 census occurred less than three years before the genocide and provides the best estimates of 1994 measures of communes. The Minnesota Population Center cleaned the data for use in academic research (IPUMS International, 2012; Nyseth Brehm, 2015). As Rwanda conducted both a de facto and de jure census—meaning they counted present residents, absent residents, and visitors—the data are restricted to present and absent residents to avoid double counting. Individual-level data are aggregated to commune means and children are excluded for variables that only pertain to adults (Nyseth Brehm, 2015).

I include measures for marriage and employment rates to control for variable levels of social cohesion and disorganization across communes. Criminologists have long examined how community characteristics influence the likelihood of deviant behavior, finding strong associations between weakened levels of social cohesion, social organization and deviant behavior (Berg et al., 2014). Sampson (1987) argues that marital
disruption decreases informal social control among communities, which is in turn associated with higher crime rates. Likewise, Shaw and McKay (1942) contend that lower socioeconomic status negatively affect social disorganization, which similarly leads to higher levels of deviance.

In recent years, criminological scholars of genocide have shed light on how community-level factors influence genocidal behavior as well (Nyseth Brehm, 2015). Therefore, I include controls for commune-level marriage and employment rates, as scholars theorize that these are likely to structure overall participation in violence. Further, including a control for commune-level formal employment provides some measurement for the “selective incentives” theory of genocide participation, which argues that individuals may be more likely to participate in genocide for reasons of material gain. Due to the very low levels of unemployment in 1994 Rwanda, the formal employment variable measures whether citizens are an employer or an employee (rather than self-employed as a farmer).

Finally, I also add a control measure capturing rates of deaths per communes. This measure was obtained by Dr. Brehm from a survey conducted by the Rwandan Ministry of Local Administration and Community Development (2004) and the National University of Rwanda. I include a measure for deaths to control for the fact that some communes experienced significantly more violence than others. This number is transformed into a logged rate that standardizes on killings per 10,000 people in each commune. Age, marriage rates, formal employment rates, and deaths per commune are

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13 The selective incentives theory focuses more on an individuals’ particular socioeconomic status, but including a commune’s formal employment rates at least allows me to control for the community.
centered at their means in my models. See Table one for a breakdown of descriptive
statistics regarding dependent, predictor, and control variables.

Analytic Strategy

To assess the associations of criminal siblings on the odds of property offenders’
perpetrating violence, I utilize mixed effects logistic regression, a type of generalized
linear model that allows me to account for clustering at both the sibling level and the
commune level (Lachowsky et al., 2014). This type of model is best for variables that
must be understood in context, or that can be seen as being in a series of levels of
analysis, with each higher level including the lower levels (Vogt et al., 2014, p.327).
More specifically, mixed effects logistic regression accounts for the nested structure of
my data – as individuals are nested in families, and families are nested in communes –
and the binary outcome. I turn now to the results.
Chapter 5: Results

Model one introduces the first block of variables, assessing the associations of siblings’ crimes on the odds of property offenders committing violence. “No criminal siblings” is the reference group. The three comparison groups are all significant at p<.001, indicating that there are statistically significantly higher odds of a property offender with any type of criminal siblings committing an act of genocidal violence, compared to a property offender with no criminal siblings. Specifically, the odds of those with property-only siblings committing violence are 1.5 times higher. Having violent-only siblings increases the odds by 3.5, while having property and violent siblings increases the odds by 3.77.

The results both strongly support, as well as fascinatingly diverge from, the differential association framework. Based on Sutherland’s propositions that individuals learn specific techniques for particular types of offenses, I hypothesized that property-only siblings would not have a statistically significant effect, and that violent-only as well as property and violent siblings would lead to increased odds of perpetration of violence. The latter two are strongly echoed in the model. Violent siblings, regardless of whether they committed exclusively violent crimes or property and violent offenses, are
powerfully predictive of violent behavior. However, my hypothesis regarding property-only offending siblings was not supported. Rather, it appears that exposure through siblings to *any* type of genocidal offenses leads to significantly higher odds of violence, though there clearly *is* a hierarchy.

Model two introduces individual-level controls, age and sex. Both variables are significant, and their slight mediation of the sibling effects indicate that these factors account for part of the reason a particular property offender commits violence, which is in line with criminological research that would predict such a finding (Gottfredson and Hirschi, 1990). However, after controlling for the fact that the majority of violent offenders were young men in their 20s and 30s, the effects of criminal siblings are still robust. As in the previous model, among property offenders, those with violent siblings have over three times higher odds of committing violence themselves. Likewise, those with property-only siblings have 1.38 higher odds of committing genocidal violence, compared to those with no criminal siblings.

Turning to model three, this block introduces the commune-level control variables, including marriage rates, formal employment rates, and average deaths per commune. Marriage is marginally significant (p<.05), although the magnitude of the coefficient is not particularly strong. As marriage rates increase, the odds of a property offender committing a violent offense decrease by two percent, suggesting that the social cohesion of a community plays only a minor role in perpetration of genocidal violence, a result of genocide fundamentally uprooting levels of trust. Formal employment rates are
not significant, indicating a lack of support for the “selective incentives” argument. Finally, average deaths per commune proves the most meaningful community-level variable. With every increase in the log of deaths per 10,000 people, the odds of a property offender committing violence increase by 29 percent.

Model four includes both levels of controls to ascertain the robustness of the sibling effects. Thus, critically, even after controlling for individual- and commune-level effects, the influence of intimate social ties remains highly significant. Accounting for the fact that young men committed the vast majority of violent crime, as well as subnational variation in overall killing and violence, property offenders’ behavior in genocide is highly associated with the behavior of their siblings. Together, these findings are indicative of the powerful influences intimate social ties have on behavior in myriad aspects of social life, including the crime of all crimes, genocide.

Finally, model five includes an interaction between rates of death and the behavior of siblings. The magnitude of these variables in the previous model suggests that rates of violence may affect the relevance of intimate social ties. In other words, in communes with particularly high levels of violence and death, a property offender may be exposed to such a large number of “positive” definitions of violent genocidal crime that familial relations would be less significant. However, in areas of fewer deaths, perhaps the opposite effect occurs.

Figure Two demonstrates the salience of such an interaction, although the results diverge from what I expected. Across different levels of violence, property offenders with

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14 A drawback of this analysis is I only measure formal employment rates per community, whereas the theory focuses on the individual.
violent siblings have consistently higher predicted probabilities of perpetrating violence themselves, in line with what differential association suggests. However, at the highest levels of deaths, there is no statistically meaningful difference between having property-only siblings or violent siblings. Rather, exposure to *any* type of genocidal crime through siblings yields significantly higher odds of committing a violent genocidal offense. This suggests that at a certain threshold of killing and violence, siblings’ genocidal behavior becomes particularly impactful.
Chapter 6: Discussion

Granovetter (1985) perspicaciously observed that social behavior is fundamentally embedded in prior social relations. In line with this powerful theoretical insight, Fujii (2009) and McDoom (2014) demonstrate the relevance of the theory to a particularly heinous form of human collective behavior: genocide. As these scholars vividly reveal, participation in genocidal killing and violence is at least partly a function of the values, mores, and behavior of intimate social ties, particularly family members. Drawing from these studies, my research has extended this line of thought to test not only whether family predicts perpetration of genocide, but also if siblings affect particular types of offenses.

Heeding the call of scholars imploring criminologists to initiate studies of mass violence, my research utilized the criminological theory of differential association to generate a series of formal propositions regarding how siblings may be key figures in the pathway to genocidal violence. Specifically, I hypothesized that, among property offenders, siblings who exclusively committed property crimes would have no effect on the odds of violent crime, while siblings who committed violence would be associated with higher odds. The results were generally supportive of a differential association framework. Indeed, siblings who committed violence were powerfully predictive of property offenders committing violence themselves.
The unexpected finding was the role of property-only siblings. Differential association proposes that individuals learn *specific* techniques for *particular* types of offenses, and therefore argues that intimate social ties who committed exclusively offenses against property should not be associated with higher odds of committing offenses against the body. Yet, this study suggests otherwise. Exposure to any type of deviant siblings yielded higher odds of violent crime, though the larger odds associated with violent siblings indicates there *is* a hierarchy. Thus, in times of devastating social upheaval, when neighbors kill neighbors and women openly loot dead bodies on the street (African Rights, 1995), siblings’ participation in any format increases the odds of any “ordinary” individual starkly deviating from prior social behavior to commit murder, bodily harm, or torture.

These findings add powerful support to the “social interaction” theory of why people behave in particular types of ways during periods of mass killing and violence. While other scholars argue that perpetration of genocidal crimes is a result of psychological aberration or out of interest in material or emotional gain, my findings suggest that micro-level variation in participation is a function of the ratio of positive to negative definitions received from intimate social ties. In terms of policy, this suggests that in the midst of violent social upheaval, when previous social norms no longer apply, it is critical to target those who are *already* participating, as it is likely their immediate social networks will soon be compelled to perpetrate violence themselves.

This research is not without limitations. Most critically, the *Gacaca* database does not contain the dates of the offenses. Therefore, I cannot ascertain whether siblings’ offenses occurred before a particular perpetrator committed a crime, which affects a
radicalization argument. Likewise, research incorporating the criminal backgrounds of property offenders would shed light on pathways into genocidal violence. Put another way, are individuals who previously committed violence especially likely to perpetrate genocidal violence? Finally, the data do not allow for observation of mechanisms. Future research should investigate the particular quality of sibling relationships, as distinguished from other relationships, to understand why these ties have such potent influences on behavior. For example, how might discrete cultural definitions of siblings affect these relationships?

Despite these limitations, the research presented here considerably advances knowledge on the social processes that contribute to individual radicalization. Differential association provided a means to theorize genocide as a type of social action, and proposed that genocidal crimes, like other types of crimes, are learned through social interaction. The uniqueness and specificity of the Gacaca data provided an invaluable means to test this theoretical proposition, and the findings indicate that sibling relationships play critical roles in the pathway toward genocidal violence. Ideally, this research will stimulate future work on the role of interaction, and researchers can continue to untangle the factors associated with genocide such that intervention can be better tailored to prevent this horrific – and uniquely human – form of collective violence.
References


Appendix: Tables and Figures

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<tr>
<th>Dependent Variable</th>
<th>Property Offenders Who Also Perpetrated Violence</th>
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<td>Total: 327,820 Percent/Mean(SD)</td>
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Table 1. Descriptive Statistics
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*p<.05, **p<.01, ***p<.001

Table 2. Mixed Effects Logistic Regression Modeling of Sibling’ Behavior on Odds of Violent Crime
Figure 1. Distribution of Siblings among Property Offenders
Figure 2. Interaction between Siblings’ Crimes and Average Deaths per Commune.