Genocide, Nuptiality, and Fertility in Rwanda and Bosnia-Herzegovina

by

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Abstract

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How does exposure to genocide affect nuptiality and fertility among the surviving population? Genocides in Rwanda and in Bosnia-Herzegovina in the early 1990s caused high levels of population displacement, trauma, and death, along with a dramatic decline in the standard of living. In Rwanda, genocide also reduced the sex ratio of the marriage-aged population, while in Bosnia, despite the high proportion of male casualties, the overall sex ratio of the marriage-age population did not decline substantially. Contrary to the expected delay in first marriage throughout the process of demographic transition, there was clear evidence of a post-genocide marriage boom among younger cohorts in Rwanda. Meanwhile in Bosnia—a country that had already achieved the demographic transition and fairly steady marriage rates more than a decade before the war started—first marriage rates peaked slightly during and after the war and then continued to decrease during the decade after the war ended, never returning to prewar levels. Patterns in fertility echoed this trend, with a small baby boom in Rwanda contrasted with a fall in birth rates in Bosnia.

Drawing from a multi-method, multi-site study involving data analysis from nationally representative household surveys, 117 qualitative life-history interviews and 34 interviews with key informants in both countries, I assess the relative importance of several factors on marriage and fertility trends during and immediately after genocide in both countries. By examining the Bosnian and Rwandan cases in tandem, I situate demographic changes due to genocide in a broader social and historical framework.

It is difficult to compare the demographic effects of war and genocide in two countries that had widely divergent pre-war nuptial and reproductive contexts. I explore four broad sets of causal factors linking genocide with demographic outcomes: (1) *involuntary factors*, such as

mortality, separation of partners, and survival bias; (2) *material and economic factors*, including loss of income, changes in employment, and 'transactional marriage' during acute periods of crisis; (3) *sex ratio and gender role factors*, which encompass the change in the marriage market due to differential mortality by sex, changing gender roles during and after wartime, and norms of widowhood remarriage; and (4) *psychosocial factors*, including the duration and severity of conflict, the effects of rape and post-traumatic stress disorder [PTSD] on the surviving population, and the role of political recovery and social cohesion in demographic decisions and outcomes.

Whereas many journalists emphasized ethnic hatreds as the motivation behind both genocides, the instrumentalist view of ethnic conflict—which claims that ethnic divisions are exploited by elites during moments of economic and political crisis—has emerged as a powerful counter-narrative in both Bosnia and Rwanda. In areas where it is possible to measure ethnic differences my findings tend to support the instrumentalist view—namely, that economic and situational factors were more salient than ethnic differences in determining the demographic response to genocide.

Broadly speaking, the mortality effects of genocide dominated in Rwanda, and this helped fuel an increase in marriages and births after war. Meanwhile in Bosnia the economic effects of genocide and the accompanying transition to a market economy tended to dominate the demographic response to genocide, suppressing marriage and fertility rates during and after the war. To classify the dominant character of these genocides in this way is not to ignore the massive economic collapse in Rwanda, nor the extraordinary death toll in Bosnia, but rather to suggest the relative primacy of economic and mortality effects as mediating channels through which genocide affected demographic outcomes for the majority of the population in each country.

I postulate the need for a typology of the demographic effects of crisis. Famine, economic collapse, political instability, natural disaster, and armed conflict each affect population dynamics in different ways. Given the variation and complexity between the Bosnian and Rwandan genocides, it would be difficult to extrapolate directly from these two cases. Yet, when considered in tandem, the Bosnian and Rwandan case studies suggest a need to consider several important axes of variation—factors such as the intensity and duration of the crisis, economic effects, differential age structure effects, displacement, mortality, background conditions, and post-crisis political and social stability—when predicting the effects of future crises on nuptial and reproductive trends.

For my parents, Tim and Cathy, who sold their farm to
pursue higher education, and who steadfastly
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Chapter 1: Introduction

During the 1990s, genocidal campaigns in Bosnia and Rwanda attempted to 'cleanse' unarmed Muslims and Tutsis from their respective populations. In Bosnia, genocide was primarily committed by Serbian forces against Bosnian Muslims[1] from 1992 to 1995. In Rwanda genocide was committed by Hutu militias against Tutsis and politically moderate Hutus, and the majority of violence took place over 100 days in 1994. In both countries the lived experience of violence and displacement far exceeded the dates of the official genocide. In Rwanda, for example, the 1994 genocide was a massive escalation of sporadic armed conflict with a rebel Tutsi army that had begun in 1990. Civilian casualties in both wars[2] were predominantly male, but, particularly in Rwanda, combatants viewed attacking unarmed women and girls—current and future "mothers of the nation"— as justified (Allen 1996; Barstow 2000; Green 2002; Wood 2006).

This dissertation analyzes how mass violence in the 1990s affected nuptial and reproductive trajectories among surviving women in Bosnia and Rwanda. I triangulate evidence from secondary literature, 117 interviews with individual women and 34 key informant interviews I conducted in Bosnia and Rwanda over the course of nine months in 2007 and 2008, and quantitative analysis of nationally representative household surveys. By examining the Bosnian and Rwandan cases in tandem, I situate demographic changes due to genocide in a broader social and historical framework.

The theory of 'demographic transition' posits that as societies move from high and unstable mortality regimes to low and predictable rates that fertility will tend to fall toward replacement levels. What happens when this process of demographic transition is disrupted by war and genocide? It is often under the most extreme circumstances that we begin to understand the nature of human behavior. Yet civil wars and genocides are not exogenous events that strike a country at random. Rather, they signify a deep breakdown of government and civil society, an acute phase of a crisis that began before the first shot was fired. For this reason I tend to resist an overly simplistic treatment-effect model of genocide and demographic trends. To the extent that nuptial and reproductive outcomes reflect individual decisions, they are a complex product of social context, cultural norms, economic reasoning, and individual

[1] In Bosnia, Muslim is considered an ethnic distinction rather than a religious one. Muslims are also referred to as 'Bosniaks.'

[2] Following Shaw (2003), I use the term 'war' to refer to the larger context in which genocide occurred in both countries. In Bosnia, this war was the 1992-1995 struggle for independence from the former Yugoslavia, while in Rwanda the 1994 genocide grew out of a conflict between the government and exiled Tutsis that began in 1990 and has continued as a low-level conflict between exiled génocidaires in the Eastern Congo and the Rwandan government.

circumstances. Genocide adds additional dimensions of economic, political, and social complexity.

Comparing demographic trends after the Bosnian and Rwandan genocides is inherently challenging for another reason: the two countries had vastly different social structures, governments, income levels, gender norms, ethnic divisions and fertility rates prior to the genocide. Any analysis of these two cases risks being overdetermined by pre-existing differences. Yet nuptial and reproductive behaviors and intentions, which are essential for population survival, offer an intriguing point of comparison between the two cases. For example, ethnic intermarriage was relatively common in both countries before the outbreak of war, yet there was mass civilian participation in ethnic cleansing. Neighbors often killed and raped neighbors; even in-laws were not necessarily safe. Both populations have also faced an enormous dearth of males in the wake of ethnic cleansing, which has altered the dynamics of marriage and reproduction among widows and surviving females to this day.

In this dissertation, I examine the short- and medium-term nuptial and reproductive trends associated with these genocides. I consider the years leading up to war, the period(s) of acute conflict, plus what the World Health Organization [WHO] (2000) dubs the 'return' and 'stabilization' phases afterward. According to the WHO, these latter phases encompass the return of the majority of refugees and internally displaced persons [IDPs], the reorganization of families and communities, the fulfillment of basic needs of most of the population, and the general normalization of life for the majority of the population.

In Rwanda the genocide officially ended in 1994, but many perpetrators of the genocide remained in Eastern Congo and carried out systematic attacks on the population in Western Rwanda in 1997 and 1998, displacing over half a million persons. In Bosnia, the genocide officially ended when the Dayton Accords were signed in December of 1995, but even in 1999 one-fifth of the pre-war population was still displaced. Given the level of postwar chaos it is difficult to assign concrete 'start' and 'end' dates for the overall crisis in either country. Both have made progress in recovery, but the effects of war continue to linger up until this day. However due to the availability of national survey data, I primarily focus on the period from 1990 to 2005 in Rwanda and the period from 1992 to 2002 in Bosnia.

While most genocide research focuses on either victimized groups or perpetrators, this dissertation examines the phenomenon of genocide from a population perspective, and it explores how 'ordinary' civilian women are affected as mothers, daughters, caretakers, widows, refugees, and silent witnesses to the horrors that unfolded around them. Even if not directly exposed to the risk of violence, few are immune from the economic, political, and social collapse associated with genocide, not to mention the fear and stress associated with the

constant risk of death. At the same time, individual perpetrators of violence may benefit from looting and other spoils of war, but their partners[3] and families may not share in these benefits, and in fact likely suffer in the absence of an able-bodied male who was traditionally the primary breadwinner and protector. Women in Rwanda whose husbands were imprisoned for over a decade after the genocide may or may not have condoned his participation in the violence but nonetheless face some of the same challenges as widows in his absence.[4]

Targeted killing of battle-aged men leaves a large surviving population of women, children, and elderly persons who have suffered the direct and indirect effects of war and genocide. Particularly in male-dominated societies, female-headed households tend to experience crushing poverty after the loss of working-age men. In East Timor an Indonesian camp guard told one refugee: *You may have got your country but it will be a land full of widows* (Aglionby 1999: 19). How wartime experiences and outcomes such as widowhood affect nuptial and reproductive decisions and outcomes will, in turn, have cascading impacts on population age structure, the labor market, and ethnic tensions for decades to come.

Women are not necessarily passive victims of war, however. A few were perpetrators of genocide, and many silently (and implicitly) support those who do. Many were resisters: in Sarajevo, during the longest siege in modern-day history, when civilians were cut off from electricity, running water, food, and other necessities, and when snipers and mortar shells would often intentionally target hospitals, schools, marketplaces, playgrounds, and other civilian areas (Carballo, Simic and Zeric 1996; Glenny 1996), simply going about the business of one's daily life was often a tremendous act of courage.

Although it is argued that wars generally do not *stem* from ethnic antagonisms alone (Collier and Hoeffler 2000; Leonard and Straus 2003), combatants in recent wars often tend to be *mobilized* along ethnic lines, which may increase the use of rape as a weapon of war. Soldiers are also well-known for using their power to extract sexual services from local women, and this may be particularly true of rebel groups who do not face any internal organizational sanctions for raping civilian women and girls.

For these reasons, nuptial and reproductive outcomes are a particularly important (if understudied) point of comparison between the Bosnian and Rwandan cases. In the remaining

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[3] In Rwanda it is well-documented that women were involved with planning and in some cases with executing the genocide (African Rights 1995; Itano 2002). In Bosnia female participation is less well-documented, but the Research and Documentation Centre [Sarajevo] (2007) records 389 female soldier deaths during the war (0.6% of all soldier deaths).

[4] Some Rwandan respondents whose husbands were imprisoned after the genocide reported that they were expected to bring their husband food in prison and to remain chaste, two expectations that widows did not face. Like widows, they may have also been evicted from their husband's property while he was in prison.

chapters I lay the framework for the analysis, and then explore nuptiality and fertility in-depth. Chapter 2, the background chapter, provides a brief description of the social and political history of each country. It discusses the dynamics of both genocides, and describes the initial demographic and economic effects of war and genocide: mortality, conscription and imprisonment, displacement, mass rape, and economic collapse on short-run fertility. Chapter 3, the methods chapter, provides an overview of the nationally representative survey data used for the dissertation and describes the multi-stage cluster survey I conducted in each country.

In Chapter 4 on nuptiality, I explore potential causal pathways between genocide and marriage; examine demographic evidence of changing nuptial patterns in Bosnia and Rwanda; and analyze the individual risk of marriage both qualitatively and statistically to understand the link between complex societal changes and micro-level demographic behavior. Chapter 5, the fertility chapter, explores the connection between reproductive intentions, behaviors, and outcomes. I review the prior literature on fertility and crisis, explore potential causal pathways, and analyze quantitative and qualitative evidence. I use descriptive data and survivor testimonies to unpack the overall relationship between fertility and genocide under several types of scenarios, and statistically analyze the risk of first birth among survivors.

While it is difficult to definitively establish a causal link between macro-level social, political, and economic turmoil and micro-level demographic phenomena, I explore four sets of factors that seem to account for much of the post-war marriage and fertility boom in Rwanda and the post-war decline in Bosnia. First, what I term *'involuntary factors'*: the general tendency to postpone marriage and childbearing during times of economic and social crisis, unplanned pregnancies due to rape and the lack of contraception, miscarriages, famine-induced infecundity, and 'survival bias' in post-war rates—whereby women who perished had, on average, different patterns of age at first marriage. Second are *'economic and material factors'*: the economic collapse associated with genocide in both countries, and in Bosnia the concurrent transition from socialism to a market economy. Economic conditions are important for marriage to the degree with which bride wealth and independent household formation is necessary in both countries, the 'transactional marriage' phenomenon whereby economic scarcity contributes to an earlier marriage rate among some portion of young women, particularly orphans; and the overall difficulty of affording children in a devastated and uncertain economic climate.

The third set of causes I explore is *'sex composition and gender role factors'*, including the low postwar sex ratio in Rwanda that may have prompted an increase in marriages immediately after genocide, while the lack of inheritance rights for widows there increased the necessity of remarriage and childbirth. Changing employment leave policies in post-Socialist Bosnia reduced women's ability to combine work and family. Fourth, what I term *'psychosocial factors'*: the ways in which acute wartime trauma seemed to cause some men and women to withdraw from the marriage market; the relative success of recovery efforts—and, in particular the continuing lack of optimism about a shared future in Bosnia, which seems to have

depressed marriage and fertility rates there overall. In Rwanda, however, I argue that marriage rates were initially buoyed by a sense of post-war resolution and concrete efforts to rebuild the country. More recently, national campaigns to limit childbearing seem to have taken hold in many parts of the country, and fertility has been declining.

In Chapter 6, the conclusion, I review the strength of the evidence presented for and against various causal pathways between genocide, nuptiality, and fertility. I explore how the particular character of each genocide interacted with pre-existing conditions to help produce a distinct set of effects on reproductive and nuptial trends in each country. While all four sets of causal factors were important, the first two categories—involuntary factors and economic and material factors—seemed to dominate the relationship between genocide, nuptiality, and fertility. Contrary to my initial hypothesis, I found that the individualistic economic calculus of childbearing seemed to trump any kind of pronatalist 'ethnic nationalism' among survivors. Even women who expressed an ideological or personal desire to have a lot of children after the genocide generally reported feeling that they could not possibly afford more. Even so, marital and birth outcomes varied substantially by country, age, psychosocial effects of genocide, and other factors. The causal framework that I have developed for this dissertation, while far from complete, is a useful approach to unraveling the complex relationship between macro-level crisis phenomena and micro-level demographic decision-making.

Chapter 2: Background

2.1 Rwanda

2.1.1 Brief Social and Political History of Rwanda

Rwanda is a small landlocked country in the Great Lakes region of Central Africa (Figure 2.1), approximately the same size as Haiti. It was originally a highly-organized clan-based kingdom before being colonized by Germany in the late 19th century and then by Belgium from World War II until 1962, when it declared independence.

Figure 2.1: Map of Rwanda in Africa

Map created using DIVA-GIS (Hijmans et al. 2005).

Like many other African colonial powers, Belgium relied on a system of "indirect rule" to maintain its power in Rwanda without establishing a large colonial presence and without

having to build much infrastructure. Belgian colonialism, in cooperation with the Catholic Church, codified what were originally informal ethnic classifications based on cattle ownership and perceived physical differences. Tutsi owned cattle and were generally lighter-skinned, taller, with thinner noses, and more angular (European) features than their Hutu counterparts.[5] The categorization of Hutus and Tutsis was always more of a class-based distinction than an ethnic one (Isabirye and Mahmoudi 2000; Kanyamachumbi 1995; Pottier 2002; Uvin 1998). Belgian colonists originally classified households who owned 10 heads of cattle or more as Tutsi, and others as Hutu (Niazi 2002). It was thus possible to achieve interethnic mobility. Hutus and Tutsis share the same language (*Kinyarwanda*) and religious makeup (largely a mixture of Catholic and Protestant).

From 1926 to 1932, Belgian rulers enforced these ethnic differences as legal racial classifications, culminating in identity cards issued to every citizen, including their ethnic identity (Organisation de L'Unité Africaine 2000), and favored Tutsis in education, employment, and other spheres. Belgian colonialists appointed Tutsis to be the class of local rulers to collect taxes and resources. Tutsis were the only group allowed to pursue higher education and to hold positions in the civil service (Des Forges 1999). Tutsis were a fairly small minority (around 15% in the late 1950s), while Hutu formed the vast majority of the population (around 84%). The Belgian system of divide and rule was effective at securing taxes, resources, and free labor from the majority Hutu populace.

Tensions inevitably developed between the favored minority Tutsis and the majority Hutus. When Tutsis began to organize to demand independence in the mid-1950s, Belgium and the Catholic Church allied with the Hutus. One version of history asserts that during the struggle for independence Belgium began inciting a Hutu uprising; another version of history is that the Hutu uprising was a democratic outgrowth of decades of oppression (Newbury 1988; Prunier 1997). Both explanations are likely true. Belgians allowed and encouraged pre-existing ethnic tensions to destabilize the country. This divide-and-rule strategy proved quite successful. As a demographic and democratic majority, the Hutus quickly seized power from Tutsis and began a murderous campaign of revenge. For this reason many historians consider the pre-independence violence of 1959 and 1960 to be the *first* Rwandan genocide, when hundreds of thousands of Tutsis were killed or fled into exile.

Scholars often cite two key contextual factors contributing to the eruption of murderous violence in Rwanda during the early 1990s. The first explanation is demographic; the second economic. Some scholars have argued that population pressure and resource scarcity contributed to the Rwandan genocide. In 1990, Rwanda had the highest population density in

[5] A third group, the Twa, were forest-dwellers who hunted and gathered. They formed less than one percent of the population prior to the genocide. Very little is written about them, particularly in relationship to the genocide, and they are omitted from this discussion.

continental Africa, at 270 persons per square kilometer (United Nations 2011). This is still true today. The population is heavily dependent on agriculture, and nearly all of the arable land is currently in use (Verwimp 2005). Much in the same way that Hitler used *Lebensraum* to justify the occupation of neighboring nations, Rwandan land shortages and the lack of carrying capacity were invoked as a reason to refuse the return of hundreds of thousands of exiled Tutsis (Newbury 1995) and later as a rationale to exterminate Tutsis. Hutu hardliners resisted the possibility of 1959-1962 Tutsi refugees returning to the country, saying that there was no room for them (Justino and Verwimp 2006).

The influx of refugees and the internal displacement that was the result of armed conflict between the Rwandan government forces and the RPF reduced the availability of food and other resources. One scholar posits that the building pressure on the population in 1994 was historically unique and mathematically consistent with a Malthusian dis-equilibrium theory of genocide (Yanagizawa 2006). While it is impossible for an equation to capture all of the different social, political, and institutional circumstances that gave rise to the 1994 genocide, there were indeed unique population pressures that may have laid the groundwork for genocide, as others have argued (Diamond 2005).

The second factor which likely contributed to the genocide was economic collapse in the early 1990s. The coffee crop, which had been mandated under colonial rule, was initially a source of economic revenue for those in power. In Rwanda from 1973-1994, coffee exports accounted for 60-80% of state revenue (Kamola 2007). Rwanda encouraged and subsidized coffee farming and growers were mandated to sell their coffee to the state at a fixed price. The state in turn exported the coffee for enormous profits, a system which helped enrich Hutu elites and solidify President Juvénal Habyarimana's grip on power (Verwimp 2003). Coffee profits suffered greatly when the international price of coffee fell in the late 1980s. Farmers began to illegally destroy their plants in order to grow bananas, which they could harvest year round. A drought in 1989 only worsened the already meager food supply. The government tended to view the famine as beyond its control, citing the small size of individual plots of land in one province deeply affected by famine (Newbury and Newbury 2000). Peasants, however, tended to believe that entrenched poverty caused by government policy was a major contributor to the famine.

The World Bank approached Rwanda in the 1980s with a structural adjustment program designed to liberalize the economy. They billed this program as the only way Rwanda would be able to survive the global coffee surplus. As part of this 'shock therapy,' Rwanda's currency was devalued by 50% in 1990 in order to boost coffee exports, causing the Rwandan Consumer Price Index (CPI) to jump from 1 percent to 19 percent in the span of just two years while at the same time fees for public services like education and healthcare were increased (Chossudovsky 1996b). The government mostly squandered the aid on military weapons to defend itself against the RPF invasion rather than making investments to pay back the loans. Class divisions grew increasingly volatile, and with limited land young peasant men were

unable to establish the requisite homestead needed to marry (Newbury 1995). These economic and demographic factors heightened internal tensions in the build-up to genocide.

2.1.2 Dynamics of Genocide in Rwanda

The instrumentalist view of ethnic conflict maintains that ethnic hatreds are generally not the cause of war; instead, ethnic divisions are manipulated by powerful elites during moments of crisis as a political tool to control government and resources (Leonard and Straus 2003). There is substantial evidence to support the instrumentalist view of ethnic conflict in Rwanda. Ethnic divisions had salience because they were an integral part of the historical distribution of power and resources in Rwanda. These divisions were not (as some now claim) simply invented by colonialists. There is evidence to suggest that Tutsis largely descended from North African cattle herders, while Hutus were farmers of Bantu origin (Mamdani 2001; Niazi 2002). However, the two groups were largely in peace prior to the arrival of Belgians. The violent rift between Hutus and Tutsis during the lead-up to independence would ultimately explode in genocide more than thirty years later.

Nearly all of the Tutsis who fled Rwanda during the wars in 1959 and 1960 stayed in exile for over three decades, forming families, bearing children, but longing to return to their home country. Frustrated by limited opportunities in their adoptive countries, and refused the right of return under the Habyarimana government in power from 1973 to 1994, tensions among the exiled population mounted (Reed 1995). The second generation of Tutsi exiles—many of whom trained with the Ugandan army—eventually organized to form the Rwandan Patriotic Front [RPF], the armed wing of the Rwandan Patriotic Army. RPF was critical to the 1994 genocide in two respects: their early incursions on Northern Rwanda in the early 1990s and later in 1993 gave hardline Hutu extremists a perceived justification necessary to devise the genocide as their ultimate solution to the 'Tutsi problem'; the RPF was also the group responsible for bringing the genocide to a halt in July of 1994. Its leader, Paul Kagame, is President of Rwanda today.

Toward the late 1980s there was significant pressure on Habyarimana to accept the Rwandan refugees, but political progress was slow. In late 1990, as it became increasingly clear that the Rwandan regime had little intention of allowing refugees to return, several thousand RPF soldiers launched the first cross-border attack on Rwanda from Uganda. In 1992 the Habyarimana regime reluctantly agreed to a cease-fire with the RPF and to a transitional power-sharing government, but the Rwandan government tended to retract these agreements afterward. Habyarimana himself repudiated the agreement in 1992 (Des Forges 1999). However the first group to break the cease-fire was the RPF, who said it was in retaliation for reprisal massacres of Tutsis. The following year, under intense international pressure—and a threat to cut off foreign aid—Habyarimana and the rebel RPF signed the Arusha Accords in 1993 (Organisation de L'Unité Africaine 2000). The accords were never fully implemented. Both sides were accused of violating these accords

The attacks by RPF confirmed hardline ethnic conspiracy theories among the Hutu elite. After armed incursions by the RPF, the internal political dynamics within Rwanda became increasingly polarized. The following narrative comports with Rwandan history and offers a more personal perspective on how the situation started to change in 1990 for some Rwandan communities.[6]

> I would say the war started in 1990. The Tutsi started being harassed. By then no student was allowed to study in any schools if he or she was Tutsi, only Hutu children were allowed to study. In 1991 we started hearing rumors that the cockroaches [Tutsis] had started invading Rwanda so they [the Hutus] had started making a list of all the Tutsi population in the country. Because we [Tutsi] were not allowed to continue with our studies some of the boys preferred to go to Uganda to join the rebel army. A few tried to join the military in Rwanda but they were denied the entry because they were Tutsi so they decided join the RPF in Uganda. The *Interahamwe*[7] became very bitter because they discovered that some of the Tutsi boys had escaped to Uganda to join the rebel army. They said they were going to hunt for their families and kill them all.
>
> In 1990, everything got bad. People started to say that Tutsis were not welcome. The threats went on and then in 1992 Hutus started killing their Tutsi neighbors here in Nyamata [rural community outside of Kigali] in places called Museye and Ntarama. Hutus started slaughtering their neighbors with *pangas* (machetes) and sometimes the chaos would stop but if any Tutsi injured person was taken to the hospital he or she would not be treated.
>
> Everyone knows everyone, so if your family has one child missing, they assume that he has gone to Uganda to join the RPF. So they started to say that there is a list of people who have sent their children to Uganda, and they were going to start killing all of us. At that time my own brother had gone to Uganda. I was on the list. We started to gather in areas where we could find some security, everywhere here, we gathered in schools and churches.

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[6] All personal accounts in this paper were relayed to me in English through a native Bosnian or Kinyarwanda-speaking interpreter. Excerpts of the recordings were audited for accuracy by a second interpreter. I transcribed selected interviews and analyzed them in Atlas.TI version 5.2. Quotes have been slightly edited for grammar and, in some cases, passages have been put in chronological order and extraneous material has been removed.

[7] A Kinyarwanda word meaning 'those who stand together' or 'those who attack together.' The *Interahamwe* was a paramilitary group of young men who supported the Hutu power structure and committed acts of genocide. The group reconstituted itself in the D.R. Congo and surrounding forests after the Rwandan genocide.

> All these refugees were starved. They shut off all the water taps and destroyed all the electric poles, and people were dying of thirst. A meeting was held and they lied to us that no one else was going to die and that we should go back to our houses because it was going to be safe. We later on went to our homes and found some of our property stolen but we were patient. We could not sleep for some time because we feared they were going to kill us. After some time it was a bit calm then it started again in 1994. We spent the many years in this bad life up until the 1994 war.
>
> 45-year old Tutsi woman who lives in Nyamata

On a demographic level, there were relatively few casualties incurred during fighting from 1990 to 1993, but the war did create a large number of internally displaced persons in some local communities. However ethnic tensions began to escalate throughout the country, with Hutus labeling all Tutsis as the enemy. We now know that Hutu militants began creating lists of Tutsis and stockpiling weapons for a large-scale massacre.

When President Habyarimana's plane was shot down on the night of April 6, 1994 by a SAM-16 surface-to-air missile (Prunier 1997), armed Hutu elites quickly began a genocidal campaign to execute Tutsis and moderate Hutus. The campaign was primarily directed by members of three groups: the Presidential Guard, the youth of Habyarimana's party, known as *Interahamwe* (a Kinyarwanda word meaning 'those who fight/work together') were/are a Hutu civilian paramilitary death squad supported by the Habyarimana government, and members of the *Forces Armées Rwandaises* (FAR). These militants efficiently capitalized on fears that the RPF was about to wage an all-out attack on Rwanda. They used the national radio to read lists of Tutsi names and mobilized existing night patrols[8] to preemptively kill all "Tutsi enemies." The high degree of political centralization in Rwanda ensured that a large number of Hutu men were conscripted into the ranks of *génocidaires*[9] by local Burgomasters and armed groups, sometimes under threat of death. Political elites and oppositional groups were quickly executed, and afterward these militant groups began to target all Tutsis. The ethnic dynamics were made more complex due to intermarriage between Hutus and Tutsis. One respondent, a Tutsi survivor of rape, described the start of the genocide this way:

> I went to my brother's wedding. It was on Tuesday [April 6th, 1994] when I went to my brother's house for the wedding ceremonies. I spent the night on Tuesday there. The war started in the evening on Wednesday. This is how my husband and I were separated. I was in Kanombe Commune, near

[8] The government had essentially conscripted groups of (mostly Hutu) men in each community to take turns instituting a night patrol after RPF began launching attacks into Rwanda in 1990.

[9] In the absence of information about a particular group (Interahamwe, Presidential Guard, FAR, etc), I follow the custom that génocidaires refers to all of those who committed genocide.

the airport, for the wedding. My husband stayed in Kimisagara. It was not possible for both of us to go to the wedding. One of us had to stay at home with the children. That was the night that the plane of the President [Habyarimana] was shot down. In the evening, soldiers started moving around, and the following day which was on a Wednesday announcements were made on the radio saying that everyone had to stay in their homes.

At that moment the soldiers [the Presidential Guard] were deployed everywhere, starting to kill people, from house to house, identifying where the Tutsis were, killing them in their houses. This was the beginning of the killings. At that moment they asked residents to declare which guests they had in their houses.

They said that no one should allow visitors in their homes; they continued saying things like if there were visitors in peoples' houses they should be declared. There were a lot of scary announcements like that until we started hearing the Presidential Guards killing people nearby. At the moment I did not know who was and was not an Interahamwe so I kept thinking to myself after all they do not even know me I will not be a suspect, they kept shooting in all Tutsi homes.

In the morning on Saturday I asked my brother if it was possible for me to go back home and he said it was not going to be possible for me to go back home but instead he could take me to the Gatenga church which he said was a bit safe.

Did your brother go also or was it just you?

My own brother became Interahamwe, and then he asked me to go to Gatenga church, to join a group of 40 refugees who went to hide themselves there.

How did your brother become Interahamwe?

My brother is not actually my full brother; we have the same mother, not the same father. We are from different fathers. The father of my brother was Hutu, and then my brother was Hutu. My father was Tutsi.

Given the overt ethnic dynamics of conflict, it is perhaps understandable why journalists initially characterized the genocide as an outgrowth of tribalism and "ancient tribal hatreds" between Hutus and Tutsis (Des Forges 1999; Isabirye and Mahmoudi 2000). The contemporary scholarly consensus, however, is that the ethnic hatred hypothesis is false (Des Forges 1999; Prunier 1997; Straus 2006; Verwimp 2005). Even though political elites may have used ethnicity to organize and justify the genocide (*"all Tutsis are cockroaches"*), there is little evidence of pre-colonial hatreds between the two groups. Hutus and Tutsis have intermarried[10]

[10] Data from the 1992 Rwandan Demographic and Health Survey indicate that 3% of Hutu women had Tutsi husbands [Tutsis made up around 10% of the national population at that time]. The data appear to show that over

for decades. Most communities were integrated, and there are few reports of spontaneous violence between the two groups prior to the genocide. A randomized survey of confessed Hutu génocidaires found that nearly all (98.9%) would have allowed their children (or themselves) to marry a Tutsi prior to 1994, and the vast majority characterized their pre-genocide relationship with Tutsi neighbors positively (Straus 2006).[11] In fact, the two groups are so difficult to distinguish that génocidaires often had to examine prospective victims' national identity cards to determine their ethnicity prior to killing them (Lie 2004).

By the time the Rwandan genocide ended in July of that year, at least half of a million Tutsis and moderate Hutus were dead. While the genocide ended in 1994,[12] many perpetrators of the genocide (*Interahamwe*) have remained in Eastern Congo and nearby Ugandan forests and carried out systematic attacks on the population in Western Rwanda in 1997 and 1998, displacing over half a million persons.

2.2 Bosnia

2.2.1 Brief Social and Political History of Bosnia

Bosnia is a Southeastern European country (Figure 2.2) approximately twice the area of Rwanda, but with about half the population. It is located between former Yugoslav republics: Serbia and Montenegro to the East and Croatia to the North, South, and West. The unique prewar ethnic composition of Bosnia (Muslims ['Bosniaks'] 41%, Serbs 31%, Croats 17%) is the byproduct of a complex and dramatic history involving four centuries of Ottoman rule, two-and-a-half decades of Austro-Hungarian rule before World War I, and nearly five decades as a Communist Yugoslav republic.

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half of married Tutsi women had Hutu husbands, but the sample size of Tutsi women who identified an ethnicity for their husband [n=46] is too small to generalize.

[11] From Straus (2006: 128-9) based on 200 interviews with confessed génocidaires. Unmarried men were asked if they themselves would have married a Tutsi, while married men and fathers were asked whether they would have allowed their children to marry a Tutsi (both prior to 1994). Nearly all respondents (96%) report having had a Tutsi neighbor before 1994 and 87% of those said their relationship with their Tutsi neighbor(s) was "positive."

[12] Rwandan Natural Law 8/96 states that genocide victims are "all persons which have been killed in the period between October 1 1990 and December 31 1994 because they are Tutsi or can be associated by lineage with a Tutsi, or are friends with a Tutsi or have a particular affinity with one, or they exhibit political thoughts and/or belong to a political party contrary to the ideology of the divisionist politics before 1994." (Rwandan Ministry for Local Government [MINALOC] 2002).

Figure 2.2 Map of Bosnia in Europe

Map created using DIVA-GIS (Hijmans et al. 2005)

There has long been a religious duality in Bosnia, in part due to its central geography. Even in the early Middle Ages, Bosnia was caught between Rome and Byzantium. In the 16th Century, Bosnia became a province of the Ottoman Empire. During the period of Ottoman rule much of the local population converted to Islam, and—like Tutsis in Rwanda under Belgian rule—often received preferential schooling, jobs, and more political power (Lovrenović 2001). The Turks tolerated Christianity, including the Serbian Orthodox Church, but tended to treat Christians as second-class citizens.

The historical conversion to Islam among some Bosnians means that modern-day distinctions between Bosniaks (Muslims), Serbs, and Croats tend to be based on ancestral religious affiliation rather than racial phenotypes. Muslims are ethnic Slavs who converted to Islam and embraced Turkish customs during Ottoman rule (Sekulic, Massey and Hodson 1994). Modern-day Bosnians tend to maintain their religious affiliation (Croats are Catholic, Serbs are Orthodox, and Bosniaks are Muslim) even if they do not practice their religion. Two of the ethnic groups within Bosnia (Serbs and Croats) have demonyms similar to national groups; I follow the convention that the shortened name (Bosniak, Serb, Croat) refers to an ethnic group within Bosnia, while the suffix '-ians' denotes national demonyms (Serbian, Croatian, and Bosnian nationals).

Ottoman rule continued in Bosnia for four centuries. After the fall of the Ottoman Empire, Bosnia (and Yugoslavia) was ruled by the Austro-Hungarian Empire for four decades. Yet there were distinct nationalist tensions, particularly among Serbians and ethnic Serbs living elsewhere in Yugoslavia who wanted independence. Austro-Hungarian Archduke Franz

Ferdinand was sent to Sarajevo in 1914 to quell these tensions. The execution of Ferdinand there by Gravrilo Princip, a Serbian nationalist, and his fellow members of a secret military squad sparked the beginning of World War I (Williamson 1988). Many historians claim that the assassination of Ferdinand was the cause of World War I; however given increasing rivalry and belligerence between European powers leading up to 1914, it is unclear whether the murder actually sparked World War I, or whether it simply created a pretext for the war (Dedijer 1964). Nonetheless, Austria-Hungary declared war on Serbia in 1914. By the end of the war in 1918 Austria-Hungary ceased to exist. After World War I, the future Yugoslavia was unified into the "Kingdom of Serbs, Croats, and Slovenes."

Immediately prior to World War I a census found that more than 90% of landowners in Bosnia were Muslims (Dyker 1972). Living conditions in Bosnia remained terrible for the majority of the population. Serfs could theoretically buy their freedom but at a price far out of their reach (Lovrenović 2001). After 1918, under a policy of agrarian reform, much of the farmland was redistributed by the government.

Yugoslavia tried to remain neutral during World War II, but was pressured to join the war by Axis powers. Ultimately it was occupied by Germany and became part of the Axis. The leader of Croatia, Ante Pavelić, declared himself the head (*Poglavnik*, a title akin to *Führer*) of an Independent Croatia. The Minister of Education publicly declared that Pavelić's solution to the 'Serbian question' was to deport one-third of the nearly 2 million Serbs, convert one-third to Catholicism, and execute the remaining third (Lovrenović 2001; Nation 2001). The fascist Croatian Army for independence, Ustaša[13], cooperated with the Nazi regime and targeted Jews, Gypsies, Serbs, and political resisters for extermination. The Serbian army, which became known as 'Chetniks,' grew out of militant resistance to this targeting.

Pieces of the future Yugoslavia, including Bosnia, were broken up and redistributed to other countries, such as Italy. Ultimately the present-day countries of Slovenia, Macedonia, Serbia, Montenegro, Croatia, and Bosnia seceded from the Axis with assistance of the Russian Army. Together they formed a communist country known as Yugoslavia. Josip Broz Tito was elected President of Yugoslavia in 1945 and he remained in power until 1980. Tito, who himself was born to bi-ethnic parents, stressed national unity while dividing the country into six republics (Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia, and Slovenia). Except for Bosnia, these republics were roughly designed to correspond to their respective ethnic groups. Tito is credited with having united the country despite ethnic and religious differences, choosing instead to emphasize *bratstvo i jedinstvo* ("brotherhood and unity") (Kaufman and Williams 2007). He achieved a sense of unity, however, by essentially outlawing religion and making party affiliation the primary stratum of distinction within the country.

[13] In at least half of the literature Ustaša is spelled phonetically as Ustasha .

2.2.2 Dynamics of Genocide and War in Bosnia

Slovenia and Croatia had always been more economically developed than other Yugoslav republics, particularly Bosnia and Macedonia. Upon Tito's death in 1980, economic and political disparities within Yugoslavia increased internal tensions. Yugoslavia was the first country in Europe to undergo the International Monetary Fund [IMF] program of macroeconomic restructuring and privatization (Bateman 2000). Initial stabilization packages from the IMF in the early 1980s failed to ease the pain of economic reform, and in 1988 the Prime Minister accepted the IMF's radical 'shock therapy' reform measures in exchange for a package of financial support. From 1988 to 1989 there was a massive hyperinflation crisis. The Consumer Price Index jumped by 2,700% in a single year (Chossudovsky 1996a) and unemployment jumped while at the same time the social safety net was dismantled.

National leaders in all of the republics—most notably, Slovenia and Croatia—sought to distance themselves from Yugoslavia's obligations to the IMF. From 1989 to 1991, economic conditions improved in every republic relative to Bosnia, which had among the lowest incomes of the republics in 1989 (Bićanić 1996). According to many analysts, the World Bank and IMF reforms combined with dwindling national incomes—not 'ancient ethnic hatreds'—were largely responsible for the dissolution of the Yugoslav Republic in 1992 (Pugh 2002; Rocha 1992; Zizmond 1992).

Croatia and Slovenia declared independence in 1991. The wars for independence of Slovenia and Croatia were relatively short-lived. In Bosnia, which had a large population of ethnic Serbs, the move toward independence was much more controversial. In 1992 the Yugoslav People's Army (JNA) issued "a menacing threat that any attempt to found independent republics would not be allowed to take place without frontier changes, on the principle that everywhere Serbs lived was part of Serbia." (Lovrenović 2001: 192). Serbian nationalists claimed ownership of large swaths of Bosnia due to their historical significance. When Bosnia held an independence referendum in 1992, ethnic Serbs within Bosnia boycotted the vote.

In defiance of threats from the JNA and ethnic Serb politicians, Bosnian voters approved the referendum of independence in March of 1992. Within days, Serbian forces, led by Slobodan Milošević, attacked Sarajevo. Bosnia was ethnically integrated prior to independence, but the cultural landscape began to shift dramatically as ethnic groups fled to areas their ethnic army controlled. Ethnic Serbs were expected to cooperate with these forces, while Croats and Bosniaks resisted.

Warfare was enormously asymmetric, as the Serbian army controlled an enormous array of heavy artillery. The Bosnian defense force was dissolved due to ethnic differences and reconstituted informally among Bosniaks and Croats. It tended to only have small weapons, and was limited from expanding its arsenal by an international arms embargo.

Unlike the face-to-face slaughter that often characterized the Rwandan genocide, the tactic of the Serb forces during the Bosnian genocide was to surround major cities with heavy artillery. The Serbian army fired on residents with grenades and mortar shells, cut off electricity and water, and halted (as much as possible) traffic and trade in and out of the cities. Sarajevo suffered the longest siege in modern history, lasting from April 1992 to December of 1995. Despite constant shelling and mortar fire and the lack of water, electricity, and food, many Muslim civilians were determined to stay put. The literature and my own interviews suggested that Sarajevans tried to go about their lives as normally as possible. During the siege, schools, health clinics, and hospitals were singled out as strategic targets, but several essential facilities—including the main hospital—continued to shift facilities throughout the war in order to provide as many services as possible.

The Bosnian war lasted twelve times as long as the Rwandan genocide. The war officially ended when the Dayton Accords were signed in December of 1995. The Dayton accords split Bosnia into two Republics: Republika Srpska (49%) and the Bosnian Federation (51%). Each republic has elected its own president, has its own flag and has its own internal governmental structure. While Bosnians speak the same language (Serbo-Croatian), Republika Srpska uses Cyrillic font while the Federation uses Latin characters with a unique set of accents. There is a unified power structure in place, but the two Republics essentially operate like neighboring states. Republika Srpska presides over many formerly Muslim-majority areas such as Srebrenica.

While there has not been a census in Bosnia since 1991, it is fairly clear that most ethnic Serbs now live in Republika Srpska, and most Bosniaks and ethnic Croats now live in the Federation. In general terms, the policies of mass exodus, forced displacement, and imposed borders have successfully separated much of the population (cf. Stefansson 2006). As late as 1999 one-fifth of the pre-war population were still displaced. Hundreds of thousands of homes had been destroyed. While improvements have been made over the intervening period, high rates of unemployment and political tensions have continued to the present day.

2.3 Initial Demographic Effects of War and Genocide in Bosnia and Rwanda

2.3.1 Deaths and Widowhood

Casualty estimates from war and genocide are frequently debated, but the weight of the evidence suggests that there were approximately 104,000 wartime deaths in Bosnia[14] as

[14] The Bosnian total of 104,000 deaths was arrived at based on multiplying the comprehensive estimate of 97,207 direct wartime deaths from the Research and Documentation Centre in Sarajevo (2007) by the ratio of total death

compared to approximately 800,000 in Rwanda.[15] This amounts to 2.4% and 11.2% of the 1991 populations in Bosnia and Rwanda, respectively. Figure 2.3 shows the approximate sex and age composition of deaths (including military deaths) in relation to the original (1991) population of each country.[16] The area of the population pyramid shaded in grey indicates the estimated proportion of each original age and sex group that died from war-related causes from 1990 to 1994 in Rwanda and from 1992 to 1996 in Bosnia. Additional deaths among infants born during the genocide are not shown as these estimates are much more complex (i.e. it is difficult to distinguish an infant death from an infant non-birth).

In most cultures there is a prohibition against killing unarmed women and children even during wartime. Over the past 50 years more than four-fifths of all war casualties have been male, predominantly among men aged 15 to 44 (Obermeyer, Murray and Gakidou 2008). The Bosnian genocide followed this trend of majority male mortality, while deaths in the Rwandan genocide were almost evenly split between males and females (including children and the elderly). In Bosnia there was a general indifference toward all Muslim lives, particularly in the shelling of major cities, although targeted killings tended to explicitly focus on battle-aged men. For example in Srebrenica, the most famous episode of genocide during the war, battle-aged men were explicitly separated from women, children, and the elderly prior to being executed.[17] Women were not spared from violence altogether: torture and mass rape of women were fairly common, but directed violence at women tended to not be fatal. Killing Muslim men and raping Muslim women was seen by many Serb militants as sufficient to achieve their national goal of a greater Serbia (Stiglmayer 1994).

The dynamics of warfare were made complex in both countries by interethnic marriages. Bosnia and Rwanda follow the custom of patrilineal ethnicity, but for children born

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estimates to direct death estimates from Bošnjović (1999 as cited in Tabeau and Bijak 2005) and rounding to the nearest 1,000.

[15] Over the years estimates of genocide deaths in Rwanda have ranged from 500,000 (Des Forges 1999) to 1.36 million (Kapiteni 1996) but most experts now estimate the number of victims was probably around 800,000 (Prunier 1997; Verwimp 2004). A comprehensive study of deaths done by the Rwandan government found 1.074 million (Rwandan Ministry for Local Government [MINALOC] 2002) but few authors agree with this estimate, as the current Rwandan government is not an impartial arbiter in this matter. For the purposes of this paper, I settle on 800,000 direct and indirect casualties from 1990 to 1994, the age and sex structure of which is likely to mirror the age and sex structure of the "missing" population from the 1996 Rwandan household survey tabulations (Rwandaise Direction de la Statistique 2002) and 1991 census counts. These age and sex distributions comport quite well with computed probabilities of death by age and sex calculated through sibling mortality methods (De Walque and Verwimp 2009). However the decreased sex ratio among adults in the wake of the genocide may mean that the actual distribution of deaths was skewed toward males more than is represented here.

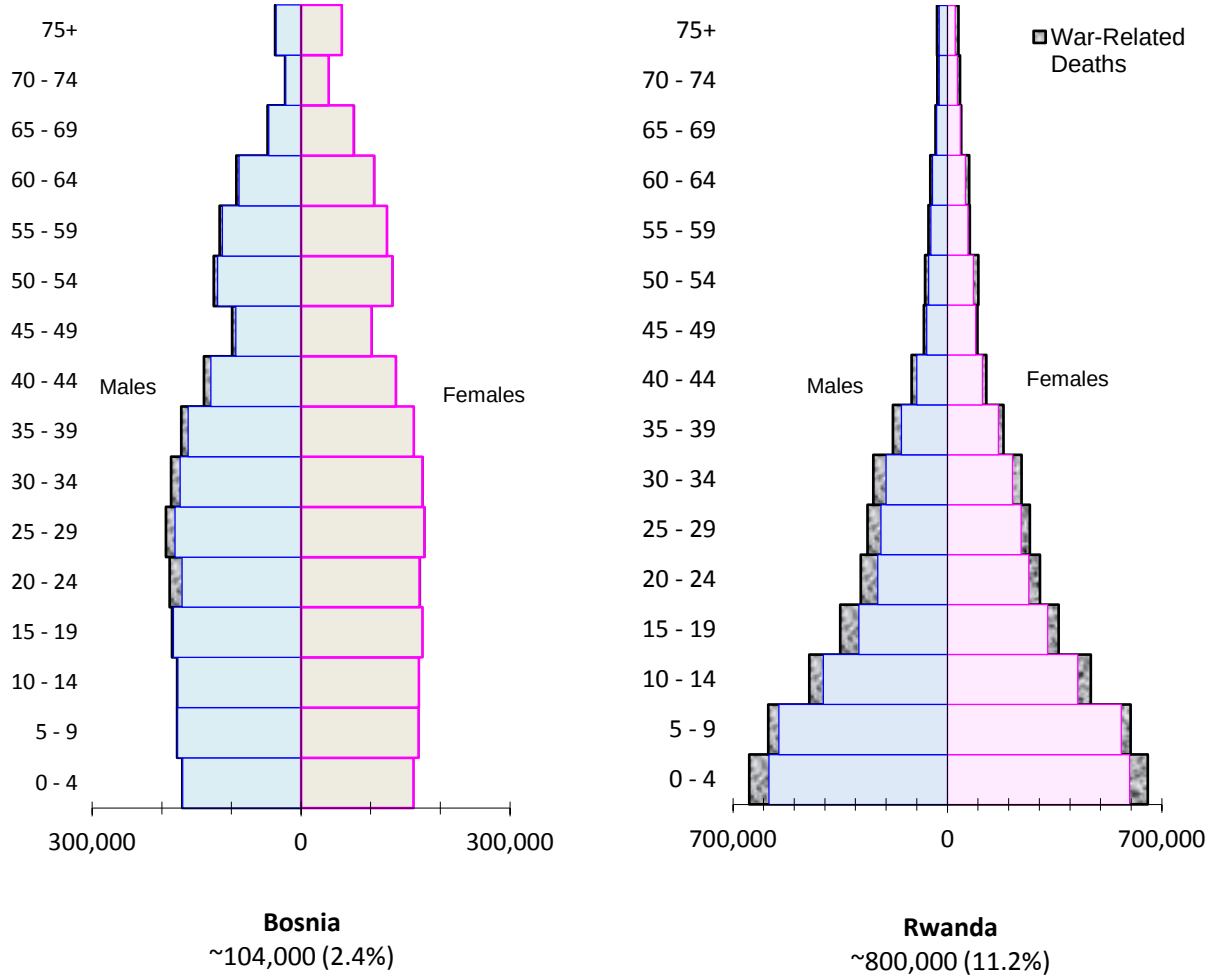
[16] According to Natural Law 8/96, the Rwandan genocide officially began in October 1990, prior to the 1991 census, but there were less than 10,000 casualties during this period.

[17] Based on survivor testimonies. A comprehensive assessment of nearly 7,500 identified victims found that 90% were men of military age, i.e. between the ages of 16 and 60 (Brunborg, Lyngstad and Urdal 2003).

to ethnically mixed parents the decision of whether to stay or to flee was difficult. One respondent described how her mother had to flee from the house because she was Tutsi, while her father, a Hutu, stayed at home and protected the children.

> *You lived in Gisegera in 1994 during the genocide. Did you have to leave and come back at all?*
> I was very scared during the war. We did not manage to get very far. We tried to flee some distance and then we decided to come back. We fled the insecurity. We decided to go back.
> *How long did you leave for?*
> We spent 6 days away from our house.
> *Did you leave with the whole family, or was it just with your mother?*
> I went together with my siblings, my mother, and with people who wanted to protect us.
> *How did you manage to stay safe after you returned?*
> Someone came and told us they were killing people, they told my Mom she was not safe there so she was taken to a place to be hidden. My father is Hutu and my Mother was Tutsi. So my Mom went into hiding and the rest of us who stayed hid under the bed. Later on my dad came back and told us we were safe with him. When a group of Interahamwe came to kill us they found us with my Dad, so they did not harm us. But after he left we kept hiding in bushes because we were not sure we were one hundred percent secure.
> Meanwhile, my mother was being hidden by another woman. After some time a bourgmeister [Mayor] came to talk to people saying that now there are no more killings.
> *Did your whole family survive the genocide?*
> Since my father was Hutu and my mother was Tutsi, all the people on my mother's side of the family were killed.

Figure 2.3: War-Related Deaths among the 1991 Population in Bosnia and Rwanda



Note: Grey shading indicates approximate direct and indirect war-related deaths from the 1991 population by original age group (best available estimates of direct and indirect mortality). In Bosnia many of the population losses are too small to be visible in the above-sized chart. 'Natural' (expected) deaths that occured during the period are not shown, nor is the cohort of children born after 1991. The x-axis scale of population size differs greatly between the two charts, as Bosnian population in 1991 was about sixty percent of Rwandan population (4.3 million vs 7.2 million). **Sources and Methods:** see text.

In Rwanda there has traditionally been a cultural taboo on the killing of women and children (Rwanda National Unity and Reconciliation Commission 2005), but during the course of the genocide women were killed nearly as often as men. Some reports indicate that génocidaires were explicitly instructed to leave no female survivors (Bhavnani 2006). Interviews with a stratified random sample of convicted génocidaires in Rwanda show that a plurality of respondents felt that the killing of women and children was acceptable because they had to eliminate all Tutsis, because women and children supported the enemy, or because survivors might reproduce (Straus 2006: 166). Pre-war propaganda likely also played a role in the killing of women and children. Four of the ten 'Hutu commandments' published prior to the genocide depicted Tutsi women as seductive traitors and forbade Hutu men from marrying or employing them.

How does the age and sex composition of mortality affect nuptiality and births? In a purely numeric sense, the death of reproductive-age women may affect birth *counts* but should not affect fertility *rates* except to the extent that there is survivor bias. Death of prime-age male partners, however, will almost certainly reduce average fertility in the long-term.[18] The age structure of deaths may also have implications for fertility if child mortality is high. Parents may try to replace lost children (Ben-Porath 1976) and the general risk of child loss may induce other parents to increase their overall fertility (Pörtner 2001).

2.3.2 Conscription

During wartime, the separation of men (battlefield) and women (home front) tends to decrease marriages and conceptions. In Bosnia it is estimated that 400,000 to 500,000 Bosnian men were conscripted during the war (Bougarel 2006). According to my respondents, conscription of able-bodied civilian men on all sides (Serbian, Croat, and Bosniak) was nearly universal. In almost every neighborhood there was enormous social pressure to join the local defense force. Given the duration of the war, this conscription may have had an important effect on reducing the availability of marital partners and reducing exposure to intercourse among married couples. Given that the war lasted for over three years, some men spent long periods of time away from their families (although a few respondents reported that their husband came home from combat nearly every night, like a 9-to-5 job).

In Rwanda, Hutus, who comprised 85% of the population in 1992,[19] were in charge of the military, the police, and organized 'neighborhood watch' groups. Conscription among Hutu men has been described as near universal; those who initially declined to participate were threatened with death and at times executed. The number of génocidaires is widely disputed

[18] Deaths of young unmarried men and boys, if disproportionately large, may also affect future fertility in monogamous societies by changing the dynamics of the marriage market.

[19] Verpoorten (2005) argues that Tutsis were undercounted in the 1991 census, often preferring to identify as Hutus to avoid persecution and in order to have access to benefits like secondary education.

and it is clear in retrospect that a fair number of participants were at the lowest echelons, conducting patrols and security and perhaps looting from the victims. But the aim of the genocide organizers was clearly to involve as many participants as possible in the crimes, both to create shared culpability and to increase their political and economic power.

Organizers of the genocide exploited the practice of *umaganda* (compulsory community volunteer work) by comparing Tutsis to weeds and to cockroaches and issuing instructions analogous to communal labor tasks, such as 'clear the brush' and 'exterminate the cockroaches' (Des Forges 1999). There was a very elaborate system of political propaganda and name registration that enabled organizers to generate support for their movement among the historically oppressed Hutu peasantry, and thereby systematically eliminate hundreds of thousands of Tutsis and moderate Hutus in less than a hundred days.

It is difficult to know how many Hutu men participated in the genocide, and in particular how many committed violent crimes such as rape, murder, and torture, versus the number who committed property crimes. Some sources have suggested the number of perpetrators was as high as three million men (Gourevitch 1998), a figure that would encompass nearly all of the estimated population of able-bodied Hutu men. Most scholarly estimates have suggested that there were hundreds of thousands of génocidaires (Des Forges 1999; Mamdani 2001), with varying estimates of the proportion of voluntary and involuntary participants. The most methodologically rigorous estimate concludes that there were between 175,000 and 210,000 perpetrators (Straus 2004).

After the genocide in Rwanda, over 120,000 Hutu men were imprisoned on suspicion of genocidal crimes (Rwanda National Unity and Reconciliation Commission 2005). These men often had to remain in prison for years while awaiting trial, and then some were sentenced to additional prison time. Imprisonment was particularly difficult for wives, because they became single parents for over a decade and were expected to remain chaste and be the primary breadwinner, with sometimes very little support from their in-laws. For the wives of these imprisoned men childbearing was impossible during the time that they were in jail, unless women were willing to accept a new partner.

2.3.3 Displacement

While death, conscription, and imprisonment reduce opportunities for marriage and childbirth, the effect of displacement on nuptiality and fertility is more ambiguous. In some cases displacement meant that a couple was separated and hence there were no opportunities for conception. In other cases, being in a refugee or displaced persons camp in close proximity to others increased the probability of meeting a spouse or of conceiving a new child. A significant proportion of the population was displaced during both genocides.

One of the unusual aspects of the Rwandan genocide is that the largest group of refugees were Hutus, i.e. members of the 'perpetrator group,' who often fled to the Congo fearing persecution and prosecution for their alleged crimes when it became clear that the RPF would

defeat the Rwandan [Hutu] army and the *Interahamwe*. To the anger of many, the French-led *Operation Turquoise* toward the end of the genocide essentially provided safe passage for hundreds of thousands of Hutus fleeing to Congo.

In general, both Hutus and Tutsis seemed to go to refugee camps as entire families, even under difficult circumstances (illness, pregnancy), but it is still difficult to know how this would have affected unwed couples from separate families. It was often easier for Hutus to stay together since the circumstances under which they fled the country were less panicked than for Tutsi couples. And Hutu women whose husbands or fathers were génocidaires frequently stayed at home during the genocide.

Many Tutsis and moderate Hutus who fled their homes sought refuge in churches and stadiums, where they believed they would be safe, but unfortunately this was rarely the case. A comprehensive study from the Prefecture of Kibuye finds that sectors[20] where more residents went to congregate in a football stadium had lower survival probabilities than sectors where fewer residents went to the stadium (Verwimp 2004). In some cases even trusted authorities like priests and pastors were complicit in the genocide. All of the Rwandan women I interviewed who had hid in a church or other communal shelter during the genocide survived because they escaped early. One respondent described how she and her family's lives were spared on different occasions during the genocide due to her husband's disability and to sheer luck:

> Among the 600 of us who were living in St. Paul cathedral during the genocide, the Interahamwe came and took about 120 men and killed them. They came and they chose the men who were young and strong. Among the people who were killed was my own brother-in-law. My husband was not chosen that day because he walks with crutches. So they spared us saying they were going to come back and kill us another day. ...There was another time when I was moving in the crowds with my husband and children. Because my husband is a cripple he uses crutches, and one crutch fell down and the person who handed back to him was immediately shot. If not for him then it would have been my husband who died so at that time we knew that everything was possible, but luckily our entire family survived.

Figure 2.4 shows the number of Rwandan refugees and internally-displaced persons [IDPs] over time. Due to the population of exiled Tutsis from 1959 mentioned in the Rwandan overview, the chart begins in 1960. As the chart makes clear, the population of refugees peaked

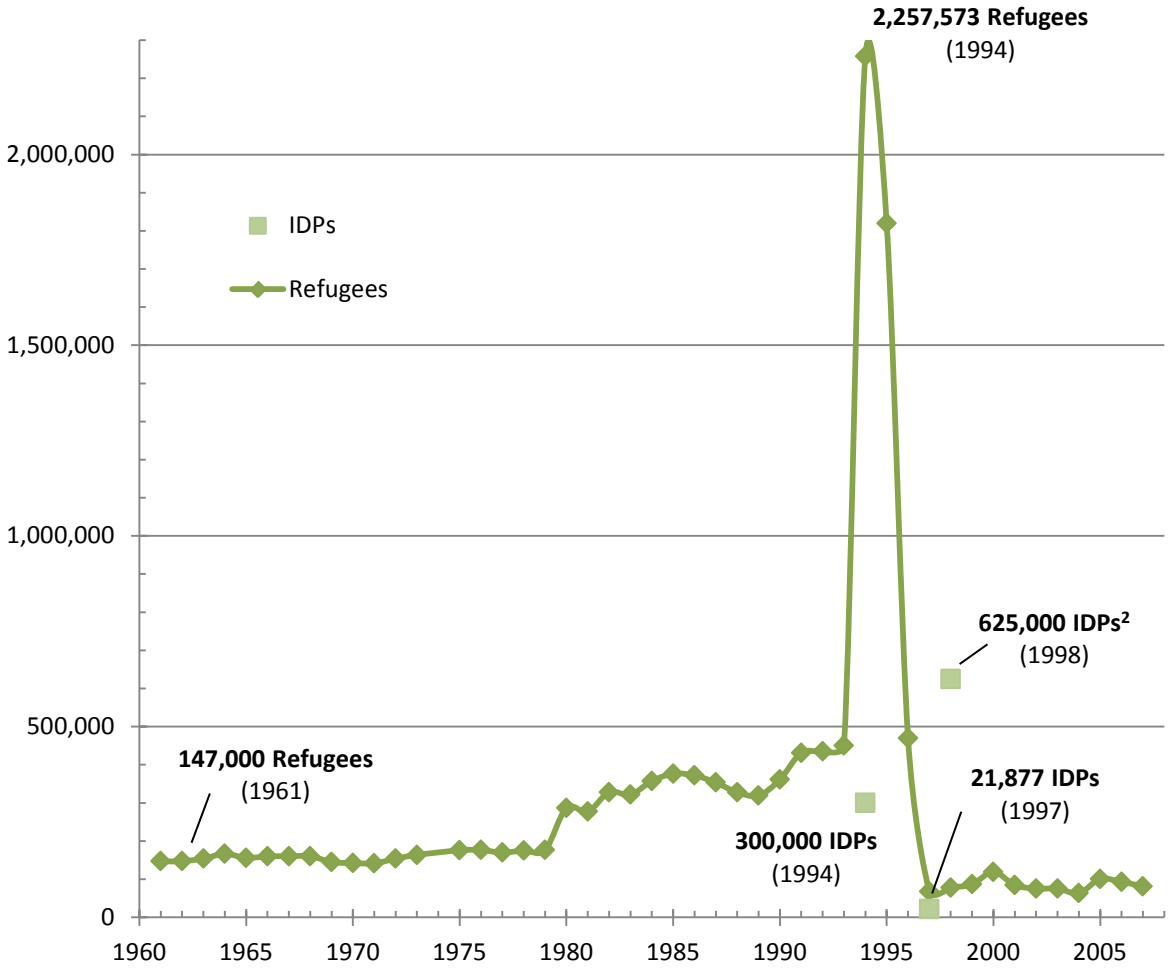
[20] A geographic unit below provinces and above umudugudus, referred to by its French term as *secteurs*.

dramatically in 1994, but most of these refugees were repatriated by 1996. However, as cross-border fighting between the Congo and Rwanda flared up in the late 1990s, the number of refugees and IDPs increased again.[21]

The relatively rapid repatriation of refugees in Rwanda occurred for a few reasons. First, many people died during cholera outbreaks in hastily-assembled refugee camps due to poor sanitation. Second, there was a stigma associated with possibly harboring génocidaires in the camps (Newbury 2005), and in some cases the camps were used as a recruiting ground for Hutu militants. Third, there were additional massacres of surviving Tutsi refugees and some revenge killing of Hutus in the camps (Women's Commission for Refugee Women and Children 1997).

[21] Note that IDPs are not shown as a contiguous line because during various years it was deemed 'unsafe' for UNHCR to collect data on IDPs.

Figure 2.4: Refugees and Internally Displaced Persons [IDPs], Rwanda, 1960-2006[1]



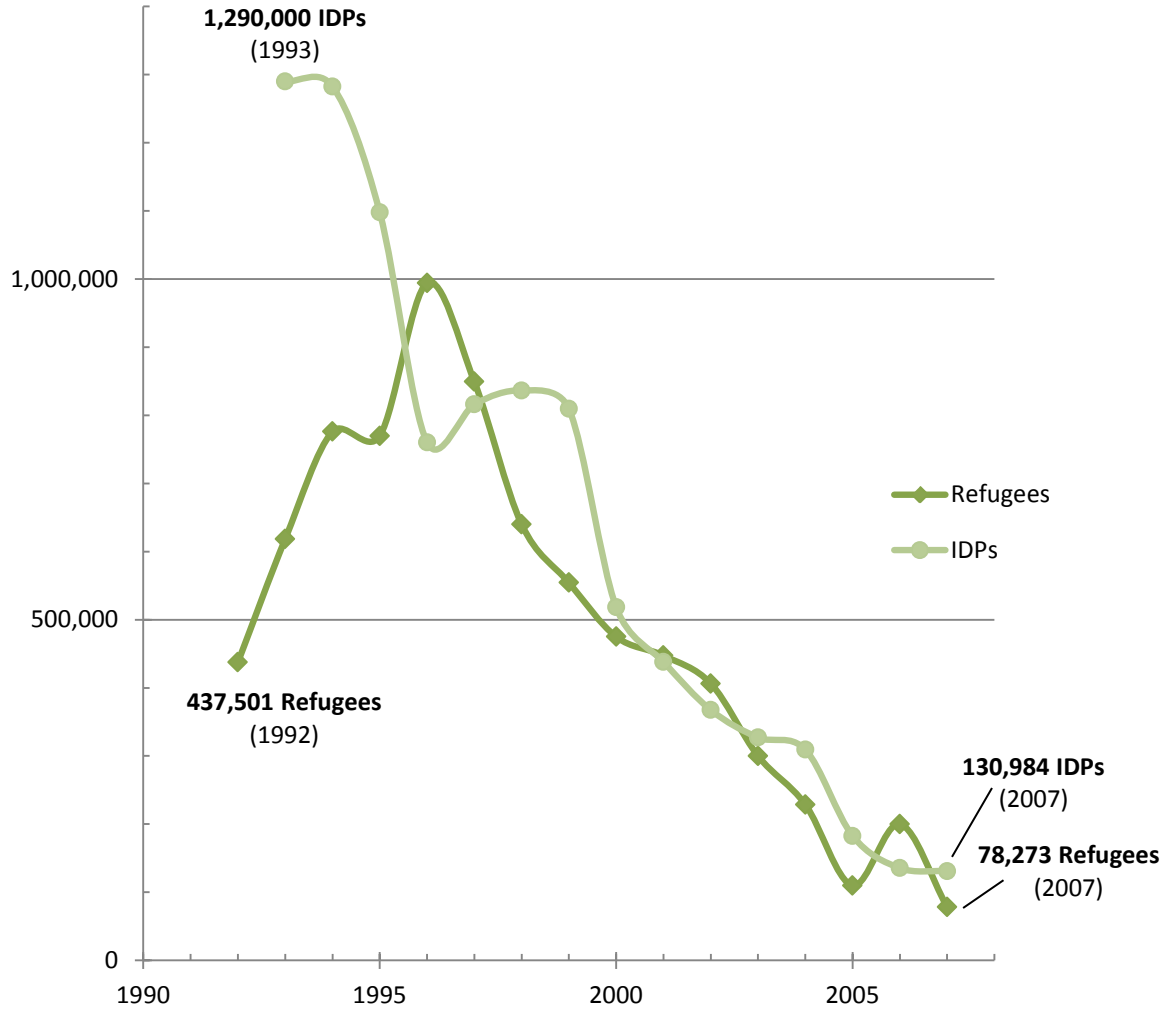
1. Refugees include those recognized in accordance with UNHCR statutes; individuals granted complementary forms of protection, those under 'temporary protecion,' and what UNHCR calls 'people in a refugee-like situation.' The latter category is defined as "descriptive in nature and includes groups of persons who are outside their country of origin and who face protection risks similar to those of refugees, but for whom refugee status has for practical or other reasons not been determined."
2. IDPs are defined as people who have fled their homes to avoid war and/or natural disaster, who have not crossed a national boundary, and who receive the protection of UNHCR. Unlike refugees who cross national boundaries, it is much harder to ascertain the number of IDPs, so the UNHCR acknowledges that an undercount is inevitable. Since UNHCR only had data on Rwandan IDPs for three nonconsecutive years (and 0 for all other years) the population counts are shown as points rather than as a line.

SOURCE: UNHCR Statistical Online Population Database (2009)

Refugee dynamics were quite different in Bosnia. Figure 2.5 shows the population of refugees and IDPs from 1990 to 2007. In part due to the tensions between former Yugoslav Republics and the perceived safety of staying within Bosnia, there were more IDPs than refugees at most points in the war. Many Muslims fled to United Nations 'safe areas' where peacekeeping troops were supposed to protect them. However these 'safe areas'—most infamously Srebrenica—often became targets of Serb militias, at times with the cooperation of UN peacekeeping troops. Another important feature of Bosnian displacement is that people frequently remained displaced for many years after fighting had finished, in part due to the destruction of hundreds of thousands of homes and the division of Bosnia into a Serb federation and a Bosnian-Croat federation.

For many Bosnians, internal displacement involved informally occupying empty houses in an area that was considered to be safe for a particular ethnic group. This was far different from the experience of collective housing or camps as in Rwanda. Figure 2.6 summarizes the comparative displacement experience as a proportion of national population in both countries over time. In Bosnia the proportion of persons displaced reached nearly 50% in 1994, and a decade later 10% of the population was still displaced. I conducted five interviews in Bosnia with women who are still living in IDP housing more than a decade after the war. Many of these women and their current neighbors are in a near-permanent limbo as their house was destroyed during the war but they do not have money to rebuild it. Earning an income in the isolated rural refugee housing is almost certainly impossible, and many have applied for a 'donation' from the government, but these are few and far-between. Moreover many survivors from Srebrenica do not want to return—not only because it is where their husbands, fathers, and sons were killed, but also because it is now part of Republika Srpska, under ethnic Serbian rule.

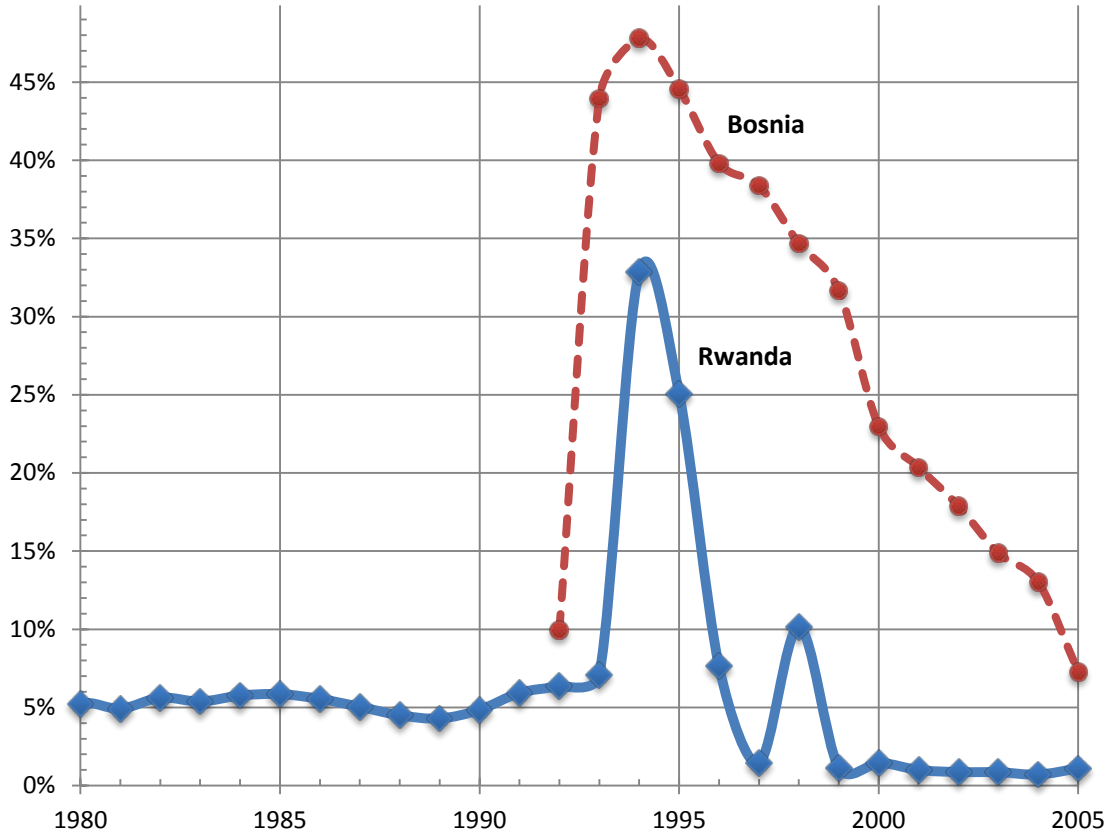
Figure 2.5: Refugees and Internally Displaced Persons [IDPs], Bosnia, 1992-2007[1]



1. Refugees include those recognized in accordance with UNHCR statutes; individuals granted complementary forms of protection, those under 'temporary protecion,' and what UNHCR calls 'people in a refugee-like situation.' The latter category is defined as "descriptive in nature and includes groups of persons who are outside their country of origin and who face protection risks similar to those of refugees, but for whom refugee status has for practical or other reasons not been determined."
IDPs are defined as people who have fled their homes to avoid war and/or natural disaster, who have not crossed a national boundary, and who receive the protection of UNHCR. Unlike refugees who cross national boundaries, it is much harder to ascertain the number of IDPs, so the UNHCR acknowledges that an undercount is inevitable.

SOURCE: UNHCR Statistical Online Population Database (2009)

Figure 2.6: Bosnian and Rwandan Refugees and IDPs as a Proportion of National Population, 1980-2005[1]



1. See prior charts for definition of refugees and IDPs. As nonresidents of their country of origin, refugees are automatically excluded from the resident population count. If the number of refugees were simply divided by resident population, it would overstate the proportion of refugees. To avoid this bias, refugees were included as part of the national population denominator as well.

SOURCES: UNHCR Statistical Online Population Database (2009) and UN World Population Prospects (2008)

It is difficult to obtain comprehensive statistics about whether couples were together as refugees, what their conditions were like, how long each couple stayed, and so forth. The caseload data from UNHCR also likely underestimates displacement because so much of it was 'informal' in both countries (e.g. staying in an empty home in Bosnia, hiding or living in the forest in Rwanda). Based on my sample of respondents, in both countries about two thirds of displaced married couples who survived the war stayed together during their displacement, and the remaining one third were separated.

Even if couples stay together as refugees, issues such as food insecurity, uncertainty about the future, and reduced privacy in close quarters may serve to reduce fertility. Even so, the proximity of persons displaced in refugee and IDP (internally-displaced person) camps may also serve to increase births and marriages during war. In long-term refugee camps, the health care and schooling provided may exceed their conditions at home.[22]

2.3.4 Mass Rape

When war is conceived of as "ethnic cleansing," as it was in Rwanda and Bosnia, attacking enemy women's ability to reproduce or forcibly impregnating them can be part of the strategy of war itself. Rape warfare was endemic in both Bosnia and Rwanda.[23] Violence against women was used as a proxy for violence against enemy men, as a form of torture, as a systematic means of forcing pregnancy, and as a way to intimidate the population or seek revenge.[24]

Reproduction is rarely studied in the context of genocide, but often explicitly features into genocidal ideology. The U.N. Convention on Genocide recognized "imposing measures intended to prevent births... with the intent to destroy, in whole or in part, a national, ethnical, racial or religious group" as part of the official definition (United Nations 1948).

In Rwanda the rebel Tutsi army leader, Paul Kagame, was a son of Tutsi exiles from the 1959 genocide. Hence the Hutu power structure believed that it was a mistake to have spared the lives of women and children in 1959. This time around it was imperative to kill all Tutsis. The first of the Hutu "Ten Commandments" issued in the run-up to genocide declared that all Tutsi women, even those married to Hutus, were enemies. (Mamdani 2001; Prunier 1997). Any Hutu who married or employed a Tutsi was an accomplice (Nowrojee 1996).

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[22] To point out the superior social services in some refugee camps, however, is not to imply that refugees live a better life: separated from their farmland, deprived of meaningful employment, and ostracized by local communities, refugees still face enormous struggles.

[23] See for example Allen (1996), Barstow (2000), Gottschall (2004), Nowrojee (1996), Reid-Cunningham (2008), and Stiglmayer (1994).

[24] Sexual violence was also committed against men, children, and the elderly, but this is not well-documented.

In Rwanda mass rape was common but the outright killing of women and children was also an explicit goal of ethnic cleansing (Bhavnani 2006; Straus 2006). To justify why unarmed Tutsi women and children must be murdered, génocidaires invoked the euphemism of "exterminating cockroaches." Paul Kagame, who was then the leader of the rebel movement RPF, and is now the current president, was born in exile to Tutsi parents who escaped the 1959 genocide. Hutu extremists used Kagame as a justification for killing children. Straus' study of Rwandan génocidaires (2006) documents that most felt killing of women and children was legitimate because women can go on to bear more enemy soldiers and "anyone can grow up to be the next Kagame." Tutsi women and children posed a threat because of their ability to reproduce.

In 1992 the Serbian Socialist Party published a document decrying the high birth rates among Muslim and Albanian women, and reprimanding Serbian women for not having enough children (Bassiouni and McCormick 1996). In Bosnia, attacking Muslim (and, to a lesser extent, Croat) women's ability to reproduce or forcibly impregnating them was a well-documented strategy of war itself. Serbian soldiers established so-called "rape camps" where women were raped as a form of torture preceding death or for the explicit purpose of impregnating them. Pregnant women report being held in the rape camps until it was too late for them to safely obtain an abortion (Salzman 1998; Snyder et al. 2006). The UN Commission on Human Rights later concluded that:

> Rape of women, including minors, has occurred on a large scale. While the team of experts has found victims among all ethnic groups involved in the conflict, the majority of rapes that they [the team of experts] have documented had been committed by Serb forces against Muslim women from Bosnia and Herzegovina. (U.N. Comission on Human Rights 1993)

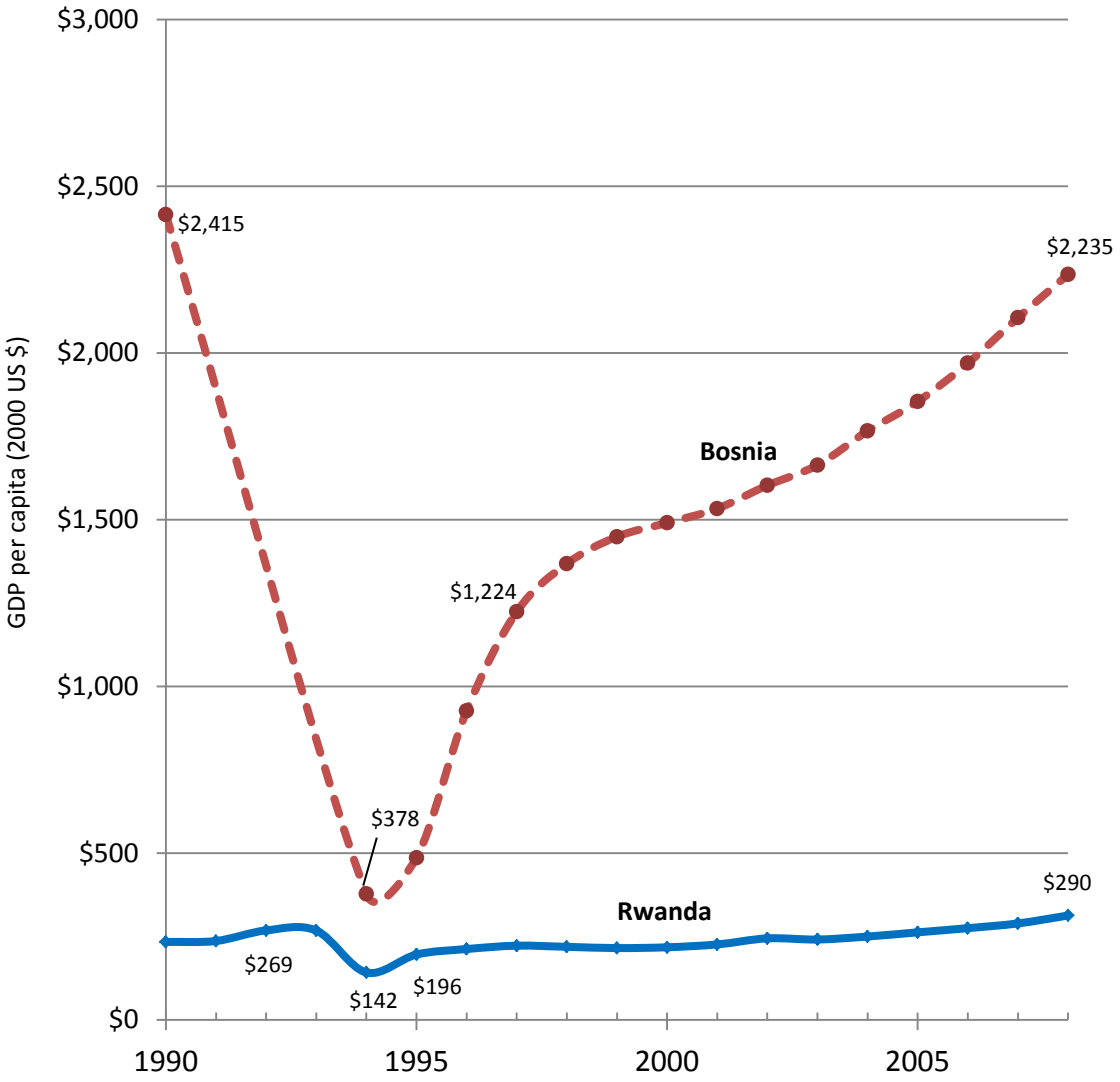
The prevalence and effects of genocidal rape are discussed in more detail in the fertility chapter (Chapter 5).

2.3.5 Economic Collapse

Figure 2.7 illustrates the change in GDP per capita in both countries from 1990 to 2005. Due to the lack of comparable pre-war data in Bosnia, pre-1990 data is not shown. As discussed in the previous chapter, however, GDP per capita declined in both countries throughout the 1980s. In Rwanda, average income per person shown in 1990 reflects an approximately USD$100 decline from its peak in 1983.

While official estimates of national income may be unreliable for a number of reasons (the most important being the development of an informal barter economy, theft and damage to infrastructure, and the massive increase in income inequality during war), they provide some useful comparison about the way in which both countries were economically affected by war.

Figure 2.7: GDP per capita in Bosnia and Rwanda, 1990 - 2008[1]



1. Major data sources on GDP per capita such as Penn World Tables, UN Population Prospects , and World Bank's World Development Indicators do not contain estimates for Bosnian or Yugoslav GDP prior to the onset of war (1992). The 1990 GDP per capita income estimate shown here is based on based on the World Bank's assessment that "by 1999 GDP per capita had recovered only to an estimated 60 percent of the pre-war level" (2004: 3).

Sources: World Bank (2004; 2009).

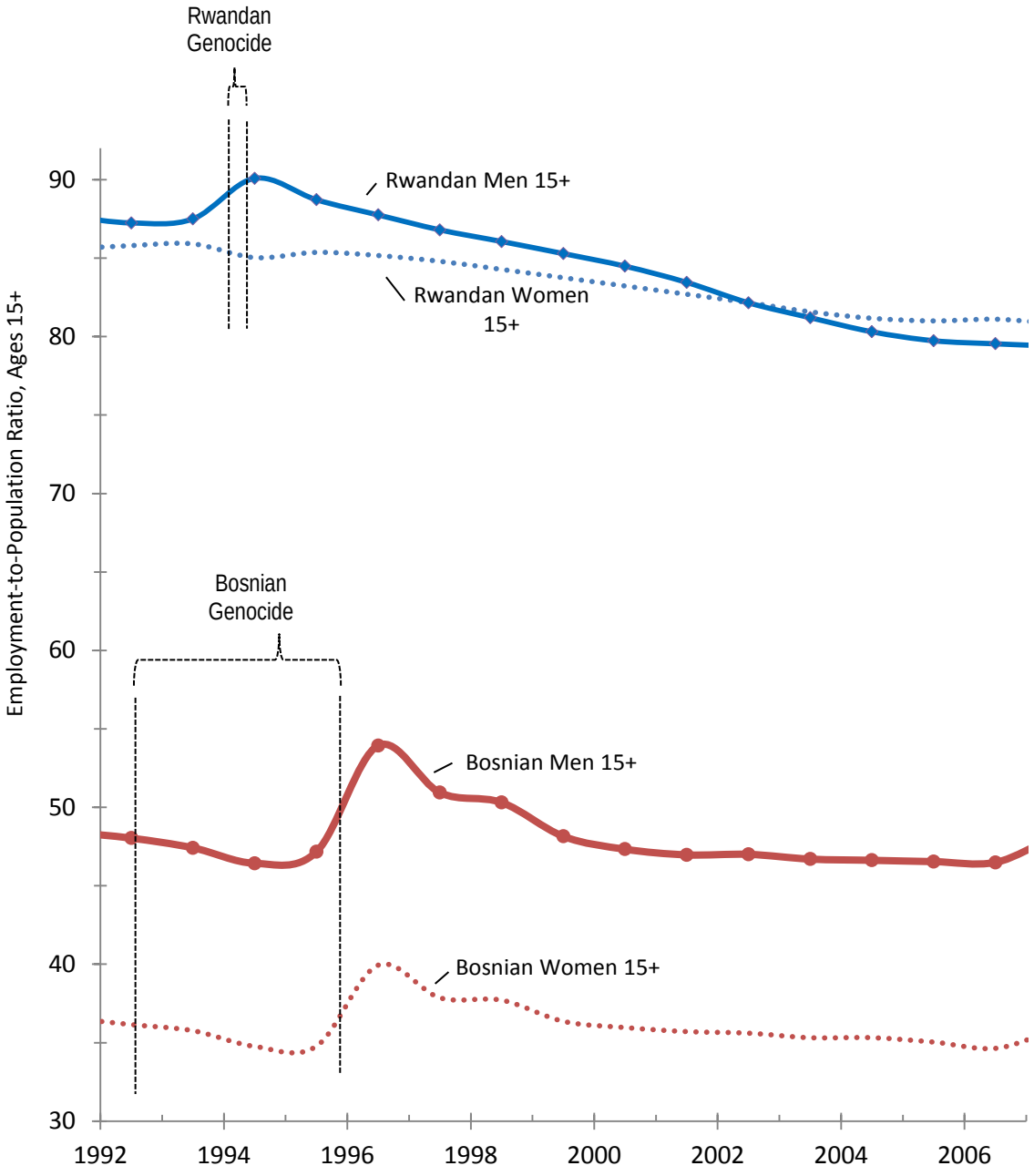
As is evident from Figure 2.7, Bosnia experienced a massive drop in income during the genocide and its accompanying transition to independence, and to date the economy has still not recovered to its pre-war level. Damages from the war were estimated in the range of US$50-$70 billion during the war (World Bank 1997). Rwanda also experienced a proportionately large decline in GDP; however its population was largely at subsistence level to begin with. For this reason, even a small decline in income, loss of property (livestock, housing) was acutely felt by the population. A drop in GDP by over 30 percent, as happened over the course of the decade prior to the genocide, combined with the loss of crops and cattle meant almost certain starvation for many.

GDP per capita is an important indicator, but it can also distort real differences in income distribution. For this reason I also include data on the proportion of the adult population that is employed in Figure 2.8. As that figure illustrates, labor force participation among Rwandans seems high, but this is because subsistence farming and other types of less-than-desirable employment are included. While it is relatively easy for able-bodied adults to find informal employment in Rwanda, it is difficult to find anything formal or anything that pays a living wage. In Bosnia, subsistence agriculture is much less common; however there exists a large 'shadow' economy (Nastav and Bojnec 2007) that the World Bank numbers may undercount.

One of the most striking features of Figure 2.8 is the extent to which the employment to population ratio among women appears to be perfectly parallel to that of men. While the exact methods for computing these rates and estimates of reliability were not released with these World Bank data, the fact that women's employment ratio seems to simply be a standard proportion of male employment ratios suggests a significant amount of imputation went into generating the dataset.

The World Bank's Living Standards Measurement Survey [LSMS] did ask extensively about formal and informal employment as well as any other income generating activities. According to my calculations from these data, two thirds of married men surveyed in 2002 were employed or owned their own businesses; an additional five percent held seasonal employment. Meanwhile fully 17% of married men surveyed were unemployed, and an additional 2% were unable to work.

Figure 2.8: Employment to Population Ratio, Bosnia and Rwanda, 1992 - 2007



Source: International Labor Organization (2009).

Chapter 3: Data and Methods

Any investigation of how one historical event affected demographic trends is limited by the absence of the counterfactual: what would have happened to nuptiality and fertility in Rwanda and Bosnia in the absence of genocide? We will never know, and unfortunately there are no good comparison countries with similar characteristics that did not experience civil war.[25] Establishing causality without a counterfactual is difficult. Moreover, war and genocide are generally accompanied by increased mortality, population displacement, family disruption, economic decline, a breakdown of healthcare systems and other basic infrastructure—in short, a number of factors which could in and of themselves be acting on fertility and nuptiality. It is difficult to pinpoint whether any of these coterminous factors affected demographic trends.

It is also important to acknowledge some of the data limitations that make this topic challenging to study. It is clearly difficult or even impossible to collect survey data on a population during wartime. Data is not the main priority. Even if it were, the safety and mobility of census-takers is clearly at risk, and the upheaval of population makes sampling and enumerating a very difficult task. Without nationally-representative longitudinal data from before and after the war it is difficult to piece together how initial circumstances and the experience of conflict produced distinct outcomes for various subgroups of women. In cases where there was massive in- and out-migration during the conflict, the populations from which samples are drawn before and after war may be quite different. It is possible that there will be a "survivor bias" in looking only at those who are present following the conflict, as they may have different characteristics than those who died or left during the war.

For this reason I combine qualitative and quantitative evidence to unpack the relationship between genocide, nuptiality, and fertility. I use two types of primary data: nationally representative datasets, and interviews I conducted with individual women and key informants in both countries.

[25] Burundi, which is similar in several respects to Rwanda, was also plagued by political violence and in and out-migration of Rwandan refugees during the time period in question. Other countries in the former Yugoslavia that are similar to Bosnia also experienced civil war to varying degrees.

3.1 Nationally Representative Data

3.1.1 Bosnian Living Standards Measurement Surveys [LSMSs]

In Bosnia the nationally representative datasets I used were the 2001 and 2002 waves of the World Bank Living Standards Measurement Survey [LSMS] (World Bank 2001-2004). The Bosnian LSMS surveyed 5,400 Bosnian households about issues such as employment, income, consumption, health, education, and agricultural production. Half of the originally-surveyed households were selected to be re-interviewed in Wave 2.[26] The second wave questionnaire included most of the questions relevant to my analysis—date of first birth, date of first marriage, and so forth—so the analysis includes all 2,412 women aged 15-54 in 2002 that were re-surveyed in Wave 2. I examine factors such as dates of birth, first marriage, and first birth, along with level of education, ethnicity, and whether the household was displaced during the war.

Bosnian households were selected for the LSMS using a modified version of a stratified cluster sample. The most recent census in Bosnia was conducted in 1991, a year before the war. Data from that census were rendered obsolete by mass displacement during the war. Additionally, in the 1991 census Bosnia had 109 municipalities (opština) and no federal entities. The Dayton accords created separate federal entities—Republika Srpska and the Federation of Bosnia and Herzegovina along with the independently-administered Brčko district—which collectively contain 146 opština. The survey was an unprecedented joint effort of the statistical agencies for each of the two main entities in Bosnia—the Republika Srpska Institute of Statistics and the Federation of Bosnia and Herzegovina Institute of Statistics—along with the national statistical agency, the State Agency for Statistics of Bosnia and Herzegovina. The survey selected a national sample frame of 25 opština based on probability proportional to estimated population size, from which a total of 450 census enumeration areas were chosen. A micro-census was conducted within each selected enumeration area to create a master sampling frame of households. Twelve households were selected in each of the census enumeration areas (World Bank 2001-2004). Wave 1 of the survey had a response rate of 82 percent. Half of these households were selected for additional interviews in 2002.

Unfortunately the survey was not designed to examine marriage or childbearing so it does not include a full panel of fertility-related questions, such as dates of all births, miscarriages, use of contraception, fertility intentions, and so forth. Nonetheless, the LSMS does contain several variables of interest. Table 3.1 describes characteristics of Bosnian women surveyed by the first and second waves of the LSMS. It shows that the age distribution of the sample is fairly even; most women have a primary or secondary education. The majority of

[26] Each of the four survey waves had eleven different modules, some of which were collected at the individual level and others at the household level. I did not examine data from the 2003 and 2004 waves as no additional questions on issues pertaining to my research were asked.

women surveyed were either Bosniak or Serb. Over one-fourth of the sample was displaced during the war. The sample size of women cohabiting, divorced, or widowed is small. One third of women surveyed had never had any children; among those who had, the majority of women gave birth to exactly two children. Women who had relocated to their current residence most commonly had done so due to family reasons and to war. A plurality of women had thought about painful war memories at least a little bit during the past week.

Table 3.2 shows average and median characteristics of Bosnian women who responded to the LSMS. Women tended to be fairly young at first marriage (21 on average) and at first birth (22 on average). Seven percent of the sample had given birth to their first child outside of marriage.

Table 3.1: Categorical Characteristics of Bosnian women aged 15-54 in 2002

Variable	N	Percent
Age group at time of interview		
15-19	315	13.0
20-24	321	13.3
25-29	251	10.4
30-34	297	12.3
35-39	279	11.5
40-44	337	13.9
45-49	322	13.3
50-54	298	12.3

Education level		
none	62	2.6
Primary	963	39.8
Secondary	1179	48.7
Univ/beyond	216	8.9

Ethnicity		
(missing)	67	2.8
Bosniak (Muslim)	1177	48.6
Serb	985	40.7
Croatian	191	7.9

Entity		
Republika Srpska	1048	43.3
Bosnian Federation	1372	56.7

Born in rural area?		
No	1071	44.3
Yes	1123	46.4

Displaced during war?		
(missing)	99	4.1
No	1679	69.4
Yes	642	26.5

Variable	N	Percent
Marital Status		
Never married	744	30.7
Legally married	1416	58.5
Cohabiting	37	1.5
Widow/er	167	6.9
Divorced	56	2.3

Children ever born		
0	811	33.5
1	326	13.5
2	883	36.5
3	301	12.4
4 or more	87	3.6

Reason moved here		
Always here	1020	42.1
War	443	18.3
My property occupied	31	1.3
Security	30	1.2
Inadequate living conditions	13	0.5
Family reasons	723	29.9
Work	52	2.1
Other reasons	102	4.2

Rural or urban residence		
Rural	1058	43.7
Mixed	229	9.5
Urban	1057	43.7

During the past week, how often did you think about painful memories from the war?		
(missing)	262	10.8
Not at all	1159	47.9
A little	575	23.8
Quite a bit or more	424	17.5

Data Source: World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

Table 3.2: Mean and Median Characteristics of Bosnian women aged 15-54 in 2002

Variable	Mean	Median	StdErr	Min	Max	N
Age	34.18	34	0.240	15	54	2420
Age at start of war (3/92)	23.70	24	0.240	4	45	2420
Ever attended school?	0.97	1	0.003	0	1	2420
Currently in school	0.19	0	0.008	0	1	2420
Lived here continuously	0.36	0	0.010	0	1	2358
Displaced by war	0.26	0	0.009	0	1	2321
Ever-married	0.66	1	0.010	0	1	2420
Age at first marriage	20.89	20	0.089	15	39	1627
Married before genocide	0.80	1	0.010	0	1	1633
Married during or after genocide	0.15	0	0.007	0	1	2420
Married before genocide; still married to first partner	0.41	0	0.010	0	1	2420
Ever had children	0.65	1	0.010	0	1	2411
Age at first birth	22.24	22	0.093	16	39	1592
Children ever born	1.40	2	0.027	0	10	2408
First birth out of wedlock?	0.07	0	0.006	0	1	1596
First birth interval (months)	15.53	12	0.291	0	60	1424
Husband in household?	0.58	1	0.010	0	1	2420
Age difference (husband-wife)	4.02	4	0.094	-4	20	1409

Data Source: World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002).

3.1.2 Rwandan Demographic and Health Surveys [DHSs]

In Rwanda I used the 2000 and 2005 Demographic and Health Surveys [DHSs] (Institut National de la Statistique du Rwanda [INSR] and ORC Macro 2006; Office National de la Population [Rwanda] and ORC Macro 2001). While the Bosnian LSMS followed respondents over separate waves as a *longitudinal* survey in Bosnia, the Rwandan 2000 DHS and 2005 DHSs were *cross-sectional* surveys. They each represent a separate independently-selected sample of women ages 15-49 at the time of the survey. I pooled respondents from the 2000 and 2005 DHSs to obtain a sample of 21,742 women in Rwanda and their respective event histories during the period before, during, and immediately after the genocide.

DHSs use a standard methodology developed by the U.S.-based Macro International with some customizations by local survey and statistical groups. Women are asked retrospective questions about their date of marriage, date of first birth, education, and other questions. The DHSs are considered the gold standard in demographic and health statistics on developing countries. The surveys have been conducted in more than 75 countries over 27 years, and are generally the most comprehensive, methodologically rigorous, and detailed data about developing countries where vital statistics are often not collected.

Rwandan DHSs asked extensive questions about contraceptive methods, birth spacing, miscarriages, desired number of children, but offered very few covariates to help relate these trends to effects from genocide. In Rwanda, post-war Demographic and Health Surveys [DHSs] did not collect any indicators of women's genocide experience such as ethnicity, former refugee status, date of widowhood, and even—as is typical in most DHSs—whether the woman was born inside the country or not. The latter variable is an important omission because at least one million former refugees who lived in exile since the 1959 genocide came to Rwanda (often for the first time in their lives) after 1994. Their experiences are sharply different from those who were in Rwanda during the time of the genocide. DHSs ask women how long they have continuously lived at their current residence, but given the massive population displacement and resettlement during and after the genocide as well as the tradition of patrilocal residence, it is impossible to discern recent immigrants who grew up in exile from genocide survivors who were recently displaced.

Table 3.3 presents categorical characteristics of Rwandan women aged 15-49 during the 2000 and 2005 DHSs. Women tended to be under age 30 when they were interviewed; most had a primary education, and relatively few had a secondary education or beyond. The vast majority of women were Catholic, Protestant, or Seventh Day Adventist. More than nine-tenths of the sample was born in a rural area.

Table 3.4 presents average and median characteristics of the women interviewed. On average women were around 19 when they first had sex, 20 when they were first married, and 21 when they first gave birth. Half of the sample was married at the time of the interview; on average, women had had 0.78 births in the past five years.

Table 3.3: Categorical Characteristics of Rwandan women aged 15-49 in 2000 and 2005

Variable	N	Percent
Age group at time of interview		
15-19	5322	24.5
20-24	4298	19.8
25-29	3333	15.3
30-34	2733	12.6
35-39	2282	10.5
40-44	2142	9.9
45-49	1632	7.5

Year of Interview		
2000	10421	47.9
2005	11321	52.1

Education level		
none	5440	25.0
Primary	13672	62.9
Secondary	2474	11.4
Higher	156	0.7

Religion[a]		
(missing)	68	0.6
Catholic	4975	43.9
Protestant	4382	38.7
7th Day adventist	1490	13.2
Muslim	234	2.1
Traditional	5	0.0
No religion	92	0.8
Other	75	0.7

Variable	N	Percent
Marital Status		
Never married	8086	37.2
Married	10349	47.6
Widowed	1287	5.9
Divorced	147	0.7
Not living together	1873	8.6

Rural or Urban Residence		
Urban	5350	24.6
Rural	16392	75.4

Born in rural or urban area		
(missing)	94	0.4
Kigali	795	3.7
City	1246	5.7
Countryside	19607	90.2

Current work activity		
(missing)	28	0.1
No	6656	30.6
Yes	15058	69.3

a. Religion not asked in 2000 DHS

Data Source: Rwandan Demographic and Health Survey, 2000 and 2005

Table 3.4: Mean and Median Characteristics of Rwandan women age 15-49 in 2000 and 2005

Variable	Mean	Median	StdErr	Min	Max	N
Age	28.27	26	0.066	15	49	21742
Age at start of genocide (4/94)	19.28	18	0.068	3	43	21742
Ever attended school	0.74	1	0.003	0	1	21742
Years of education	4.16	4	0.015	0	8	16299
Percent of life lived here	0.55	0.47	0.003	0	1	21443
Here during genocide	0.63	1	0.003	0	1	21443
Ever-married	0.64	1	0.003	0	1	21742
Married Now	0.50	0	0.003	0	1	21742
Age at first sex	19.29	19	0.028	5	40	15000
Age at first marriage	19.92	20	0.029	9	40	13656
Married before genocide	0.61	1	0.004	0	1	13656
Married during genocide	0.01	0	0.001	0	1	13656
Married after genocide	0.38	0	0.004	0	1	13656
Widowed	0.06	0	0.002	0	1	21742
In a polygamous marriage	0.12	0	0.003	0	1	10326
Ever had children	0.64	1	0.003	0	1	21742
Age at first birth	21.11	21	0.029	12	41	13584
Children ever born	2.70	2	0.020	0	17	21742
Number of living children	2.16	1	0.016	0	14	21742
Births in past five years	0.78	0	0.006	0	5	21742
Is pregnant now?	0.10	0	0.002	0	1	21742
First birth out of wedlock	0.04	0	0.002	0	1	13584
First birth interval (months)	17.94	13	0.141	0	269	12368
Husband in household	0.88	1	0.003	0	1	10294
Husband's age	37.90	37	0.105	16	98	10299
Age difference (husband-wife)	5.76	4	0.072	-20	72	10295
Husband ever attended school	0.44	0	0.003	0	1	21742

Data Source: Rwanda Demographic and Health Survey, 2000 and 2005

3.1.3 Bias

Due to data availability, I am focusing on marital and reproductive behavior among *all women currently living* in Bosnia and Rwanda. This necessarily excludes women who currently live in exile, while it includes women who may not have been present during the genocide itself. A second caveat is that data quality is obviously an important concern. High-quality surveys and vital registries during and immediately after conflict are rarely feasible due to safety concerns, shifting humanitarian priorities, and so forth. In cases such as Bosnia and Rwanda where a substantial portion of the population was displaced it is difficult to even compare pre-conflict and post-conflict survey data at the sub-national level. Original respondents may have moved or perished and other displaced persons may be living in the empty house (as was a common pattern in both countries). Hence at the aggregate level without detailed questions about time at current residence it is difficult to detect whether post-conflict survey results indicate changes in the original population or patterns of displacement and death.

Both data sources included retrospective reports of first marriage, which have obvious limitations. Questions are only asked of women who have survived to the time of the survey, and reported dates are subject to recall errors among respondents, which may be particularly high among illiterate populations in both countries. Moreover, survey questions only capture a portion of the information we are interested in. Generally we only observe current characteristics (including level of education, socio-economic status) so it can be difficult to ascertain any causal link between endogenous factors.

Women in Bosnia were asked about their first date of birth, but the dates of birth of other children have to be imputed from resident children in the household in Bosnia. Given the low rates of infant and child mortality even during the genocide, the absence of child fostering, and the low levels of fertility overall, imputing dates of birth(s) from resident children is a reasonable approximation of a woman's fertility history. Each member of the household over 15 years of age was surveyed individually about demographic characteristics.

Bosnia had a solid vital registry system to record births, deaths, and marriages in place before the war, but during the war registration essentially collapsed. In recent years vital rates have been estimated by each Federal entity within Bosnia but the data are of questionable quality because no estimates of the denominator (women by age group) have been published. Moreover the registry data are only accessible as aggregate numbers, not with individual characteristics. Rwanda does not have a vital registration system (there is a registration process but data are not available publicly), so the DHS data fills an important gap. Therefore retrospective survey data in both countries is generally the only nationally available source with a large enough sample to estimate demographic rates.

3.2. Fieldwork Methods

Due to the limitations of nationally representative data for this study, I undertook fieldwork in both countries to uncover important causal themes and to understand micro-level perspectives. I spent four months in Bosnia (from July to October 2007) and five months in Rwanda (from October to December 2007 and from January to March 2008). I conducted 117 interviews with individual interviews over the course of these nine months (54 in Bosnia and 63 in Rwanda) and 34 key informant interviews. The majority of the individual interviewees (n=94) were drawn from a stratified cluster sample that, while not perfectly random, was designed to reduce selection bias and increase diversity among interviewees. The remaining interviewees (n=23) were located through NGOs who worked with rape and concentration camp survivors in each country in order to ensure adequate description of these types of experiences. Table 3.5 shows a breakdown of the number of respondents from each category by country.

Table 3.5: Tabulation of Completed Interviews in Bosnia and Rwanda

Rwanda	Bosnia	Outcome
50	44	Completed interviews with women drawn from several geographic sub-units within each country using stratified cluster sampling
13	10	Completed interviews with "oversampled" women (widows, refugees, concentration camp survivors, rape survivors) recruited through NGOs
63	**54**	**Total Completed interviews**

All interviews were conducted with a translator who spoke local language(s). In a few cases the respondent spoke English or French and I conducted the interview myself with assistance from the translator when needed. The interviews were recorded with permission of interviewees.

In both countries I endeavored to obtain a moderately representative sample from geographic clusters, but perfect random sampling was neither feasible nor necessary. That is to say, while respondents were asked demographic information, the surveys were not undertaken with the intent to produce quantitative estimates. Instead, my primary sampling aim was to ensure a diverse sample of different ages, ethnicities, socio-economic statuses, and geographical locations without resorting to a convenience or snowball sample.

In order to recruit respondents for my study, I relied on a modified version of the "clustered probability proportional to size sample framework", widely known as the "EPI" method (Bostoen and Chalabi 2006; Lemeshow et al. 1985). [27] In both countries to the extent possible I sampled from at least six geographic clusters using a staged sampling process.

3.2.1 Bosnian Sampling Method

In Bosnia due to the lack of current population data it was impossible to sample areas relative to their size. Therefore I chose 5 areas (Sarajevo, Tuzla, Mostar, Srebrenica, and Western Croatia) and within each area I chose two survey sites. Since I was unable to randomly select from among clusters of equal population size, my translator and I divided local maps into segments using a grid system. I coded each grid as 0, 1, or 2 based on the perceived population density. Most areas received a 1, but grids near the center that appeared to be heavily populated received a 2. Uninhabited areas (rivers, stadiums, cemeteries) received a 0. I entered the grid data into a spreadsheet and employed a random number generator to choose two segments (numbering from left to right, top to bottom) to pursue within each area.

In Bosnia for each selected grid we photocopied an enlarged map of the grid and used blindfolded and rotated pointing to choose a starting point for our survey. We then set out to reach that point as closely as possible. Once we arrived at the starting point as possible we spun a bottle to decide which direction to follow, and then we used a "random walk" method to select households. We approached every third household we encountered along the right hand side. When we reached what appeared to be a grid boundary we turned around and worked back toward the center and if necessary spun the bottle again to find a new direction to proceed. The geographic distribution of my completed interviews is shown in Table 3.6. These locations are mapped in Figure 3.1.

[27] EPI stands for "Expanded Program of Immunization" and is a standard method used in immunization and nutrition surveys by WHO and UNICEF in developing countries where sampling frames are unavailable or unreliable.

Table 3.6: Geographic Distribution of Bosnian Respondents

ENTITY	METROPOLITAN AREA	LOCALITY	AREA TYPE	INTERVIEWS
Federation[1]	Mostar	West Mostar	Urban	4
Federation	Sarajevo	Bistrik	Urban	9
Federation	Sarajevo	*Concentration Camp Survivors*	Urban	2
Federation	Sarajevo	Stari Grad	Urban	4
Federation	Teskera	Teskera	Rural	4
Federation	Tuzla	Bukinje	Urban	3
Federation	Tuzla	Crvene Njive	Urban	2
Federation	Tuzla	*IDP Camp*	Rural	5
Federation	Tuzla	*Mothers of Srebrenica referral*	Rural	3
Federation	Tuzla	Upper Solina	Semi-urban	3
Republika Srpska	Sarajevo-Romanija	Istočno Novo Sarajevo	Urban	5
Republika Srpska	Srebrenica	Srebrenica	Semi-urban	4
Republika Srpska	Srebrenica	Žuti Most	Rural	6
				54

1. Federation of Bosnia and Herzegovina

Figure 3.1: Map of Interview Sites in Bosnia

At each household we inquired as to whether there were any women between age 18 and 55 present and if so, we gave them a letter describing the survey and requested to schedule a time for an interview with them. If the potential respondent was not home we left a letter with our contact information and the day when we planned to come back. We attempted two follow-ups. This resulted in 49 interviews. With each respondent I completed a structured "life history" form (years of education, romantic relationships, places lived, pregnancies, etc.). The life history table gave me opportunities to ask about wartime experiences. Then I asked women semi-structured questions about their reproductive decision-making before returning to a few additional questions tying the two topics together toward the end. The semi-structured interview format is detailed in section 3.2.3.

Table 3.7 shows the overall response rate of the survey I conducted in Bosnia. In all there were 21 refusals. Five women said that they were 'too busy' to schedule an appointment. Four refusals were made by male householder (one for health reasons, one for work reasons; two without a reason). Four other women reported a recent death in the family, and three women said that they were not interested or gave no reason. Two women said they were 'not feeling well' and would not allow us to return; two more said they 'were not from around here' (in both cases we insisted it did not matter but the refusal still stood). Finally, one woman said that she 'preferred to look toward the future and not think about the past.'

Table 3.7: Survey Response in Bosnia

N	Outcome
44	Completed survey
21	Refused (known eligible)
3	Unreachable (unknown if eligible)
4	Ineligible household (no woman between 20-55)
64.7%	**Response rate (assuming unreachables were eligible)**

The survey response rate of 64.7% was considerably lower than the World Bank's LSMS in Bosnia, which had an 81% response rate. However the LSMS had time and funding to mail a letter to each prospective household, had a stronger official affiliation, and—perhaps more importantly—its interviewers were able to tell households that their responses could be used to improve living conditions in Bosnia. I was not able to make such a promise. Nevertheless, given that I can identify basic characteristics of most of the women who refused and the fact that I am not using my sample as a basis for statistical inference, I think that the results are still very much

worth analyzing. Ethnic Croatian and Serbian women,[28] urban apartment dwellers (many of whom we had to approach via the intercom system), and women who appeared to be over 40 were more likely to refuse us.

3.2.2 Rwandan Sampling Method

In Bosnia population-weighted sampling was not possible, but in Rwanda, due to the availability of 2002 census data, I was able to select a weighted stratified sample of survey areas. Using population weights, I randomly selected four out of five provinces (North, West, South, and Kigali). Within each province, I randomly selected two sectors. Within each sector I randomly selected two umudugudus[29] from which to sample. We obtained maps of our chosen umudugudus from the National Institute of Statistics census files for 2002. Within each, we used blindfolded rotated pointing to choose a random starting point. As in Bosnia, we used the "random walk" method to select households. We went as closely as possible to the point that we had chosen, and then we spun a bottle and walked in the direction indicated. We visited every third residence on the right hand side until we reached a grid line, then turned around and started over again until we completed at least 4 interviews in each neighborhood.

At each household we inquired as to whether there were any women between age 18 and 55 present and if so, we gave them a letter describing the survey and requested to schedule a time for an interview with them. We attempted two follow-ups. Our survey methods in Rwanda were similar to those in Bosnia: my translator and I approached 55 households in fourteen umudugudus in Rwanda.[30] This resulted in 50 household interviews. Table 3.8 lists the geographic distribution of respondents in Rwanda; Figure 3.2 maps these survey locations.

[28] It is common for people to have their surnames on their doors in Bosnia and my translator could usually discern the ethnicity from the name.

[29] An "umudugudu" is the smallest geographic division in Rwanda, generally containing 1,000 people or less.

[30] Two from the initial sample could not be reached: one was on the opposite side of a national park; another was in an area along the D.R. Congo border where the U.S. State Department had issued a travel warning.

Table 3.8: Geographic Distribution of Rwandan Respondents

PROVINCE	DISTRICT	LOCALITY	AREA TYPE	INTERVIEWS
East	Bugesera	Nyamata	*Rural*	4
East	Bugesera	Village of Hope - Bugesera	*Rural*	5
Kigali	Gasabo	Village of Hope - Kagugu	*Rural*	4
Kigali	Gasabo	Remera	*Urban*	5
Kigali	Nyarugenge	Kanyinya	*Rural*	4
Kigali	Nyarugenge	Kicukiro	*Urban*	1
Kigali	Nyarugenge	Muhima	*Urban*	5
Kigali	Nyarugenge	Polyclinic of Hope (Nyamirambo)	*Urban*	4
Kigali	Nyarugenge	Rwezamenyo	*Urban*	5
North	Rulindo	Shyorongi	*Rural*	5
South	Huye	Ngoma	*Urban*	5
South	Huye	Simbi	*Rural*	4
West	Rubavu	Cyanzarwe	*Rural*	5
West	Rubavu	Kanama	*Rural*	8
				64

Figure 3.2: Map of Interview Sites in Rwanda

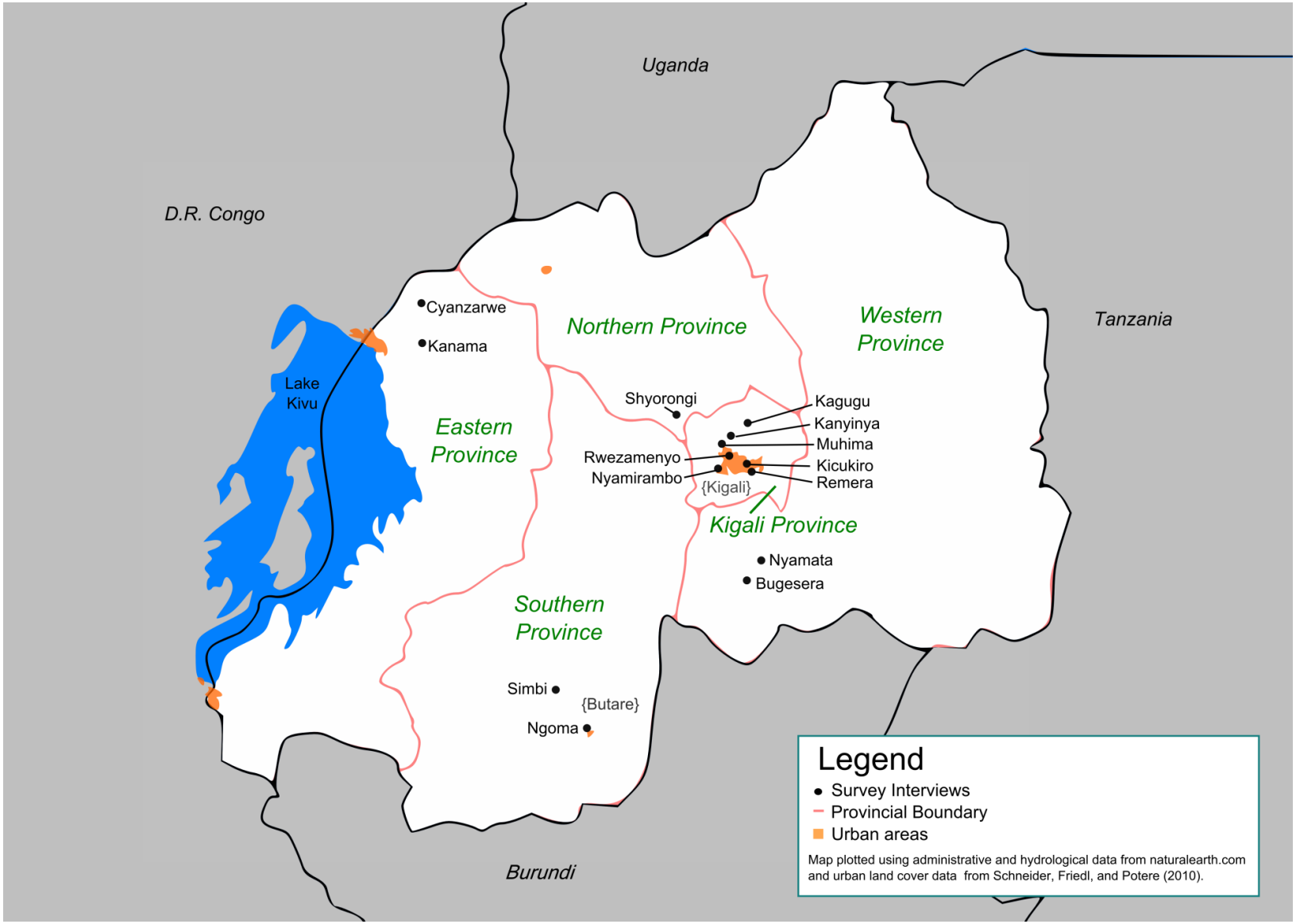


Table 3.9 shows the survey response rate. In Rwanda we had one refusal and one unreachable (known eligible) woman. One refusal in Rwanda was from a woman who shared a small room with many others and had no private place to conduct interview. We offered her transportation to my apartment but she refused. The unreachable woman was in a rural area doing agricultural work. Her husband said she would not be available until the evening and due to limited transportation we were unable to follow up.

Table 3.9: Survey Response in Rwanda

N	Outcome
50	Completed survey
2	Refused/Unreachable[1] (known eligible)
1	Unreachable (unknown if eligible)
2	Ineligible household (no woman between 20-55)
92.6%	Response rate (assuming unreachables were eligible)

3.2.3 Semi-Structured Interview Format

In each country my translator would first translate my introductory letter and my semi-structured survey into the local language(s). When we approached households using the sampling technique described above, we would present a member of the household with a translated version of my recruitment letter (Appendix A) and my translator would explain to an adult resident that we are looking for respondents for the survey.

We asked if any of the women ages 18 and 54 would be available to speak with us either at that time or whether we could come back at a different time. We normally attempted three follow-ups, except in some rural and mountainous areas where it was logistically difficult to conduct follow-ups.

Interviews were generally conducted at women's houses (in a private room, if possible), but at a few occasions we sat outside, met the respondent at her workplace, or found some other neutral location. In Rwanda the *Polyclinic of Hope* and the *Village of Hope* offered us a private interview room. In Bosnia there was a restaurant downstairs from the Concentration Camp Survivors group that was generally empty during the afternoons. In a few cases when we visited women in their home the husband insisted he be present during the interview, but we tried to avoid this whenever possible. In many cases the children wanted to stay as well, but whenever possible we talked to the woman alone.

Prior to conducting my survey I obtained permission from UC Berkeley's Committee for the Protection of Human Subjects to ask for verbal informed consent rather than having

respondents sign a piece of paper. This served two purposes. First it helped ensure women's anonymity. Second it respected the dignity of women who were illiterate. The interviews began by asking for some brief information about how often respondents listened to the radio and watched TV (a standard way to gauge exposure to family planning messages in the media) and then eased into questions about education, date of birth, employment, and fertility and nuptial history. We filled out a structured table of the respondent's educational, nuptial, and birth history and asked open-ended questions about her decisions, her use of birth control, and her desired number of children.

Through this personal history we were also able to approach the subject of genocide by talking about the time period during which it occurred—where the respondent lived (if she migrated) and what her conditions were like. Depending on her initial responses we asked about miscarriages, abortions, whether her husband or sons were in the army, whether she lost family members during the genocide, and whether "national events"[31] had any effect on her fertility and nuptial decisions. Some respondents were quite open and we would simply listen to their narrative, while other respondents sometimes gave very short answers and we had to ask several questions. At the end of the interview we took time to pursue any themes that seemed significant and asked the respondent questions about her socioeconomic status. Appendix B contains a copy of the semi-structured survey framework I used in both countries.

In Bosnia interviews lasted between 15 and 90 minutes, depending on how many times the woman had been pregnant and how much information she volunteered in response to open-ended questions. The median interview length was 28 minutes. In Rwanda interviews lasted between 30 and 180 minutes, and the median interview length was 45 minutes. Unlike in Bosnia, Rwandan women were generally very open to talking to me about family planning, fertility decisions, and even their experiences during the genocide (including rape, which was completely taboo in Bosnia.) The reasons for this difference in willingness to talk are interesting in their own right: my sense is that culture, race, colonialism, current level of American investment in Rwanda, and the perceived possibility of charity played a major role (as did, naturally, the fact that women had more births to talk about in Rwanda than in Bosnia).

As part of my survey in both countries I offered a small compensation to women for their participation. Compensation for interviews is a somewhat contentious topic in the literature (Permuth-Wey and Borenstein 2009; Sears 2001). On the one hand, offering compensation risks inducing half-hearted participation or even coercing very poor women to participate. On the other hand, most of the ethical concerns happen when financial remuneration or free medical treatment is explicitly promised to participants upfront. As Appendix A (recruitment letter and introductory script) shows, I did not promise interviewees

[31] Allowing the respondent to name the genocide in her own way (e.g. in Rwanda, *la guerre* or *le génocide*; in Bosnia *genocide, rat*, or *sukob*), as the choice of terms itself may reveal a particular perspective on the conflict.

any type of compensation. Instead I presented a small gift to the respondent after the interview was complete (in Rwanda) or after she invited me into her home (in Bosnia). In Bosnia the gift—a 1kg package of ground coffee and 500g of sugar cubes—was presented before the interview to be consistent with the customary tradition of daily coffee visits among married women (Bringa 1993; Bringa 1995). Such coffee-visits are embedded in the tradition of *komšiluk* (good-neighborliness), and these traditions have often served as an informal point of ethnic reconciliation between receiving communities and returning refugees after the war (Helms 2010). Presenting coffee and sugar upon being invited into someone's home was more an expression of cultural custom than of a gift. Coffee and sugar are simple staples that every nearly family—no matter how poor—keeps in stock. Hence this offer of coffee and sugar prior to the interview was unlikely to be materially coercive.

In Rwanda it was more difficult to choose a standard interview compensation. There was no particular staple item that every family would want or need. For example, wealthier urban women may prefer more expensive imported brands of food, soap, and other commodities, while women in rural areas may instead prefer local and familiar brands. Moreover, as we discovered in Bosnia, the transportation of any particular commodity to multiple interviews per day while on foot in mountainous terrain can be logistically burdensome. For this reason, after consultation with key informants, I elected to have my translator give participants 1,000 Rwandan Francs (approximately US$2) after the interview was completed. This amount allowed me to be consistent across respondents, as I did not feel comfortable giving a different amount to respondents depending on their perceived wealth. For well-off urban respondents, anything smaller than 1,000 francs could potentially be seen as insulting, whereas for poor and rural women the amount was generous without being a windfall.

One other hazard of interview compensation is that respondents will immediately refer you to their friends and relatives for interviews. Indeed, after a few of my Rwandan respondents received the money they suggested we interview other relatives or neighbors. However we did not allow these types of referrals – we strictly followed the random walk method of selecting households to be interviewed.

Privacy was sometimes an issue: a few households in Bosnia and several in Rwanda did not have a private space or the prospective respondent insisted that it was alright for a friend, mother, or a child to listen in. In a few cases the husband insisted he be present. Often we would try to sit outside in a quiet place instead. In a few cases I had to skip sensitive questions about current contraceptive practices or forced sex.

3.2.4 Oversample of Women deeply affected by Genocide

In each country I also networked with NGOs that assisted widows, rape/torture survivors, and, in Bosnia, internally displaced persons to obtain a special "oversample" of women whose lives were dramatically changed by the genocide.

In Bosnia I obtained contact information of three young war widows from an organization called ***Žene Srebrenice*** (literally *Women of Srebrenica* but in English nearly always translated as *Mothers of Srebrenica)*. We explained the purpose of our study to the director and she gave us the contact information for three young Srebrenica widows who had been displaced to a rural area outside of Tuzla.[32] I then obtained local permission to interview seven women in two refugee camps near Tuzla who are still displaced from their homes in Srebrenica twelve years after the genocide. I also obtained permission to recruit women from the sewing collective of ***Savez Udruženja Logoraša Kantona Sarajevo*** (The Association of Concentration Camp and Torture Survivors of the Sarajevo Canton). At the sewing collective my translator and I were allowed to make an announcement to explain the survey and ask for volunteers. We accepted the first two women who volunteered.

In Rwanda I submitted a description of my study and an essay about my goals to the Rwanda Women's Network who allowed me to interview clients of the ***Polyclinic of Hope*** (in Kigali) and at two ***Villages of Hope*** (in rural areas of Bugesera and Kagugu). Both clinics are devoted to assisting women who were victims of violence in the 1994 era, primarily survivors of genocidal rape. Many clients are widows with few job skills, most are HIV-positive, and most were the sole survivors of their family. Due to a lack of phone numbers and addresses for clients it was impossible to randomly select clients; in a few cases we asked for volunteers on the days we were present, but in most cases the local director called in women who they felt would be well-matched to my study and would be willing to share their story. Of the 13 clients of the Rwanda Women's Network that I interviewed a few have gone on to have additional children, while others were unable to have children or have been discouraged from doing so by health workers treating them for HIV.

With rape and torture survivors I followed a very similar interview format but intentionally allowed the structure to be more flexible so that women were free to tell their story on their own terms. This is important both in terms of gaining trust and in terms of helping these women re-establish a sense of autonomy over their story. If during the course of the interview some sections were skipped we would simply follow up with those questions at the end.

In Rwanda one advantage of conducting my own survey was that it allowed me to unravel issues of ethnicity. After the genocide it is illegal to conduct a survey where respondents have to specify their ethnicity. Distinguishing among Hutus and Tutsis is nearly impossible from DHS data because the two groups share the same language and religion. We followed the

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[32] *Žene Srebrenice* is not actually located in Srebrenica. Instead it is centered in Tuzla where most Bosniak (Muslim) women fled after the massacre. Srebrenica now belongs to the Republika Srpska and many survivors have decided not to return.

legal and customary framework, however during the course of the interview and the discussion of the genocide it generally became obvious whether the respondent was Hutu or Tutsi.[33]

3.2.5 Description of Overall Interview Sample

I coded and entered data from all 117 respondents. I transcribed around half of the interviews, giving preference to interviews with women who were willing to speak openly about their experiences, and who may have articulated a theme that emerged from other respondents. I imported the transcripts into Atlas.TI software which allowed me to synthesize responses around particular themes of importance. Table 3.10 describes several key characteristics of the respondents I sampled in each country. Compared to the survey sample from the LSMS in Bosnia and the DHSs in Rwanda, my survey sample was somewhat over-representative of older women. This was likely driven by the availability of respondents: while we tried to visit houses after school and on weekends, it was sometimes difficult to find time with women who worked or attended school and we instead had to interview older women at home. Additionally, the 'oversampled' group of genocide survivors and widows tended to be older than the average woman. My respondents were fairly consistent with the national average in terms of place of residence and educational attainment, only slightly more urban and slightly more educated.[34]

Rwandan respondents tended to practice their religion much more frequently than Bosnian respondents. In Bosnia almost half of the women said that they practiced rarely or not at all, while in Rwanda more than ninety percent practiced often or very often. In large part, religiosity was discouraged under socialism in Yugoslavia; civic participation was measured almost entirely by party participation. In Rwanda the theme of religious conversion after the genocide arose frequently enough during interviews that I began to ask women directly about it; in all, eight (of 47 women asked) said that they had changed their religion after the genocide. Most of the religious conversions had happened among women who were raped and/or widowed during the genocide. These women tended to move away from Catholicism—likely because some Catholic priests and nuns were complicit in the genocide—although two of the eight became Catholic.

More than three-quarters of the women I interviewed in both countries had been displaced or had lived elsewhere, at least temporarily, during the war. I often had to ask two or more questions about women's place of residence during the war in order to get a complete

[33] Respondents' ethnicity was generally easy to ascertain based on the respondent's migration history or her use of "us" versus "them" when discussing current politics (dominated by the Tutsi-led Rwandan Patriotic Front) and the genocide. Further, once respondents became comfortable with me, they would often volunteer their ethnic identity without being prompted. However we never asked respondents their ethnicity outright.

[34] Note that I include 'some primary' and 'some secondary' in the primary and secondary education categories, while the LSMS and DHS tend to use the metric of highest completed education.

answer, which leads me to suspect that migration during the war was under-reported in both the LSMS and the DHS. In Rwanda, nine women I interviewed (14% of sample) were 'old caseload' refugees who lived in exile until after the genocide. Twenty women in Bosnia and thirteen in Rwanda said that their home had been destroyed or heavily damaged during the war.

Table 3.10 Demographic Characteristics of Interview Sample, by Country

Age Group at Time of Interview

		Bosnia	Rwanda	Total
20-24	n	9	7	16
	%	16.7%	11.1%	
25-29	n	7	6	13
	%	13.0%	9.5%	
30-34	n	4	8	12
	%	7.4%	12.7%	
35-39	n	4	14	18
	%	7.4%	22.2%	
40-44	n	12	11	23
	%	22.2%	17.5%	
45-49	n	7	11	18
	%	13.0%	17.5%	
50-54	n	11	6	17
	%	20.4%	9.5%	
Total	n	54	63	117

Type of Place of Residence

		Bosnia	Rwanda	Total
Urban	n	29	25	54
	%	53.7%	39.7%	
Rural/Mixed	n	25	38	63
	%	46.3%	60.3%	
Total		54	63	117

Education level

		Bosnia	Rwanda	Total
None	n	1	9	21
	%	1.9%	14.3%	
Primary or Some Primary	n	11	36	70
	%	20.4%	57.1%	
Secondary or Some Secondary	n	36	14	1
	%	66.7%	22.2%	
Post-Secondary	n	6	4	24
	%	1.9%	1.6%	
Total	n	54	63	117

Table 3.10 Demographic Characteristics of Interview Sample, by Country, cont'd

Ethnicity (Bosnia)

		Bosnia		Total
Bosniak	n	31		31
	%	57.4%		
Croat	n	8		8
	%	14.8%		
Serb	n	12		12
	%	22.2%		
Mixed	n	1		1
	%	1.9%		
Missing/Refused	n	2		2
	%	3.7%		
Total	n	54		54

Religious Background (Bosnia)

		Bosnia		Total
Muslim	n	31		31
	%	57.4%		
Catholic	n	8		8
	%	14.8%		
Orthodox (Serbian)	n	12		12
	%	22.2%		
Atheist	n	1		1
	%	1.9%		
Other	n	2		2
	%	3.7%		
Total	n	54		54

Perceived Ethnicity (Rwanda)[1]

			Rwanda	Total
Tutsi	n		19	19
	%		30.2%	
Likely Tutsi	n		3	3
	%		4.8%	
Hutu	n		21	21
	%		33.3%	
Likely Hutu	n		1	1
	%		1.6%	
Mixed or Unknown	n		19	19
	%		30.2%	
Total	n		63	63

1. As volunteered by respondent; or, in a few cases, as suggested by and/or confirmed with my translator. We operated within the legal and customary framework; respondents were never asked their ethnicity outright. See text for additional details.

Table 3.10 Demographic Characteristics of Interview Sample, by Country, cont'd

Religious Background (Rwanda)

			Rwanda	Total
Catholic	n		31	31
	%		49.2%	
Protestant	n		14	14
	%		22.2%	
Adventist	n		6	6
	%		9.5%	
Muslim	n		4	4
	%		6.4%	
Other	n		3	3
	%		4.8%	
Pentacostalist	n		5	5
	%		7.9%	
Total	n		63	63

Degree of Religiosity[2] (self-described)

		Bosnia	Rwanda	Total
Very religious	n	0	21	21
	%	0.0%	33.3%	
Practices often	n	14	35	49
	%	26.9%	55.6%	
Sometimes	n	15	6	21
	%	28.9%	9.5%	
Rarely	n	13	0	13
	%	25.0%	0.0%	
Not at all religious	n	10	1	11
	%	19.2%	1.6%	
Total	n	52	63	115

Undergone post-genocide religious conversion? (Rwanda)[3]

		Bosnia	Rwanda	Total
No	n		39	39
	%		83.0%	
Yes	n		8	8
	%		17.0%	
Total			47	47

(Frequency missing=16)

2. Respondents were asked how often they prayed (Muslim) or how often they attended church (Christian/Orthodox). As these religions have differing metrics of religious participation, I counted Muslim women who prayed 5 times per day or Christian women who attended church more than once per week as 'very religous.'

3. This theme arose frequently enough with Rwandan respondents that I began to ask everyone about it. Generally the religious conversion was away from Catholicism, the reason most often cited for this was that a large number of priests were complicit in the genocide.

Table 3.10 Demographic Characteristics of Interview Sample, by Country, cont'd

Grew up in Exile (Rwanda)

			Rwanda	Total
No	n		53	53
	%		84.1%	
Lived in Exile until after Genocide	n		9	9
	%		14.3%	
Noncitizen Immigrant	n		1	1
	%		1.6%	
Total	n		63	63

Own or Rent house?

		Bosnia	Rwanda	Total
Own (Purchased or Built)	n	26	40	66
	%	53.1%	64.5%	
Stay with family or Gift from family	n	14	3	17
	%	28.6%	4.8%	
Rent	n	2	12	14
	%	4.1%	19.4%	
Other	n	7	7	14
	%	14.3%	11.3%	
Total	n	49	62	111

House destroyed or heavily damaged during war?

		Bosnia	Rwanda	Total
No	n	20	29	49
	%	48.8%	54.7%	
Yes	n	20	13	33
	%	48.8%	24.5%	
Nonresident prior to Genocide	n	1	10	11
	%	2.4%	16.1%	
Total	n	49	62	111

(Frequency missing=23)

Lived somewhere else during war?

		Bosnia	Rwanda	Total
No	n	13	6	19
	%	24.5%	9.7%	
Yes	n	40	47	87
	%	75.5%	75.8%	
Nonresident prior to Genocide	n	0	10	9
	%	0.0%	16.1%	
Total	n	53	62	115

(Frequency missing=2)

3.2.6 Key Informant Interviews

Key informant interviews were an essential benchmark for my research in both countries, as they helped me gain insight on particular sub-populations affected by war or on the administration of family planning in the country. In Rwanda it was also necessary to obtain a 'survey visa' from the National Statistical agency prior to conducting my research, while the dearth of post-war statistics prompted me to contact several such agencies in Bosnia. Table 3.11 lists the key informant organizations I met with in Bosnia at least once over the course of my fieldwork, while Table 3.12 lists the key informant organizations I consulted in Rwanda. I classified the organizations into three groups: Family Planning agencies, Statistical agencies, and agencies that serve war-affected and displaced populations. At statistical agencies in both countries I met with more than one person.

Table 3.11 List of Key Informant Organizations, Bosnia

Category	Original Language Name	English Name	Location
Family Planning	*Asocijajica XY, BiH*	*XY Association*	Sarajevo
Family Planning	*UNFPA*	*UNFPA*	Sarajevo
Statistics	*Agencija za statistiku Bosne i Hercegovine (BHAS)*	*Agency for Statistics of Bosnia and Herzegovina*	Sarajevo
Statistics	*Direkcija za implementaciju projekta "CIPS"*	*Citizen Identification Program System Directorate*	Sarajevo
Statistics	*Federacija Bosne i Hercegovine Federalni Zavod Za Statistiku*	*Bosnia Federal office of Statistics*	Sarajevo
Statistics	*Ministarstvo za ljudska prava I izbjeglice*	*Ministry of Displaced Persons and Refugees, BiH*	Sarajevo
Statistics	*Republički zavod za statistiku Republike Srpske*	*Republika Srpska Institute of Statistics*	Banja Luka
War/Displaced Populations	*Amica Srebrenica*	-	Srebrenica
War/Displaced Populations	*Bolnica "Kosevo" Kosevo Hospital*	*Psychotherapy institute at Kosevo hospital*	Sarajevo
War/Displaced Populations	*Centar za Žrtve Torture*	*Center for Torture Victims*	Sarajevo
War/Displaced Populations	*Instituta za istraživanje zločina protiv čovječnosti i međunarodnog prava Univerziteta u Sarajevu*	*University of Sarajevo Institute for the Research of Crimes Against Humanity and International Law*	Sarajevo
War/Displaced Populations	*Medica Zenica*	-	Zenica
War/Displaced Populations	*Ministarstvo za rad i socijalnu politiku, Tuzlanski kanton*	*Tuzla Ministry of Labor and Social Policy*	Tuzla
War/Displaced Populations	*Savez Udruženja Logoraša Kantona Sarajevo*	*The Association of Concentration Camp Torture Survivors, Canton Sarajevo (ACCTS)*	Sarajevo
War/Displaced Populations	*Udruzenje Žene-Žrtve Rata*	*Association of Women Victims of War*	Sarajevo
War/Displaced Populations	*Vive Žene*	-	Tuzla
War/Displaced Populations	*Žene Srebrenice*	*Mothers of Srebrenica*	Tuzla
War/Displaced Populations	*Žene Zenica*	-	Zenica
War/Displaced Populations	*Zmelje Djece*	*Land of Children*	Tuzla

Table 3.12 List of Key Informant Organizations, Rwanda

Category	Original Language Name	English Name	Location
Family Planning	*Association Rwandaise pour le Bien-Etre Familial*	*ARBEF*	Kigali
Family Planning	*Marie Stopes International*	*Marie Stopes International*	Kigali
Family Planning	*Twubakane Decentralization and Health Program*	*Twubakane Decentralization and Health Program*	Kigali
Family Planning	*UNFPA*	*UNFPA*	Kigali
Family Planning Policy	*Minisitiri W'Ubuzima*	*Ministry of Health*	Kigali
Family Planning Policy	*Reseau des Parlementaires Rwandais pour la Population et le Developpement (RPRPD)*	*Rwanda Parliamentarians for Population and Development*	Kigali
Statistics	-	*Rwanda National Institute of Statistics*	Kigali
War/Displaced Populations	-	*Rwanda Women's Network*	Kigali
War/Displaced Populations	-	*Women for Women International*	Kigali
War/Displaced Populations	*Avega-Agahozo*	*Organization of Genocide Widows*	Kigali
War/Displaced Populations	*Pro-Femmes Twese Hamwe*	-	Kigali

United Nations statistics for Bosnia indicate a continued decline in fertility on par with much of Eastern Europe, but fertility rates are generally calculated over 5-year periods, making it difficult to pinpoint annual trends. The task of getting more detailed fertility statistics while in Bosnia proved nearly impossible. There has not been a census since 1991, and with thousands killed and millions displaced and resettled due to the war, current population estimates tend to be unreliable and provide have little detail on age and sex structure. Hence, despite excellent records of births, there are few estimates of female age structure (denominators) from which to compute fertility rates.

Obtaining Bosnian statistical data is particularly challenging due to the presence of three separate statistical agencies, an agency for the Federation of Bosnia-Herzegovina (*Federacija Bosne i Hercegovine Federalni Zavod Za Statistiku*), an agency for Republika Srpska *(Republički zavod za statistiku Republike Srpske)*, and a national statistical agency (*Agencija za statistiku Bosne i Hercegovine*), which provides some aggregate data. The national agency also has a branch office in the independent Brčko district in Northeast Bosnia that compiles its own statistics. I pursued key informants in all three statistical agencies but despite repeated meetings, requests, and referrals, I was unable to get satisfactory historical estimates or even information on methods used to derive current total fertility rates.

The statistical agency in Republika Srpska refused to provide any additional information beyond what was available from their website (a small number of recent reports). The [Muslim-Croat] Federation's statistical agency had a library of historical yearbooks that they were willing to allow me access to and a few staff members agreed to meet with me to discuss data collection and computations. But their cooperation had a limit: one staff member from the Federation's statistical agency, exasperated by my requests for current population data (denominators for fertility rates), told me *"no one in the international community cared when we were dying; so why should they care now how many of us are living?"* I was told that international donors were unwilling to help fund a census, in part out of fear of igniting ethnic tensions. However in 2011 a census is being undertaken in Bosnia for the first time in 20 years.

Other interviews with family planning groups helped me better understand the trends in service provision before, during, and after the genocide in each country. In Bosnia talking to a family planning agency allowed me to confirm a major theme from my interviews: that despite the high availability of 'modern' contraceptives, the majority of respondents who had taken measures to prevent births relied upon abortion or withdrawal in order to do so.

Finally, my interviews with key informants from organizations serving war-affected populations were particularly important in Bosnia, where few women are willing to openly discuss the trauma they endured during the wartime. Meeting with the Center for Torture Victims and the director of the main psychiatry institute in Sarajevo enabled me to get insight on these populations at an aggregate level, without re-traumatizing survivors by prying into their experiences.

Chapter 4: Nuptiality

How might we expect genocide or civil war to affect nuptial patterns over the long run? The answer is not necessarily intuitive. While it is certainly difficult to imagine holding a matrimonial ceremony during wartime, the *de jure* and *de facto* process of union formation may be hastened by other factors related to conflict, including orphanhood, forced migration, and economic loss. Yet, at the same time, it would seem likely that during such a period of national dysfunction and extreme instability, many couples would postpone marriage.

In the era of economic turmoil leading up to war and at the outbreak of war itself in Bosnia and Rwanda, marriage rates declined in both countries. I argue that the decision to postpone marriage until after the conflict ceased was partly a result of the acute need for safety and shelter, the separation of sexes during, the displacement of families and the loss of family members. The scale of violence and mortality, the conscription of men, extent of material deprivation, and the level of displacement are all factors that helped determine the extent and duration of marital postponement among couples. Hardship does not make postponement inevitable, however. There is also evidence of 'transactional marriage' in both countries, and other factors—such as displacement—may actually increase marriage during wartime.

4.1 Nuptiality during and after crises

A small body of literature describes prior findings about nuptial patterns during and after political, economic, and social crises. Using long historical time series of weather, crop prices, and demographic rates, historical demographers have been able to disentangle the effect of price shocks and mortality shocks on nuptiality. They have found that in preindustrial Europe, price shocks in grain caused by poor weather temporarily reduced marriage rates, while mortality shocks associated with high food prices increased marriage rates (Galloway 1988; Lee 1981; Richards 1983). In England the increase in marriages in response to higher mortality was on average delayed by a year. The increase in marriage rates in response to high mortality was mostly the result of widow remarriage (Galloway 1988; Lee 1981) and the hastening of young men's receipt of land inheritance which enabled them to become economically independent earlier than expected (Habakkuk 1953; Ohlin 1961).

Unlike price shocks in historical Europe, the receipt of inheritance as a stimulus for earlier marriage is unlikely to have been a major trend during modern-day genocides Bosnia and Rwanda. Not only was there was enormous destruction of property, particularly in Bosnia, but prime-age males were much more likely to perish during genocide than the elderly. The Bosnian and Rwandan genocides likely left more fathers without their teenage or adult sons than vice versa. Hence it seems unlikely that the mortality spike during genocide would increase marriages for the same reasons that it did historically. Yet, at the same time, the high rate of prime-age male mortality during genocide typically results in a large number of female widows and orphans who are without their primary breadwinner and may seek a spouse.

Evidence from the Great Depression in the United States suggests that crude marriage rates declined during that economic crisis by about 20% from 1929 to 1932 (Galbraith and Thomas 1941). During this time the median age of first marriage rose slightly, from 21.0 to 21.4 (Glick 1977). Recent evidence from economic crises in developing countries is more mixed. During the Mexican peso crisis in the 1990s the crude marriage rate was nearly unchanged, declining by less than 1% (McKenzie 2003). However Rukumnuaykit (2003) found that in Indonesia during the 1990s economic performance and marriage had an inverse relationship: women were *more* likely to marry during times of economic hardship. Nobles and Buttenheim extended the Indonesian analysis by showing that women from harder-hit areas were more likely to marry during the crisis (2008). Both Indonesian studies concluded that the marital 'economy of scale' served as an inducement to wed.

While the evidence on macroeconomic changes and marriages is somewhat mixed, it is also incomplete: we would anticipate that the calculus of union formation during an economic crisis is different from decision-making during periods of armed conflict, particularly when there is mass conscription and when civilians are killed or displaced by combat. There have been few studies examining rates of marriage during and after war, due in part to the difficulty of gathering data during times of crisis. Despite the infamous marriage (and baby) boom in the United States and other countries after World War II, very little analysis has been done to compare how post-war marriage rates differed across countries. Hajnal found that crude marriage rates declined by less than 30% in the United States, France, and England during both World Wars (1953). Crude marriage rates subsequently increased after the war ended in the United States and France—more than doubling in France from 1944 to 1946—but in England, marriages *declined* slightly during the same period. The wartime deficit in marriages in the U.S. and France was more than made up for by the subsequent increase, while in England it was not.

Scherbov and Van Vianen studied the retrospective marital careers of Russian women born during the early 20th century who came of age amidst two world wars, the revolution of 1917, the gulag system, industrialization, collectivization of agriculture, and the devastating famine of 1933. World War II had the most visible effect on nuptiality: the distribution of age at first marriage for women who come of age during World War II is bimodal (1999: 136), suggesting that nuptiality dropped sharply during the 1941 German Invasion and World War II and afterward many women who had postponed marriage were wedded. However the proportion never-married among this birth cohort was also high, which suggests that some women may have delayed so long they were unable or unwilling to marry after the war.

More recent studies of marriage patterns during and after civil war and genocide are consistent with the post-war marriage boom hypothesis. In Cambodia the under the reign of the Khmer Rouge the rate of first marriages fell by around 35%, but then immediately rebounded 86% higher than the prewar level, a particularly astonishing rebound given that there was only one single man for every two single women when the genocide ended (Heuveline and Poch 2007). In Timor-Leste [East Timor], women have gotten married at increasingly younger ages during and after the recent war for independence. A majority of

women in younger cohorts have married before the age of 20 compared to a third of their older counterparts (Saikia, Dasvarma and Wells-Brown 2009).

A study of Rwandan data from the Demographic and Health Survey comparable to this one found that marriages were delayed among women living in areas where women reported higher numbers of adult sibling deaths during 1994 (ostensibly from the genocide), even after controlling for education and other characteristics (Jayaraman, Gebreselassie and Chandrasekhar 2009). However, the 1992 Rwandan Demographic and Health Survey, which asked women their ethnicity, found that the median age at marriage for Hutu women was 19 while for Tutsi women it was 21 (Office National de la Population [Rwanda] and ORC Macro 1993) . Hence the finding that marriage is delayed among women living in clusters with more sibling deaths is, in many ways a tautological finding that women living in clusters with more sibling deaths are more likely to be Tutsi.

Shemyakina (2007; 2009) examined the demographic effects of the 1992-1998 Tajik civil war using data comparable to that available for Bosnia (World Bank Living Standards Measurement Survey [LSMS]). She found that war tended to delay women's entry into marriage, particularly among women in regions hardest hit by the war. Women from conflict-affected areas were about 30% less likely to get married during the war, but surprisingly the local postwar sex ratio did not seem to affect the probability of marriage, perhaps because marriages in Tajikistan tend to be arranged through kinship networks and the age difference between brides and grooms increased during the time period of conflict. She hypothesizes that the latter trend was likely due to the high mortality rate of young men during the war.

4.2 Causal Pathways

Before examining the trends in nuptiality during and after genocide in Bosnia and Rwanda, it is important to consider an array of factors that may have influenced these trends. Table 4.1 lists several potential causal pathways between genocide and nuptiality. Factors are organized by time period (during war/genocide, immediately after war/genocide, and long-term) and by the hypothesized direction of effect (should increase nuptiality or should decrease nuptiality). Based on themes from literature, interviews and the availability of data I have labeled these factors as belonging to one of four groups: (1) *involuntary factors*, (2) *material and economic factor*s, (3) *sex and gender role factors*, and (4) *psychosocial factors*. Occasionally a factor is listed more than once because it may be influencing the marriage rate in different ways and in opposite directions. For example, economic devastation could increase the potential 'gains to marriage' among young adult women living with families whose houses were destroyed or devastated by war, *or* it could also reduce the potential 'gains to marriage' if a prospective partner is unemployed and without prospects for financial independence.

Table 4.1: Ways in which War and Genocide could affect the Marriage Rate

Time Frame	Factors that should Increase Nuptiality	Factors that should Decrease Nuptiality
During War	**(ME)**[a] Loss of male breadwinner or resources increases 'transactional marriage.'[35] **(PS)**[b] Desire to seek intimacy during conflict ("Attachment theory").[36] **(IV)**[c] Displacement/refugee camps bring proximity to potential mates and may reward household formation.[37] **(SG)**[d] Reversion to traditional gender roles during wartime.	**(ME)** Couples postpone due to sudden loss of income, lack of basic resources. **(PS)** Couples postpone marriage due to uncertainty about future. **(IV)** Couples postpone marriage due to displacement, disruption. **(SG)** Couples postpone due to separation of sexes as males are conscripted.
Immediately After War	**(ME)** Schooling interruptions induce additional dropouts who ultimately marry at a younger age **(IV)** Postwar 'marriage boom' as reunited couples opt to marry; couples who cohabited during war now register. **(SG)** Reduced male-female sex ratio leads women to accelerate mate selection.	**(ME)** High level of male unemployment reduces pool of viable male partners. **(ME)** Reduced stock of habitable housing impairs household formation. **(PS)** Continued postponement during uncertain process of post-war reconciliation.
Long-Term	**(ME)** Increase in employment and incomes during post-war reconstruction and aid flow enables household formation. **(PS)** Ethnic pronatalism encourages within-group family formation. **(PS)** Success of political reconciliation may encourage survivors to believe in shared future. **(IV)** Survival effect: population who perished may have had later ages at first marriage	**(ME)** Entrenched poverty reduces ability to afford 'bride price.' **(PS)** Rape survivors and those injured by war seen as 'less attractive' and may be uninterested in marriage **(PS)** Weakening of social bonds makes it more difficult to meet prospective partners **(IV)** Demographic transition which began before war restarts. **(SG)** Decreased male-female sex ratio reduces 'supply' of potential husbands.
KEY:	a. **(ME)**: Material and Economic Factor b. **(PS)**: Psychosocial Factor	c. **(IV)**: Involuntary Factor d. **(SG)**: Sex and Gender Factor

[35] During natural crises and war, in order to survive women often exchange sex for food, security, or other necessities (World Health Organization 2002). This trend has been documented in Rwanda (Twagiramariya and Turshen 1998). In strictly religious cultures such as Bosnia and Rwanda the 'transaction' tends to take place around marriage rather than sex.

[36] See Bowlby (1969) and Hazan and Diamond (2000).

[37] For example young couples who marry within a refugee camp may 'earn' separate shelter from families and separate food rations.

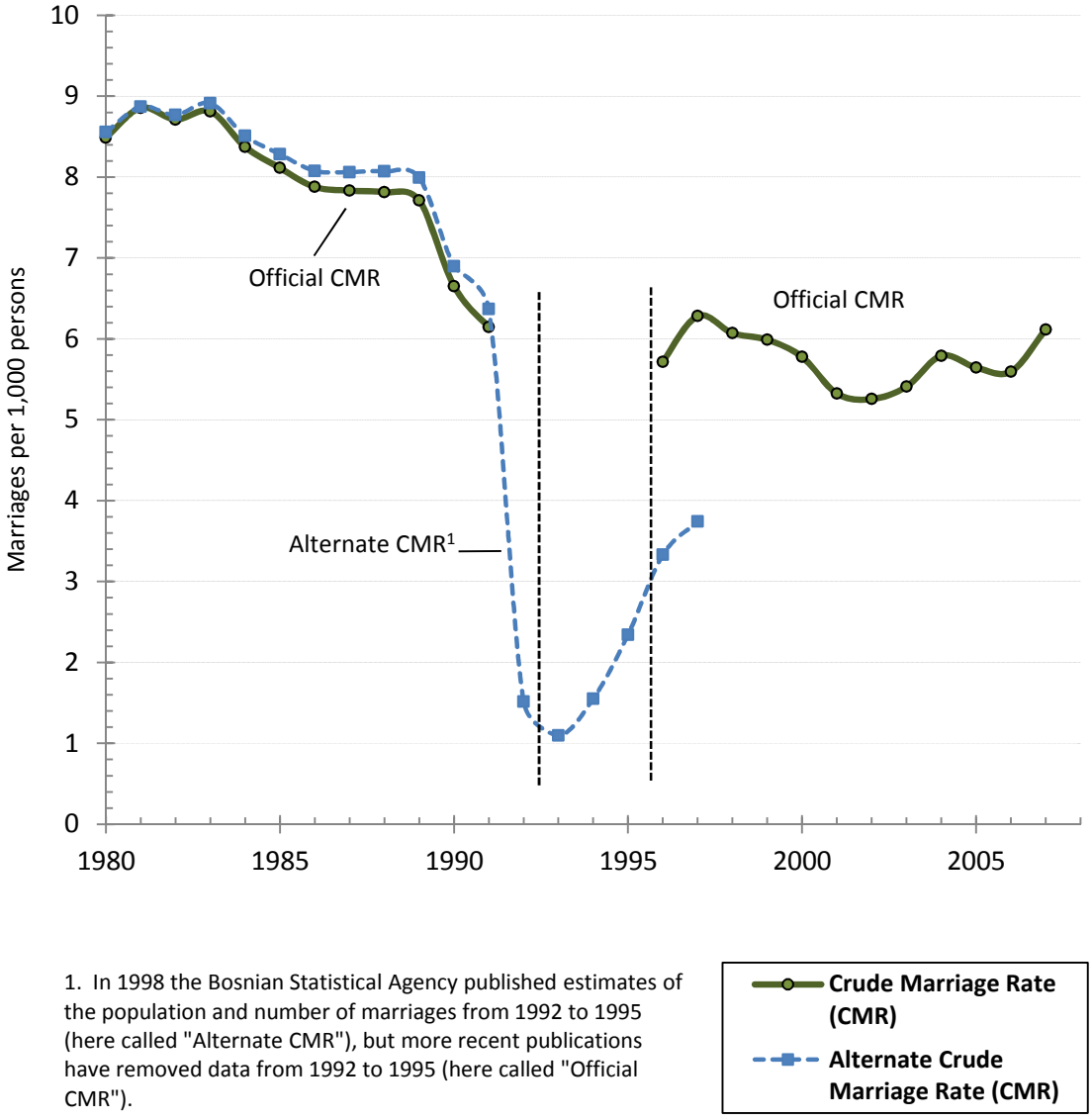
4.3 First Marriage Rates

Broadly speaking, demographers measure nuptiality three ways: (1) using tabulations of marital status by age group to derive a singulate mean age of first marriage; (2) using marital registries to calculate median/mean age at first marriage among all brides and grooms during a given period; or (3) by measuring the number of marriages over time relative to the population 'at risk' of the event. The event measurement approach, which produces either a crude marriage rate or an age-specific marriage rate, is in many ways preferable when analyzing period effects on nuptiality. A decline in the marriage rate during a crisis followed by an increase afterward is the most obvious indicator of mass marital postponement, while changes in the singulate mean age at first marriage or in the median age at first marriage in and of themselves only indicate changes in the characteristics of those who get married, not in the tendency to get married overall.

Both the crude marriage rate and the first marriage rate rely on accurate counts of the number of marriages (preferably via a population registry) and on population counts, if not of the number of never-married persons by sex and age group then at least of the total population. Unfortunately, neither Bosnia nor Rwanda satisfied these conditions during war time. In Rwanda, even in peacetime many couples elect not to register at the district office due to the bureaucratic hassle and expense (Rose 2003) and marry in a traditional or church ceremony instead. In Bosnia, while the government has generally achieved high rates of marital registry, the civil war from 1992 to 1995 impaired the process of marital registry in many municipalities. Moreover, with high numbers of people displaced during the war, it is nearly impossible to know what the total resident population was during that period.

From 1996 to 1998, however, the Bosnian Statistics Office published its estimates of the number of marriages that took place from 1992 to 1995 and of the resident population in Bosnia at that time. These figures have been incorporated into Figure 4.1, which shows the crude marriage rate in Bosnia during the 1990s. In 1999 the Bosnian statistics office ceased publishing tallies of the marriages that took place during the war or of the resident population of the country during that time period, presumably due to fears about inaccuracy, controversy, or both. Figure 4.1 treats the 1998 retrospective data on wartime registries as an 'alternate' crude marriage rate, along with recently-available 'official' statistics that now exclude 1992 to 1995 altogether.

Figure 4.1: Crude Marriage Rates (CMR), Bosnia-Herzegovina, 1980-2007



1. In 1998 the Bosnian Statistical Agency published estimates of the population and number of marriages from 1992 to 1995 (here called "Alternate CMR"), but more recent publications have removed data from 1992 to 1995 (here called "Official CMR").

SOURCES: 1980-2002 data from Council of Europe (2004), 2003-2007 data from Bosna i Hercegovina Agencija za Statistiku (2008). Council of Europe estimates were based on Bosnian vital rates and updated to reflect additional information for the post-war period. Alternate series from Bosna i Hercegovina Agencija za Statistiku (1998)

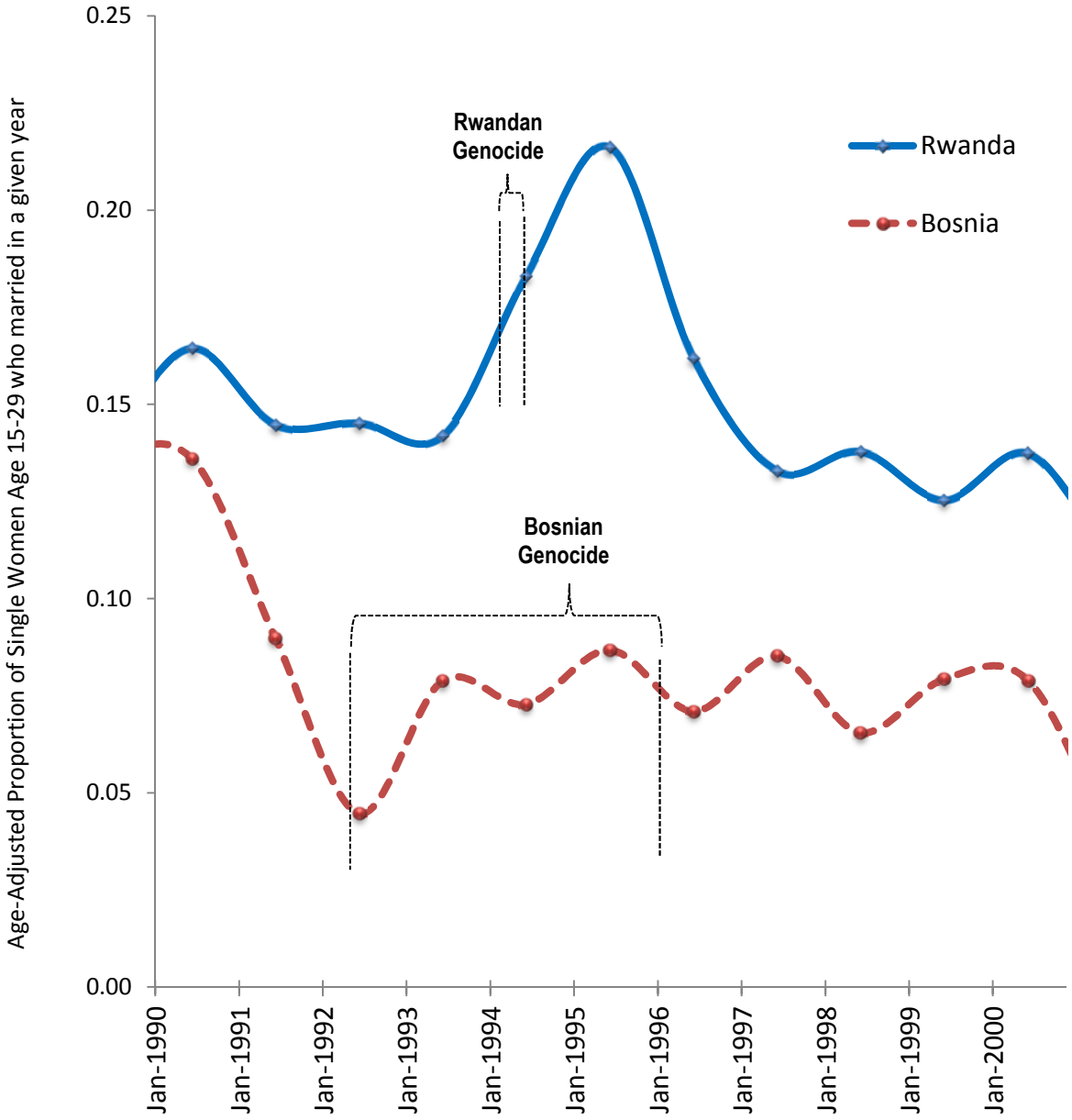
Figure 4.1 shows a declining trend in marriages throughout the 1980s, accelerating in 1990 and dropping steeply from 1991 to 1992, the year war began, from slightly more than six marriages per thousand persons to fewer than two marriages per thousand persons. The 'unofficial' wartime crude marriage rate in Figure 4.1 reaches its nadir in 1993 at around one marriage per thousand persons and steadily climbs up to around four marriages per thousand in 1996. It is important to note that there was enormous population displacement and resettlement throughout the war and several years afterward, and it is not clear whether displaced persons were included in the analysis. Surely one reason why these wartime numbers are no longer published is because they are unreliable: couples may have unofficially married during the war or married outside of the country.

For purposes of standardization and comparison, I calculate women's 'retrospective first marriage rate,' which is the age-standardized[38] risk that a never-married women aged 15 to 29 marries during a given calendar year.[39] The first marriage rate is more sensitive to period trends than is the age of first marriage and hence is a more useful indicator of wartime and post-war trends. Obtaining it retrospectively is not ideal—certainly there will be errors in date recall and survival bias among the population—but is the best solution under these difficult circumstances, particularly in Rwanda where many couples opt to skip the registration process altogether. With a large enough survey sample in each country it should be possible to roughly reconstruct period trends. Women's retrospective first marriage rates in Bosnia and Rwanda are shown in Figure 4.2.

[38] I standardize by age by computing a ratio of marriages among never married women in a five-year age group and averaging the rate across all three 5 -year age groups (15-19, 20-24, and 25-29) to reduce the influence of age structure.

[39] By age 30 more than 70% of Bosnian women and more than 90% of Rwandan women are married. At ages 30 and above the sample size of unmarried women is too small to reliably examine risk of marriage in a given calendar year.

Figure 4.2: Age-Adjusted First Marriage Rate, Women 15-29, Bosnia and Rwanda



Source: Author's calculations from Bosnian LSMS (2002) and Rwandan DHS (2000; 2005).

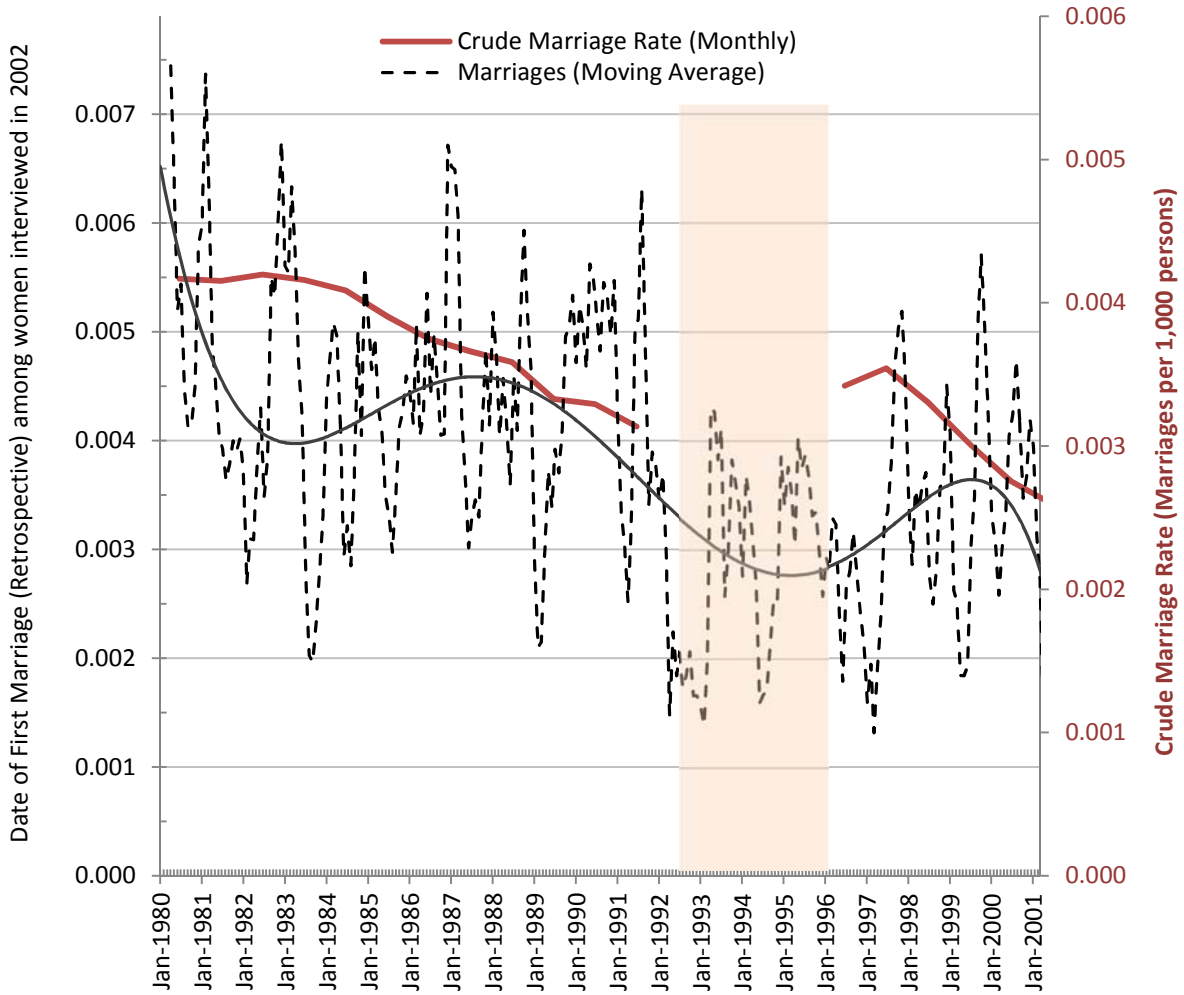
The retrospective marital trend line for Rwanda is depicted by the solid line at the top of Figure 4.2. It peaks sharply in the wake of the genocide. Surprisingly, it would appear that there was no decrease in marriages at all in Rwanda during the genocide; quite the opposite. While the three-month Rwandan genocide was too short-lived to be depicted in these annual[40] data, the sustained increase after the war above and beyond any perceived decline during the war is unexpected. Raw monthly marriage counts from Rwanda (not shown here) confirm that the peak in the marriage rate during that period was largely based on a surge in marriages after the genocide ended in July 1994.

The dashed line for Bosnia at the bottom of the chart indicates there was a sharp decline in marriages from 1990 to 1992, but very little definitive trend afterward. In Bosnia the 'post-war marriage boom' seems to have been supplanted by a 'post-battle marriage boom.' This is a different picture than Figure 4.1, however. Figure 4.3 compares the crude marriage rate on a monthly basis versus the weighted proportion of women sampled by the LSMS who married in a given month.

The thin black line in Figure 4.3 depicts a trendline of the moving average of retrospective first marriages, while the dark red line indicates the crude marriage rate. The crude marriage rate indicates a slight surge in marriages after the war compared to the pre-war era, while the retrospective data show a delayed increase in the marriage rate until a few years afterward. The crude marriage rate after the war likely reflects a number of couples who married during the war and registered afterward. Moreover, given the lack of postwar population counts (denominators), it is difficult to discern the accuracy of reported statistics. For this reason I focus on the retrospective standardized trend rather than the overall crude rate.

[40] By combining two waves of retrospective DHS data from 2000 and 2005 there were more than ten times the number of reported marriages in Rwanda than in Bosnia from 1986 to 2001 to use for calculations (734 in Bosnia compared to 8,434 in Rwanda).

Figure 4.3: Incidence of First Marriage versus Crude Marriage Rate, Bosnia, 1980-2001



NOTES: Date of first marriage is a retrospective report among 3,055 women interviewed in 2001 and 2002 who were between 15 and 55 at the time of interview. Crude marriage rate indicates marriages per 1,000 persons.

SOURCES: Council of Europe (2004), Bosna i Hercegovina Agencija za Statistiku (2008), and Author's calculations using data from Bosnian Living Standards Measurement Survey [LSMS] (2001, 2002)

Note that LSMS data reflect reported date of first marriage Date of first marriage among women age 15 to 70 interviewed in 2002

4.4 Average Age at First Marriage

In conjunction with first marriage rates it is useful to examine the average age of women who married during a given time period. In Bosnia, the legal age of majority to consent to marriage is 18, while in Rwanda it is 21 (United Nations Statistics Division 2009). In Bosnia minors may apply through civil courts to marry as young as 16, while in Rwanda minors may apply to the minister of justice with a letter of permission from their parents or a certificate of orphanhood (Rwandan Ministry of Justice 2009). The Rwandan age requirement was enacted in 1988 by the Habyarimana government amidst growing recognition of population pressures and the land shortage. However the law on age of majority was not officially implemented until 1992 (Tallon 1992), and any enforcement is made difficult because of a lack of birth certificates and because Rwandans recognize traditional, religious, and common-law marriages as valid (Adekunle 2007). For example in my own Rwandan fieldwork a few respondents—especially the rural poor—told me they were married, and when I asked about their date of marriage they would explain that there was not really a ceremony, they had just moved in together.[41]

Despite the fact that Bosnia had undergone the demographic transition prior to war while Rwanda had not, both Bosnia and Rwanda had similar average ages of first marriage prior to the onset of war. Yugoslavia was in fact one of the archetypal examples of the "Eastern-European pattern" of early age at first marriage (Hajnal 1965). Like its Balkan neighbors—and unlike other Eastern European countries—the collapse of communism in the early 1990s has not led to a dramatic increase in age of first marriage. The median age of women at first marriage declined slightly from 21 in pre-war Bosnia to 20 during the war and has since increased to 22. In Rwanda the median age of first marriage was 20 in 1992 and was 21 in 2005 (Institut National de la Statistique du Rwanda [INSR] and ORC Macro 2006; Office National de la Population [Rwanda] and ORC Macro 1993).

Women's average age at first marriage by year of first marriage is shown in Figure 4.4 for each country. The dashed lines represent a 95% confidence interval. In both countries the average age at first marriage fell slightly at the start of the war. In Bosnia there appears to have been a decline in the age at first marriage when the war began in 1992, perhaps due to accelerated first marriages—although given the width of the confidence interval, it is possible that the initial wartime decline is an artifact of the data.[42] However there was clearly an increase in the age at first marriage immediately after the war in Bosnia from 1996 to 1997. This is consistent with a pattern of marriage postponement during war.

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[41] The DHS also separates married from cohabiting respondents in a detailed question about marital status, but then later groups them together as 'ever married' in another variable about marital status.

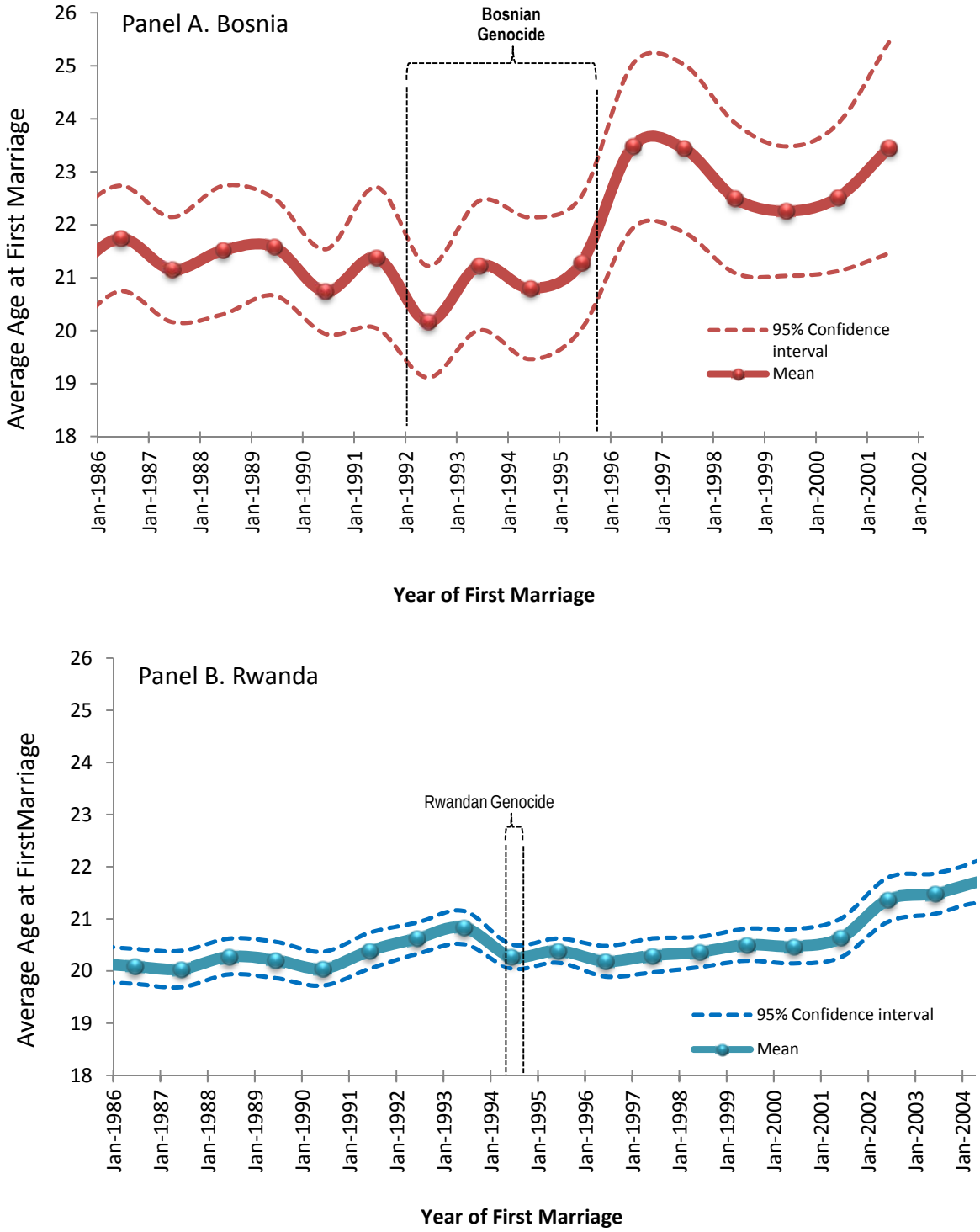
[42] The pooled sample size from the pooled Rwandan DHSs is almost ten times as large as the sample size from the Bosnian LSMS.

In Rwanda the *decline* in average age at first marriage after the war is potentially suggestive of a more highly competitive first marriage market among women. A dramatic increase in adolescent orphans and in teenagers whose family homes and livelihoods were destroyed or damaged during the war may have increased transactional marriage among younger women there. Young girls who dropped out of school after the genocide would have likely married at earlier ages. Male widowhood may have increased the demand for marriageable female partners. The overall trend is also consistent with Shemyakina's finding in Tajikistan that young women 'flooded' the marriage market to capitalize on their youth when it was clear that the post-war sex ratio was unbalanced (2007; 2009). In Rwanda women's average age of first marriage did not increase to its prewar level until 2001, six years after the genocide ended.

The mean and median age at first marriage by birth cohort are shown in Table 4.2 for Bosnia. Retrospective average age at first marriage was included only for women currently aged 24 and above so as to minimize downward bias on the distribution of age at first marriage among the youngest cohorts. In Table 4.2 we see a peak in age at first marriage among the cohort born 1963 to 1965, who were teenagers when Tito died in 1980 and subsequent economic panic and 'stabilizations' began, perhaps indicating a 'delay effect' in the mid-late 1980s that was observable in Figure 4.2. There was also a peak in age at first marriage among women who came of age during the genocide (those born 1972-1974, who were 18 to 20 in 1992 when the war began).

Table 4.2 also includes the median and mean age difference between husband and wife. The median is a more valuable metric for age differences because if the wife is older than the husband the age difference will be negative. Note that the median is expressed in terms of whole numbers; I chose not to calculate precise decimal ages of women at first marriage because recollection of months tends to be problematic among the rural poor in both countries. The mean and median age difference seems to have peaked twice in Bosnia: first among cohorts born 1966 to 1971 who were ages 17 to 22 during the hyperinflation episode in 1988, and then again among the cohort of women born 1975 to 1977 who were ages 15 to 17 at the start of the 1992 war. Given the relatively low average age at first marriage among these cohorts, the larger spousal age gap may suggest that Bosnian women marry earlier and seek slightly older men during times of financial panic and insecurity.

Figure 4.4: Average Age at First Marriage, Bosnia and Rwanda



Source: Author's calculations from Rwandan DHS (2000; 2005) and Bosnian LSMS (2001, 2002).

Table 4.2: Women's Age at First Marriage by Birth Cohort, Bosnia[a]

WOMEN'S AGE AT FIRST MARRIAGE				
Birth Cohort	**Median**	**Mean**	**SE**	**n**
1957-1959	20	21.13	*0.308*	180
1960-1962	20	20.69	*0.224*	198
1963-1965	22	22.05	*0.327*	136
1966-1968	20	21.52	*0.332*	147
1969-1971	20	21.13	*0.282*	160
1972-1974	21	21.39	*0.316*	108
1975-1977	20	19.96	*0.268*	87

a. Calculated among women 24 years of age and older at the time of the survey.

Source: Bosnian 2002 Living Standards Measurement Survey; Rwandan 2000 and 2005 DHS

Table 4.3 shows women's mean and median age at first marriage by birth cohort for Rwanda. Women born from 1969 to 1971, who were teenagers during the financial crisis and when Rwanda passed the law on minimum age at first marriage in 1988, had the highest mean and median age at first marriage. But this law was never enforced until 1992 (Tallon 1992), when these women were already 21. Hence the higher median (and mean) age of marriage among this birth cohort may be indicative of a delay from 1990 to 1992 at the start of the civil war and the implementation of World Bank economic liberalization. If this finding were true it would suggest that there may have been more delays in marriage during the 1990-1992 era than during the genocide itself. Subsequent birth cohorts, including those who were teenagers during the 1994 genocide, actually have a *younger* mean and median age at first marriage, suggesting no delay during war and if anything a hastening of the marital process.

According to Table 4.3, the mean age difference between husbands and wives in Rwanda has generally been increasing in Rwanda over time. The gap between median and mean age difference is widest among women born 1975-1977 who were age 17-19 when the genocide began, which may suggest a bimodal pattern of spousal age difference. It is also possible that the mean and median age at first marriage will continue to increase among cohorts born after 1972 as additional women get married at later ages. But Figure 4.4 shows that a substantial majority of these birth cohorts are already married, so additional marriages are unlikely to be numerous.

Table 4.3: Women's Age at First Marriage by Birth Cohort, Rwanda[a]

WOMEN'S AGE AT FIRST MARRIAGE				
Birth Cohort	**Median**	**Mean**	**SE**	**n**
1957-1959	20	20.01	*0.104*	1130
1960-1962	20	20.28	*0.101*	1384
1963-1965	20	20.55	*0.109*	1295
1966-1968	20	20.58	*0.107*	1292
1969-1971	21	20.72	*0.092*	1493
1972-1974	20	20.23	*0.077*	1653
1975-1977	19	19.67	*0.076*	1349
1978-1980	19	19.55	*0.092*	917

a. Calculated among women 24 years of age and older at the time of the survey.

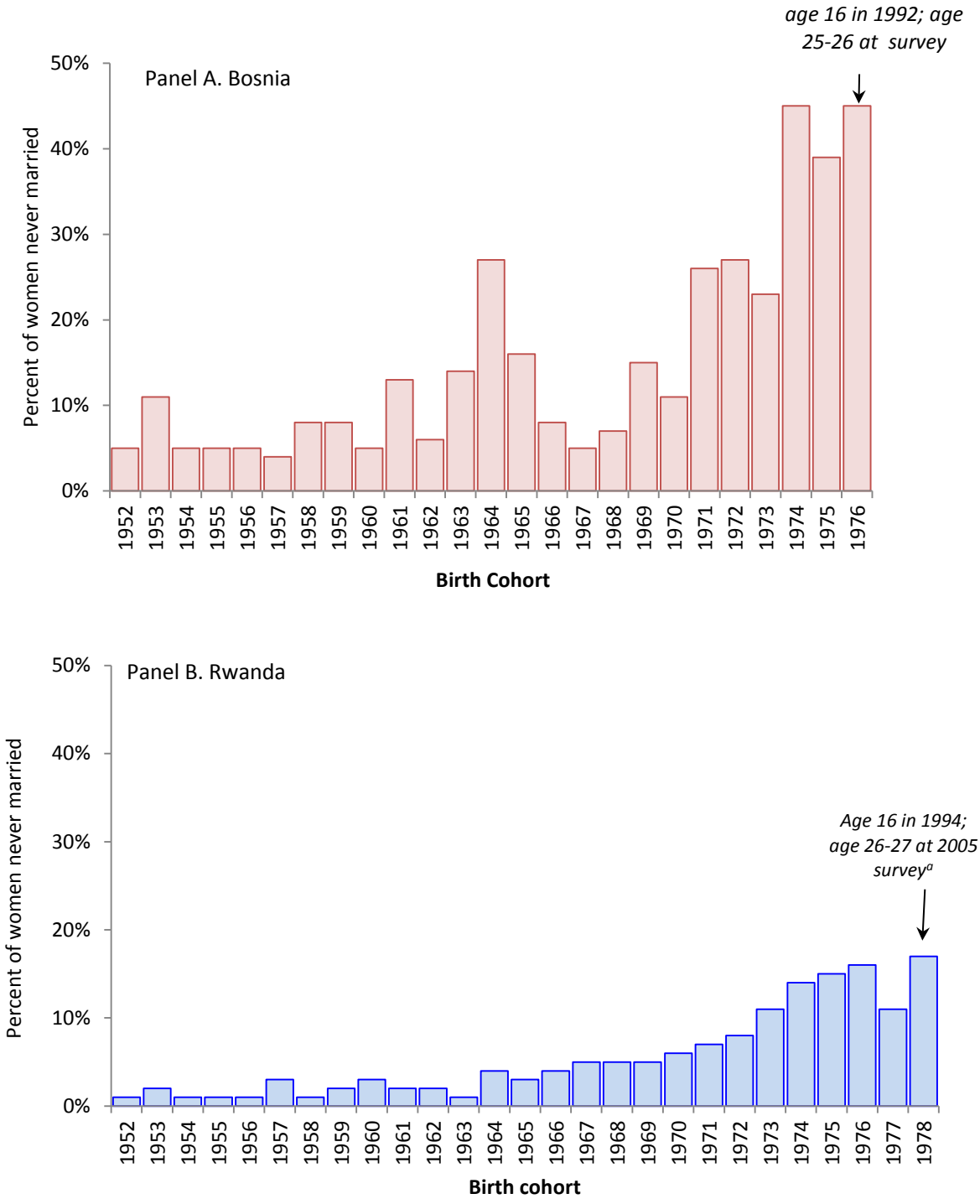
Source: Rwanda 2000 and 2005 Demographic and Health Surveys

Figure 4.5 shows the proportion of each birth cohort year that has never-been married in Bosnia and Rwanda, and here it is evident that at the time of the survey a substantial plurality of women born 1975-1976 in Bosnia had not yet married, so it may be too early to consider the reduced age difference among marriages for this youngest cohort. Even so, the cohorts 1966 to 1971 had largely completed marriage at the time of the survey.

Interestingly, while the cohorts born 1963 to 1965 should have also completed marriage, a relatively large proportion of these women (up to 25% for the cohort born in 1964) were never married. Table 4.2 showed that in the cohort that had the highest mean and median age at first marriage (the 'delayers'), the median age difference between husband and wife was actually *lower* than among other birth cohorts. Given their higher relative age at first marriage, it is possible that these women delayed marriage during the financial crisis until it was too late. This may suggest that if women do delay marriage during a crisis then they may be willing to accept slightly younger men afterward in order to marry at all.

Figure 4.6 shows the proportion of women remaining single after age 15 by age group at the start of the genocide in Bosnia and Rwanda. In Bosnia the data show proportional differences in delayed marriage at each age across generations. In Rwanda, however, the birth cohort that was aged 15-19 in 1994 had a similar early marriage pattern to earlier cohorts. This is contrary to the expected pattern of demographic transition. It indicates that the Rwandan crisis may have actually accelerated marital timing among younger women. Interestingly, at older ages, the cohort aged 15-19 at the time of the genocide seems to have reverted back to the expected trend.

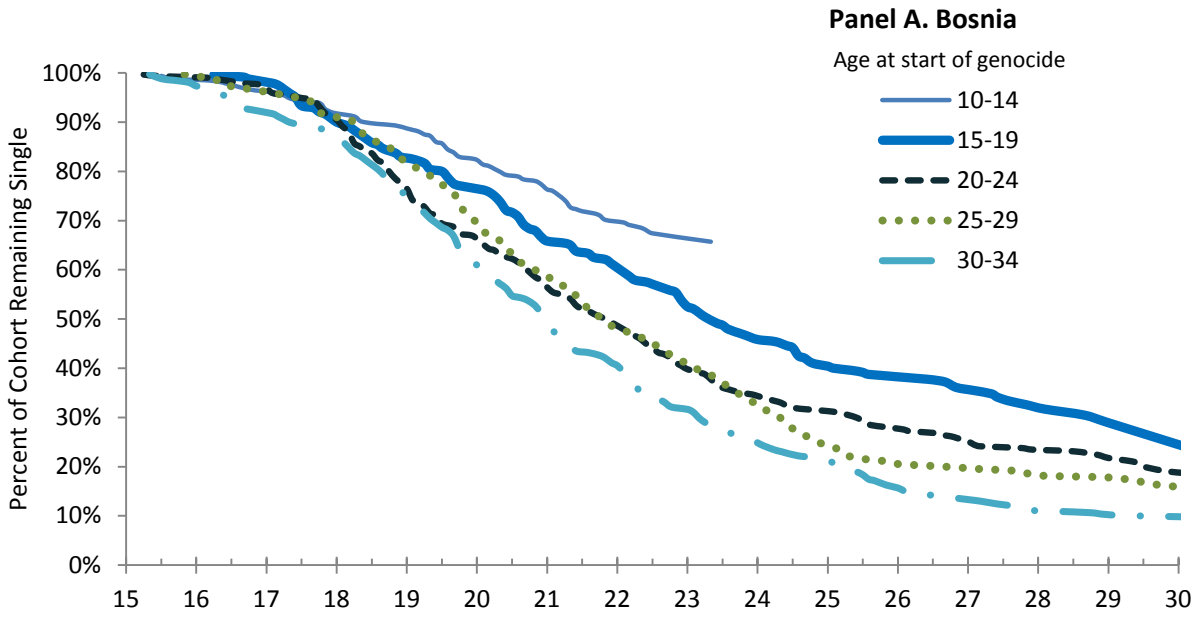
Figure 4.5: Percent Never-Married, by Birth Cohort, Bosnia and Rwanda[a]

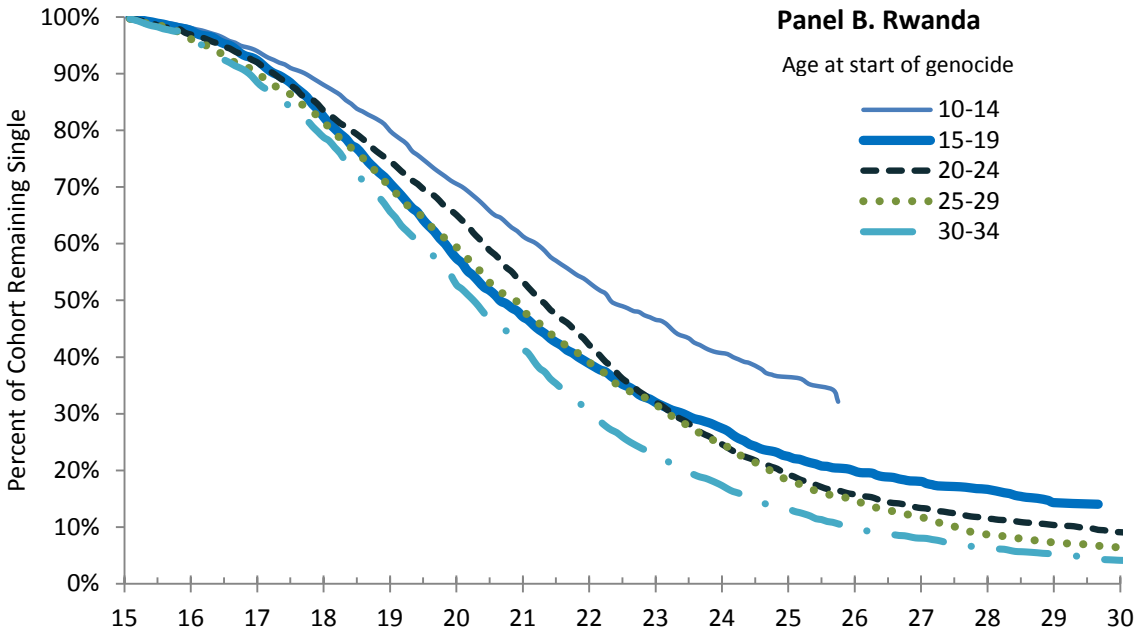


a. Never married at time of survey, which in Bosnia was 2002 and in Rwanda was 2000 or 2005. Only recorded if respondent was at least 25 at time of survey.

Source: Calculations from Bosnian LSMS (2002) and Rwandan DHS 2000 and 2005.

Figure 4.6: Proportion Remaining Single after 15, by age at Start of Genocide





Source: Calculations from Bosnian LSMS and Rwandan DHS 2000 and 2005.

4.5 Interethnic Marriage

Statistics cannot tell us much about cultural and social dynamics of marriage in a post-genocide era. In Rwanda, it is now illegal for surveys to ask about ethnicity, so there are no national statistics on marital homogamy. In the Bosnian Living Standards Measurement Survey the vast majority of marriages were reported as ethnically homogamous. Fewer than twenty women in the entire sample reported an interethnic marriage, although 320 did not report both husband's and wife's ethnicity, and based on my own fieldwork I expect that many of these are ethnically mixed partners who preferred not to reveal this to the interviewer. The finding of low interethnic marriages is consistent with an article suggesting that the increase in interethnic marriages before the war was primarily due to demographic trends (changing ethnic composition) rather than increased 'preference' (Botev 1994). Many of my interviewees reported an increased desire to marry someone from their ethnic group after the genocide.

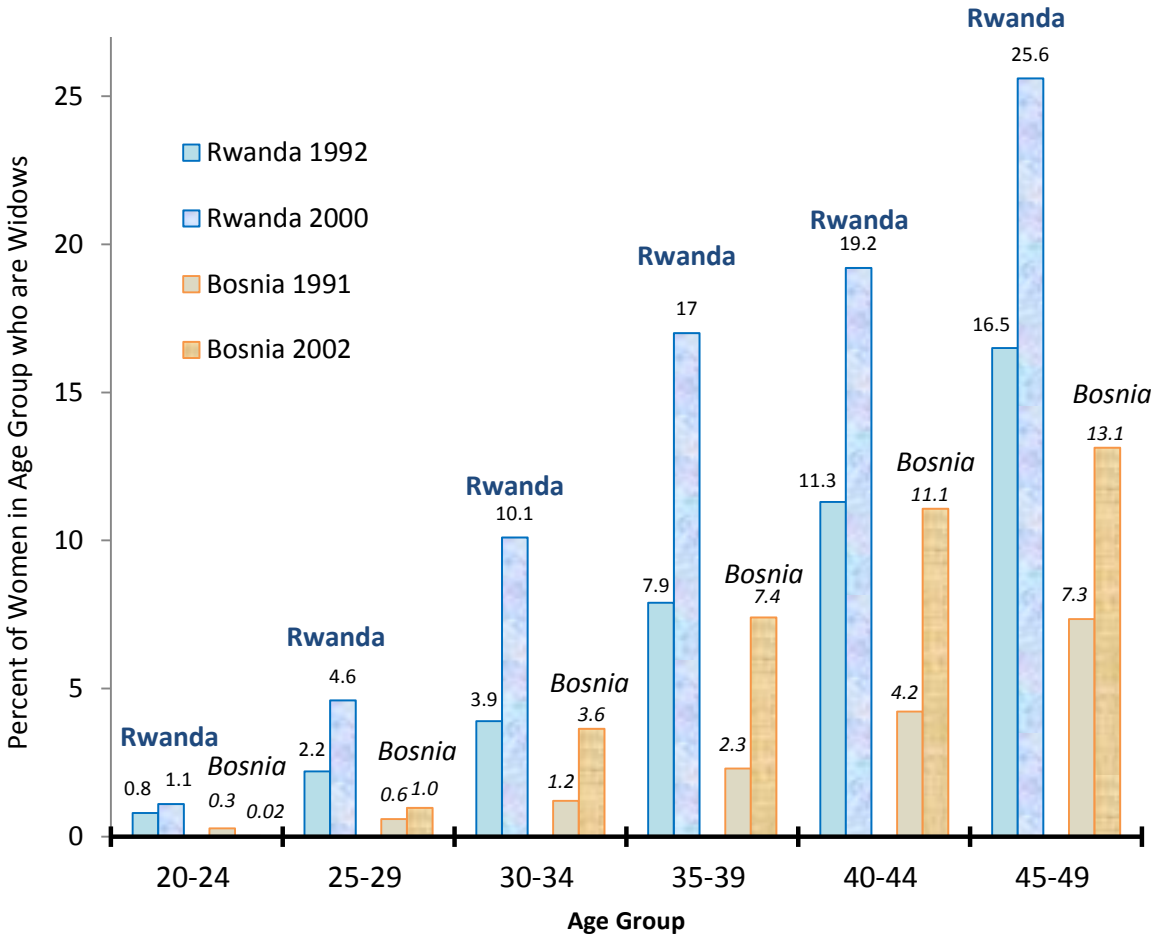
4.6 Widowhood

The quantitative data in this chapter is limited to the timing of first marriage. Extant survey data does not include dates of marital dissolution and remarriage, so it is impossible to distinguish genocide widows from other widows. Therefore widowhood is primarily explored through qualitative and secondary data.

Female widowhood cannot affect the female first marriage rate, but the trends in widowhood and attitudes among widows are nonetheless an important aspect of post-war marital dynamics. When the sex distribution of deaths is dramatically skewed toward marriage-aged men, as it was in Bosnia, there will inevitably be a large population of female widows. In Rwanda, the genocide killed a larger share of the population, but the sex ratio of deaths was more balanced. Here it is difficult to ascertain the effects of differential mortality on widowhood, as many couples likely perished simultaneously. The degree of mortality clustering within families and couples during the Rwandan genocide is difficult to ascertain. Identity cards and population records were often burned in Rwanda, and retrospective reporting of sibling mortality in the DHS requires siblings to have survived in order to report deaths. Certainly there are good reasons to think that violence would be clustered among couples, but this is not always the case.

Figure 4.7 illustrates the differences in female widowhood rates by age of women before and after the war. It shows the proportion of women in each age group that are widows during surveys before and several years after the genocide in each country. While it is unknown how many of these additional women are genocide widows, the dramatic increase in the proportion of widows in both countries suggests that a large number were widowed during the genocide. Additionally, women who remarried before the survey and widows who themselves died in the interim period do not appear in these statistics at all.

Figure 4.7: Female Widowhood Before and After Genocide by Age Group



Sources: Rwandan Demographic and Health Surveys for 1992 and 2000 (Office National de la Population and ORC Macro 1993; 2001), Bosnian Living Standards Measurement Survey (World Bank 2002), and Bosna i Hercegovina Agencija za Statistiku (2008).

One advantage of conducting my own survey is that I was able to ask women more detailed questions about their marital transitions during and after the genocide in each country. Table 4.4 is a marital status transition matrix of my interviewees. In Bosnia, two women who were less than 18 years old when the genocide began in 1992 were married and subsequently widowed over the course of the war. Transitions during the three-year war in Bosnia also indicate economic influences—3 of 5 never-married women had married during the war in Bosnia. In Rwanda, almost half of married women I surveyed in Rwanda became widowed during the genocide. Despite the short time period, 3 of 9 never-married women got married during or immediately after the Rwandan genocide.

Norms on widow remarriage differed dramatically between countries. Muslim women in Bosnia felt it was their duty to remain celibate after genocide (except one woman whose first husband was infertile); whereas in Rwanda even genocide widows who were HIV-positive often remarried. I use insights gleaned from my interviews to explore the data from national surveys and the literature on marital norms in both countries. For example Muslim and Tutsi women expressed an increased desire to marry someone from their own ethnic group after the genocide.

There were some interesting narratives from respondents about widowhood. In general, female widows in Rwanda seemed much more open to remarrying than did widows in Bosnia, despite the seemingly high proportion of Rwandan widows who were HIV-positive. In Bosnia, nearly every widow I interviewed said she was committed to a lifetime of celibacy.

> I lost my husband in the fall of Srebrenica in 1995. July 11. I had big losses. My brother also disappeared. My father, my father-in-law, brother-in-law, all of them.
> <Later in the conversation>
> *If you became pregnant in the next few weeks would it be a big problem, a small problem, or no problem at all?*
> I would never allow myself to become pregnant in the future. That's unwanted. That is how my situation is. I do not have a husband. I did not even have more kids before Srebrenica fell. I cannot even support a baby now. And I do not have a husband anymore. ... I am not interested in getting remarried. That much I am sad because I will stay alone. That's from the bottom of my soul how I feel.
>
> -41-year old Muslim widow, who has been resettled outside Tuzla

The only widow I interviewed in Bosnia who had remarried after the war was a woman who had not had children with her first spouse. She said she felt it was not acceptable to remarry after the war, but did so anyway because she loved her new husband and they wanted to have children together. In Rwanda on the other hand, none of the current or former widows I interviewed stated that they felt a need to be celibate after their husband passed away, unless

they were HIV positive or unless they felt that they already had too many children. For example:

> *And since your husband died, have you had any romantic relationships with other men?*
> No. I cannot.
> *Why not?*
> I am old. If a man comes, I might get more children.
>
> -52-year old Hutu widow in rural central area, has had 9 children, 6 are living at home

Genocide also affected marriages where both partners survived the conflict. In Rwanda several hundred thousand Hutu men suspected of genocide crimes were imprisoned after the war, often for several years, which added strain to or ended their marriages. In Bosnia, the mandatory conscription of men on all sides of the war caused couples to grow together or to become distant. Two respondents in Bosnia were willing to discuss how they felt that they grew apart from their husbands during the war due to the lengthy period of separation. A female dentist in Sarajevo described it to me this way:

> In 1993 he got involved in the Army, after our baby was one year old. And then sometimes he was here and then maybe each three or four months he would go somewhere and spend a month there. He had these [army] shifts. It lasted for two or three years during the war. And then he spent another year away after the war as an engineer on a reconstruction project. As a civilian. When he came back it was not very easy to function together. We eventually separated.
> *How did the war affect your family?*
> Our separation probably had something to do with the war. Our personalities changed because we spent most of the time separated during and after the war. In the end we did not know each other very well. We did not grow together, you know...
> I think those four years probably were determining, were a determinant. He was going his way, and I was going my way, and when the war was over I realized that I survived, that I had gotten used to living without him...
>
> -a 42-year old separated Muslim woman in Sarajevo with two children

In other cases, several respondents in Bosnia described how they felt the war had brought them *closer* to their [prospective] husbands. These narratives were consistent with Bowlby's notion that humans seek intimacy during times of extreme stress. For example, one respondent described how she and her husband began to value each other differently after the war.

Do you think that the war affected your relationship with your husband?
It probably brought us closer.
In what ways?
Before the war, he would go out with his friends, he would go to drink. And then when the war came he would go out to the Army, and then he would come back. We would miss each other, and I guess that made us realize that we were important to each other. We are important to each other.

40-year old Muslim woman with two children

In Rwanda, where the notion of 'love marriage' is much less frequent than in the West, respondents reported very little difference in their relationship with their husbands before and after the genocide, except under the most extreme circumstances.

Table 4.4: Interviewees' Marital Transitions during Genocide

Marital Status transition during Genocide (Matrix)

BOSNIA	Immediately After Genocide			
Pre-Genocide	Never Married	Married	Widowed	TOTAL
Never-Married (over 18)	2	3	0	*5*
Never-Married (under 18)	16	1	2	*19*
Married	0	24	6	*30*
TOTAL	*18*	*28*	*8*	***54***

RWANDA	Immediately After Genocide			
Pre-Genocide	Never Married	Married	Widowed	TOTAL
Never-Married (over 18)	6	3	0	*9*
Never-Married (under 18)	16	0	0	*16*
Married	0	21	17	*38*
TOTAL	*22*	*24*	*17*	***63***

4.7 Causal Analysis

When looking at population-level trends in demographic behavior it is important to consider micro-level processes. At the individual level, the timing of marriage depends on a number of factors, such as educational enrollment, finding a suitable mate, cultural customs, parental preferences and/or permission, and having the economic means to forge a household. This complex process of marital decision-making can be affected in a number of different ways over the course of the genocide, its aftermath, and the years afterward. And while for many reasons we might expect marriage to initially decrease during genocide, there are also important reasons why nuptiality might increase during and after genocide. After all, much of the previous literature on marriage and crisis discussed in Section I found that even when marriage rates initially fell, higher rates afterward more than compensated for the initial decline—however these authors tended to consider remarriage, the date of which is not recorded in the national surveys I use.

I review causality according the four broad groups of factors described in Table 4.1: (1) involuntary factors, (2) material and economic factors, (3) sex and gender role factors, and (4) psychosocial factors. Of course many of these factors are interlinked, so this typology should be considered suggestive rather than strict.

4.7.1 Involuntary Factors

Some portion of the population-level relationship between nuptiality and genocide can be described as involuntary, which is to say that they occur regardless of economics, gender roles, and of trauma experienced by war survivors. To invoke the term 'involuntary' is not to deny the complexity of nuptial decisions at the individual level, rather it is meant to suggest that individual decisions alone cannot often overcome the tendency for: postponement of marriage during crisis, reunion of couples after crisis, and survival bias in nuptial patterns the population level.

The degree to which couples postpone marriage during crisis and marry afterward is of course affected by several factors, including the scale and duration of violence, the cultural norms surrounding marriage, the survival rate, and so forth. Survival bias in nuptial patterns results from the ways in which women who were systematically targeted (i.e. killed or fled permanently) by genocide had different marital proclivities than those who were not, regardless of how survivors themselves were affected by the genocide. Here I discuss postponement, reunion, and survival bias in turn.

Postponement during Crisis

The decline in nuptiality during a time of war is to some extent involuntary, just as it is during historical price and weather shocks and wars. The decision to postpone marriage until after the conflict is over is partly a result of the acute need for safety and shelter, the separation of sexes during wartime, the displacement of families and the loss of family members, but likely

also influenced by uncertainty about the future. These types of themes had to be approached through interviews.

Detail about my interviewees' marital characteristics is shown in Table 4.5. Among my respondents, the conscription of men was near-universal: 84% of married women reported that their husband was in the military during the war. The majority (40 of 54) of my interviewees were displaced by the war, but mostly 'informally', as they went to stay with relatives and/or moved to an unoccupied house. Fourteen of the displaced women officially stayed in displaced person camps. I oversampled seven women who remain displaced even today outside of Tuzla. Some of these women have applied for grants to help them rebuild their original homes; others hope to save up enough money to be able to move elsewhere.

The scale of violence and mortality, the conscription of men, extent of material deprivation, and the level of displacement are all factors that help determine the extent and duration of marital postponement among couples. In areas where local violence is more severe and where men are more heavily conscripted, we would expect to see greater marital postponement. Hardship does not make postponement inevitable, however. The effects of displacement and material deprivation on nuptiality are more ambiguous. As will be discussed in the next section, under severe material deprivation and displacement, 'transactional marriage' may actually be more likely.

Table 4.5: Interviewees' Marital Characteristics[1]

Ever Married?

		Bosnia	Rwanda	Total
no	n	12	10	21
	%	22.22	15.87	
yes	n	42	53	96
	%	77.78	84.13	
Total	n	54	63	117

Current Marital Status

		Bosnia	Rwanda	Total
Never Married	n	11	10	21
	%	20.37	15.87	
Married	n	35	35	70
	%	64.81	55.56	
Separated	n	1	0	1
	%	1.85	0	
Widowed	n	6	18	24
	%	11.11	28.57	
Live-in Partner	n	1	0	1
	%	1.85	0	
Total	n	54	63	117

Lived apart from husband during the war?

		Bosnia	Rwanda	Total
no	n	12	17	29
	%	41.38	51.52	
yes	n	17	16	33
	%	58.62	48.48	
Total		29	33	62

Bosnia: Husband in the military during War?[2]

		Bosnia		Total
no	n	5		5
	%	16.13		
yes	n	26		26
	%	83.87		
Total	n	31		31

1. Some questions did not apply to all respondents.
2. For the most part the husband served on the side of his ethnic group. In two cases of ethnically mixed marriage, however, the husband served on the side of his wife's group (and, importantly, the side of his neighborhood of residence) rather than on the side of his own ethnic group.

Table 4.5, cont'd: Interviewees' Current Marital Characteristics

Rwanda: Husband militarily active during genocide?[3]

			Rwanda	Total
no	n		32	32
	%		72.73	
Perpetrator (convicted)	n		3	3
	%		6.82	
Possible perpetrator	n		8	8
	%		18.18	
Husband was in RPF	n		1	1
	%		2.27	
Total	n		44	44

Did the war change your relationship with your husband?

		Bosnia	Rwanda	Total
it brought us closer	n	6	3	9
	%	50	15.79	
it distanced us	n	1	1	2
	%	8.33	5.26	
no change	n	5	15	20
	%	41.67	78.95	
Total	n	12	19	31

Dating after being Widowed

		Bosnia	Rwanda	Total
never; didn't want	n	4	6	10
	%	57.14	28.57	
never but am open to it	n	1	4	5
	%	14.29	19.05	
yes but never remarried	n	2	8	10
	%	28.57	38.1	
yes; officially remarried	n	0	3	3
	%	0	14.29	
Total	n	7	21	28

3. Unlike in Bosnia, husband's military participation in Rwanda was likely underreported . The three women who admitted that their husbands had been convicted never volunteered this information until asked several questions about time spent apart , and then claimed it was only for looting. In 8 additional cases , based on time spent apart, a description of conditions during the war, and/or the woman's ethnicity and her husband's continued presence in the Congo (where many Interahamwe have been based after 1994), my translator and I determined that it was "probable" that her husband had participated, though we cannot be certain.

Displacement may separate couples but it can also bring new couples together, particularly among those displaced in collective housing such as refugee and IDP camps. I have not been able to find any statistics, but I have visited refugee and displaced-person camps and talked with directors and with people who live there enough to get the strong sense that these camps are often places where new couples meet, informally marry, have children, etc. Some respondents who had been displaced also reported meeting their husbands in collective housing. Smedt (1998) reports anecdotal evidence of an increase in child marriages in Rwandan refugee camps, but this was more observational than statistical. It is difficult to access any quantitative or observational data on new marriages in refugee and IDP camps. Pregnancies are better-documented, but sometimes not centrally recorded, particularly during wartime emergency conditions.

There is frequently insecurity about food, water, shelter, and safety during genocide, but perhaps just as importantly for civilians near war zones there is also a loss of freedom; loss of ability to socially associate with friends, relatives, and neighbors (unless a group is hiding or seeking shelter together, in which case there may have been the opposite problem: forced association). For example, one of the clusters selected through the multi-stage sampling process for my survey was in Sarajevo's densely-populated Bistrik district, a neighborhood which was targeted by tank shells, heavy artillery, and even oil barrels filled with explosives rolled down from the mountains during the siege of Sarajevo (Burns 1993). As in most Sarajevan neighborhoods, all men who lived there and not disabled, elderly, or severely ill were conscripted to defend it, while women and children frequently stayed indoors and away from windows as much as possible to minimize risk of being killed or injured. One respondent from the Bistrik district described her wartime experience to me this way:

> Here it was very bad during the war. The hills above us were occupied by Chetniks [Serb troops]. They were killing civilians. When you would go to get water, they would kill like 50 people. It was very bad for us during the war. Because above all we did not have freedom. Kids could not go out and have fun, nor could adults... And our house was destroyed.
> -49-year old Muslim woman from Sarajevo, married with two grown sons

This respondent's recollection of the war is interesting because she spoke about the conditions with some specificity and yet did not mention the obvious lack of food and water during the war except in reference to having to go out to collect water. The destruction of her home was also an afterthought to her description of life in a city under siege. Instead she mourns her loss of freedom. Indeed, restrictions on movement during the three-year siege of Sarajevo were tremendous. It was frequently dangerous to go outside, thereby exposing oneself to attack, yet given some of the weapons used (heavy tank artillery and grenades), and the intermittent power during wintertime, staying indoors was no guarantee of safety either. After the war, this respondent and her husband, like many other Bosnian families, ultimately had to rebuild their home at their own expense.

During wartime, the separation of men (battlefield) and women (home front) tends to decrease marriages. In Bosnia women reported that their husbands or sons generally remained near home during combat. Due to the intensity and organization of these local death squads during the genocide, it was not always possible or even advisable for Tutsi couples to flee together. Sometimes this meant that the couple was separated temporarily, other times it meant that they were apart for years at a time. One respondent in southern Rwanda who ended up postponing her marriage for years because she and her husband were separated during the genocide recalled it this way:

> During the war I stayed here, but the people who were hunted fled, my fiancé among them. And he kept fleeing.
> *Why did you stay here while your fiancé fled?*
> My husband [former fiancé] is mixed. His father was Tutsi, and his mother was Hutu, so technically he is Tutsi. I am also mixed, but my father was Hutu and my mother was Tutsi, so technically I am a Hutu. When the genocide started everyone ran for their own lives and I feared to follow my fiancé because I heard that they were killing people who were trying to escape. I look like a Tutsi and they told me that if I escaped the Interahamwe would kill me.[43] So I stayed here but I hid myself.
> *How did you manage to hide?*
> We hid ourselves in sorghum and potato fields. The technique was to hide ourselves from where people had just fled or were being chased. We did that over and over again, up until people told us that the war had ended then we stopped hiding from the fields. We were just hiding ourselves. We did not care about who was hunting whom. We were just trying to avoid the shooting.
> *For how many months did you hide?*
> About three or four months
> *Did you hide with other people?*
> Yes. There were people from every corner, just hiding together… When my husband was fleeing, he heard the news that I was killed. And he kept fleeing. He stayed in Burundi for quite some time [two years]. But when he heard the proof that I am still alive, he came back to marry me.
>
> -35-year old Hutu woman from Nyamata

[43] This respondent feared them even though she is technically Hutu, (as when I asked most other Hutu women whether they were scared during the genocide they would say no), but based on the genocide accounts I've read, if it was known that a Hutu was married to a Tutsi s/he would frequently be killed, and sometimes if a person looked Tutsi they would assume a Hutu identity card had been forged.

As discussed in the background chapter, one unusual aspect of the Rwandan genocide is that the largest group of refugees were Hutus, i.e. members of the 'perpetrator group,' who often fled to the Congo fearing persecution and prosecution for their alleged crimes when it became clear that the RPF would defeat the FAR and the Interahamwe. Hundreds of thousands of Hutus fled to the Congo during the French-led *Operation Turquoise*. It is rare—and certainly not politically correct—to hear about hardships endured by Hutu refugees during the genocide. There are few accounts in the literature of 'ordinary' experiences of Hutu women whose husbands may have been involved in the genocide.

In general, both Hutus and Tutsis seemed to go to refugee camps as entire families, even under difficult circumstances, but it is still difficult to know how this would have affected unwed couples from separate families. Hutu women whose husbands or fathers were génocidaires frequently stayed at home during the genocide. The two major exceptions to this trend were: (1) women whose husbands were actively involved in the genocide, so much so that they permanently fled to the Congo afterward. I interviewed at least three Hutu women who reported their husbands/boyfriends as 'missing,' one of whom refused to have her interview recorded, and my translator afterward would suggest that these women's husbands/boyfriends were likely génocidaires who had fled to the Congo; and (2) Hutu women whose husbands were imprisoned after the genocide for war crimes, often for up to a decade. I interviewed at least two Hutu women whose husbands had been imprisoned for almost a decade for genocide crimes. Both talked about the extreme hardship of having their husbands in prison, particularly because (unlike widows) they were expected to bring him food frequently and were at times unable to negotiate with his family to stay on his land while he was in prison. Around 120,000 men and 3,000 women[44] were imprisoned for war crimes even eight years after the genocide (Itano 2002). Most any open land holdings such as farmland get taken over by relatives during prison times—women who were married to men who had been in prison told me they often had to struggle to keep control over their land when their in-laws claimed it.

Reunion after Crisis

A bust-boom cycle has been typical of crisis nuptiality with a few exceptions discussed above, and we expect a bust-boom cycle to be the case after genocide ends as well. Unwed couples may reunite and marry in the wake of war, and even new couples may quickly form and marry. However, unlike the familiar case of the marriage boom in the United States after GIs returned from World War II, there is unlikely to be an "official" end to a civil war, much less a genocide. For example, after the Bosnian Dayton accords were officially signed in December of 1995, it took several months for military hardware to be withdrawn by both sides and freedom

[44] Rwanda is considered a unique genocide in many ways, not least of which is the fact that there were identifiable number of women participants, some of whom are alleged to have helped plan the most horrific crimes of sexual violence against Tutsi women (Jones 2002a; Jones 2004).

of movement restored, and far longer for any semblance of economic recovery or reintegration of the displaced. With a significant portion of the population uprooted during the genocide and the fragility of peace obtained by the Accords in Bosnia (after all, several peace treaties had been signed during the war and summarily broken), there was no quick recovery afterward. Even today a small proportion of the population in Bosnia is internally displaced.

In Rwanda the situation was a bit different. By July of 1994, most Hutus—especially those with military connections—had fled urban centers and gone to the Congo or Burundi. The RPF took control of Kigali and, based on personal accounts, it seems to have been relatively clear that the genocide was finished. Even so, there was tension between the Tutsis who emerged from hiding and those that had fled. Respondents discussed the suspicion of those who survived in hiding, perhaps they had survived by collaborating with the enemy. There was additional tension once one million former Tutsi exiles who had lived and born families in neighboring countries returned to Rwanda (Newbury 2005). These exiles had not experienced the violence and were often favored for positions in the new RPF-dominated government. One respondent described the difficulty of this initial postwar period in terms of her decision to postpone marriage:

> We married in February of 1995. I had known him for a year by then. I was 22 years old.
> *Was the marriage delayed because of the war?*
> Before then it was not the right time for me to get married because my parents still needed me at home to help them with home activities. I was the only [surviving] girl in my family.
>
> -35-year old Hutu woman in rural Gisenyi

In her case she still married her original partner, but some unwed couples may have remained separated for long periods of time due to familial displacement, or may reunite but decide not to marry even if they both survive the genocide. Nonetheless, in Rwanda marriage rates in late 1994 and throughout 1995 (at least from retrospective reports shown in Figure 4.2) were nearly double what they were prior to the genocide, an increase made more surprising by the higher number of deaths among young men as will be discussed in the next section. Admittedly some of this may be due to date heaping—over 10% of dates of first marriage were imputed in the Rwandan DHS, but the number of dates of first marriage imputed to 1994 was not much higher than those imputed during surrounding years.[45]

In Bosnia the 'post-war marriage boom' seems to have been supplanted by a 'post-battle marriage boom.' Given that the war lasted for more than three and half years, perhaps this

[45] Only 86 women from across both surveys had dates of first marriage imputed to 1994, and of those only 21 were imputed into a date between April 1994 and June 1994.

should not be surprising. Judging from Figure 4.3, marriages peaked in 1993 and in 1995 but not in 1996 after the war ended.

Figure 4.1 indicates evidence of a small post-war marriage boom, but even there it is clear that marriages in Bosnia ever recovered to their pre-war level. And given the large proportion of the population who register marriages in Bosnia, the post-war marriage blip could easily be attributed to a delay in registration, as at least one of my respondents experienced (i.e. she and her husband started cohabiting during the war and filed the paperwork afterward).

Survival Bias

The term 'survival bias 'refers to the fact that those who survived the war may have had different nuptial proclivities than those who did not. Simply by virtue of these pre-existing marital tendencies -- and not of any particular changes in behavior after the war -- we would therefore expect postwar nuptial rates to be different. In Bosnia, most women survived the war and there was not enough of a difference between prewar ethnic marital patterns for 'survival bias' to be an important issue. In Rwanda, however, there was a 2-year difference between Hutus and Tutsis in average age at first marriage in 1992 (Office National de la Population [Rwanda] and ORC Macro 1993), and a large portion of Tutsi women died during the genocide. Hence this section focuses only on survival bias in Rwanda.

One recent study on Rwandan mortality uses age at first marriage as an indicator of 'Tutsiness' in the DHS that it posits was unlikely to be correlated with the risk of dying during the genocide (De Walque and Verwimp 2009). While it is true that Tutsi women tended to marry at later ages than Hutu women, it does not necessarily follow that a woman's age at first marriage is itself a good predictor of ethnicity.[46] Additionally, there very well could be a difference in survival rates among women by their age at first marriage—women with very young children, for example, had a more difficult time fleeing and hiding.

Overall in the DHS, the omission of the variable about whether women grew up abroad makes it difficult to gauge the effect of exposure to genocide on nuptial patterns, particularly in a patrilocal culture, where recently arriving in the community after the genocide may also signal having recently married. And in the questionnaire, no adjustments were made to the 'how long have you lived here continuously' question to clarify whether former refugees should count their time away or not. In my experience, Rwandan respondents would often say they

[46] For example, in the 1992 DHS, the weighted odds that any given married woman was Tutsi were 11 to 1, while the odds that a woman who *married at age 21 or over* was Tutsi were 7 to 1. While the odds I state do not account for the fact that the authors were controlling for other factors, it seems problematic that the sample size of Tutsi women with a valid age at first marriage in 1992 was only 384 compared to 3,957 for Hutu women.

had always lived in their house even if they fled as refugees during the genocide, until they were specifically asked about displacement experiences.

Since high socioeconomic status, regardless of ethnicity, was also correlated with dying during the Rwandan genocide (De Walque and Verwimp 2009)—as in most genocides, the intelligentsia and more liberal/moderate members of the perpetrator group were targeted—and at least one-tenth of women are estimated to have been killed, disappeared, or permanently left the country during the Rwandan genocide, the effects of survival bias on nuptial patterns could be important. There was a clear drop in average age at first marriage that occurred during and after the genocide as shown in Figure 4.4. However, we cannot discount the fact that like Shemyakina found in Tajikistan, young women also 'flooded' the marriage market to capitalize on their youth when it was clear that the sex ratio was unbalanced. Given the high rate of female mortality in Rwanda, survival effects may be particularly important there and are difficult to capture accurately given lack of data. In Bosnia a much smaller proportion of women perished during the war, hence survival effects are unlikely to be significant.

4.7.2 Material and Economic Factors

In Bosnia and Rwanda, almost everyone suffered immediate material and economic losses leading up to and during the war. By causing nearby residents to flee or hide, armed conflict almost instantly reduces access to food, water, and shelter for local civilians. During periods of intense fighting, nearly all shops and banks were closed; it often became dangerous to access food storages or fetch water; many were forced to flee their homes; and infrastructure was destroyed. While a few combatants may have benefited from wartime looting— such gains are particularly well-documented in Rwanda (Straus 2006)—in general these gains were not widely distributed, even to families at home. In Bosnia, the collapse of socialism was virtually concurrent with the war, and privatization of businesses and enterprises meant an initial loss for almost everyone.

As Table 4.1 outlined, there are several ways in which the material and economic effects of war and genocide might change marital patterns. During the war, heavy losses of life and property might lead to postponement of previously planned marriages, but can also increase the potential economic gains to marriage, or what I have called "transactional marriage." The interruption in schooling might induce some students to permanently drop out after the war, leading to earlier marriages. But at the same time, high levels of postwar unemployment might reduce the pool of viable male partners (and, in particular, partners who can pay a 'bride price') and damage to infrastructure caused by the war might impair household formation. In long-term if there is substantial economic recovery we might expect to see a sustained increase in marriage, depending on the stage of the demographic transition, but without economic recovery there might also be a decline in overall rates of marriage. Overall, we might expect two effects: *Increased* marriage rates due to economic pressures on transactional marriage: destruction of housing infrastructure makes shelter more difficult to find, the benefits derived from household economies of scale are more appealing during times of economic hardship; but *decreased* marriage rates because the devastating economic losses suffered during genocide and

the high rates of [male] unemployment reduce the viability of union formation during and after war. The following three sections explore transactional marriage during wartime, long-term patterns in employment and income, and the effects of educational disruption on marriage rates in both countries.

Transactional Marriage during War

While the literature on sexual violence and economic strain during crisis will occasionally refer to 'transactional sex', it rarely talks about 'transactional marriage.'[47] And yet this was likely a fairly common phenomenon during the Bosnian and Rwandan genocides, particularly where marriage and love are seen as having little to do with one another. This is not to imply that economic gain would be the *only* motivation for marriage; in many cases it is only one among a set of factors in deciding whether to marry. But under desperate circumstances the economic gains to marriage can be a primary incentive.

In Rwanda, as in Bosnia, many on both sides of the conflict lost possessions and incurred damage to their property during the genocide. In Bosnia, an estimated 60% of the housing stock was damaged or destroyed altogether during the war (Black 2001). In Rwanda it is more difficult to gauge how many or how much people lost because the population is close to subsistence and building materials vary so widely between rural and urban areas. One longitudinal study of economic losses in a Rwandan district found that with the exception of families who had suffered a death during the genocide or imprisonment afterward, the net effect of being a refugee or damage to one's home was not substantial over the long-term (Verpoorten and Berlage 2007).

For some women in Bosnia and Rwanda, marriage and childbearing were "rational" ways to help themselves survive the war and economic crisis. Marriage brought a [potential] provider, and if they were refugees, having a husband and a baby often earned them separate housing and additional food within the camps. One respondent from Srebrenica explained her decision to marry early on during the war in this way:

> I got married [in Srebrenica during the war when I was 15] mostly because of the food. I did not have anything to eat. My father was stuck in Ružica, and I was alone [sighs]. I knew my husband for six months before we got married. I became pregnant very quickly, but I had a stillbirth through a cesarean. Probably because I did not have anything to eat and I was hungry all the time. And then my husband died when Srebrenica fell [in 1995]. When I came here to the refugee housing I was in my seventh month of pregnancy... We had my husband's funeral three years ago [in 2004, when

[47] There is a fair amount of literature documenting the fact that "love marriages" are not very common outside of the developed countries, however.

> they identified his body in a mass grave]... And now I'm almost 30. I do not know if I will ever find another husband or boyfriend.
>
> -29-year old Srebrenica widow [R109]

This is one version of an explanation for marrying during the war that I heard a few times, particularly among widows of the Srebrenica massacre. To varying degrees, the economics of marriage were very important to women who had lost or were separated from their family, especially their male breadwinner. Yet to call it 'transactional marriage' does not mean that the transaction is taken lightly by any means. The woman above had remained celibate for nine years after the presumed death of her husband and still continues to remain so.

A similar theme of transactional marriage was echoed in Rwandan interviews, though often indirectly. Here is the case of a woman who—after what she went through—probably had no desire to get married after the war. She was a 15-year old virgin living at home with her family when the genocide began in April of 1994.

> We just fled. A big group of us. People were killed as we were advancing toward Burundi and when we arrived in Burundi only four of [my siblings] had survived. The other four were killed on the way to Burundi. I was wounded, I was shot. I was shot in the arm. I lost so much blood. And I was unconscious. I cannot know how many people raped me. I only know I felt some pain, and I do not know exactly how it happened, we were with other people. We were smashed somehow, and I fell down. But when I woke up, I was alone, and damaged. I did not ask the way because I could easily see where others had passed, I just followed the blood. Then I discovered myself in Burundi. I was just surprised to find myself in another country... I was taken to the hospital. I spent one month there, and when I got better, I joined other people in a camp. I stayed there for two months. I was not able to go back to Rwanda in July when other people were coming back. I just stayed there. Because I was not able to put on pants, just a skirt. I had an infection.[48] When I came back to Rwanda there was one [surviving] relative, my aunt, who was in Kigali, and she asked us to come and join her there. My sister said she could not go to Kigali and live there, just live by begging, but I said me, I am completely broken, I must get to Kigali. I stayed there until 1995. Then in December 1995 I got married.
> *How did you meet your husband?*

[48] Due to the rape.

> At church. At first it was just by visiting people, and I discovered my husband while out. People introduced us. In this way my family connected me to my new husband.
> *Was it important to you that you marry a Tutsi[49] after what happened?*
> There were no Hutus in Kigali at that time (laughs). Even if there were some, I would prefer not to have a Hutu. It was not possible for a Hutu to marry me.
> *Did you have any other boyfriends before you married your husband?*
> I was not willing to have boyfriends because I was somehow disgusted by men. I do not even know how I live with this guy [my husband]. Sometimes I just don't understand how I manage to live with him. I am simply just disgusted.
>
> -26-year old HIV-positive respondent from Kigali, mother of four

This respondent almost surely married at 16 because she had lost her family and had few means to support herself. Her recollection of 'not being able to wear pants for a month' is most likely a reference to a vaginal injury sustained during rape and the resulting infection. During the genocide, Rwandan women were often raped with weapons, such as sticks, knives, machetes, and even pistols (Nowrojee 1996). While I did not pry into the details of her injuries, it seems evident that given this type of injury, not to mention the trauma of having been raped, she would have been unlikely to begin a sexual relationship with a man if her need for food and shelter had not been so great. She even said that she was 'not willing to have other boyfriends' before she met her husband because of her disgust with men.

Another Rwandan respondent who was also a genocide orphan described how her family had essentially arranged for her to marry another genocide orphan, and she managed to do so within a few weeks of meeting him. She did not have any type of ceremony at all.

> I grew up with seven siblings, but now there are only four today. Three died in 1994 [along with our parents.] During the genocide we were all at home together. The Interahamwe came to kill us at home.... One Interahamwe came with a knife with blood and stabbed me with it, and then I was raped. Now my husband and I are sick. We have HIV.
> *Did you have any boyfriends before the genocide?*
> No. I was very strict. I was a virgin. I was my mother's daughter, and I had never slept with any man until the Interahamwe came and raped me

[49] It is illegal to ask about ethnic identity in Rwanda, but if respondents raised the issue first I would sometimes follow up. In this case the respondent had discussed prewar educational discrimination against her because she is Tutsi.

during the genocide. So I do not know if HIV is from the knife they used or if it was from when they raped me.
How long did you know your husband before you got married?
Not much. Maybe one month. Just a few weeks. When the war was over I came here to work in Bugesera and to find part of my family that had survived. And that is where I met my husband. It was a kind of arranged marriage between the two families because the guy's relatives were also killed in the genocide. His family was here in Bugesera, and was left alone. It started like that. The marriage between the two of us was made possible because they said that we were left alone so we should get married they told us we were both orphans we just had each other so it had really been planned... It was not really a wedding. I just left my siblings and went to live with my husband.

-37-year old Tutsi woman, married after genocide, has had three children

The tendency to marry very quickly to a partner in the wake of wartime trauma is actually reminiscent of Displaced Person camps which housed concentration camp survivors in the wake of the Holocaust. Reportedly there were numerous marriages which took places during the weeks after liberation and matches were made with seemingly little regard to background of partners. "To marry and raise a family as fast as possible was an overriding desire among both male and female Holocaust survivors, many of whom had seen their entire family perish during the war" (Baumel 1997: 102).

Bridewealth is customary among Rwandans (Adekunle 2007) and among Bosnian Muslims (Bringa 1995), at least traditionally, though particularly in Bosnia my respondents indicated that it is not commonly practiced today. In Rwanda the custom is frequently for the father of the groom to give a cow to the father of the bride; the cow is returned in case of divorce (Adekunle 2007). Given how few rural Rwandan families own livestock this custom may also be outdated. Nonetheless, in the interviews I conducted, the inability to afford marriage was often cited by respondents in Bosnia as a reason why they had not yet married. Women did not seem to be referring to the cost of a ceremony so much as the general difficulty of being able to afford a life together in an economy with high unemployment and low wages.

One study from Zimbabwe, a culture which observes the custom of bridewealth, found that women were more likely to be married after their household experienced a negative shock like a death in the family or a drought in their area. The authors hypothesized that for families at the edge of subsistence, young unwed daughters were in some sense like assets that the family was 'cashing in' during times of hardship (Hoogeveen, Van der Klaauw and Van Lomwel 2003). It is possible that this phenomenon could help explain an increase in marriages immediately following the Rwandan genocide, but the economic devastation of war makes it unlikely.

Long-Term Employment and Income

> My son is unemployed and so he cannot get married. Without a job love dies.
>
> - 55-year old Muslim woman in Sarajevo, discussing her 28-year old son

Long term patterns of income and employment are also important determinants of marriage. In Western countries, for example, Oppenheimer (1988) asserts that the timing of the transition to economic independence is a major driver of the age at first marriage, because partners want to be relatively certain about the future socioeconomic characteristics of their mate. She argues that women's labor force participation is not the major reason for later age at marriage in Western countries; rather it is the instability of the timing of economic independence of young adults. As discussed in the last section, delayed economic independence likely helps to explain the decade-long drop in the marriage rate in Bosnia after the war. In Bosnia, unemployment remains significantly high[50] and per capita GDP is still below its prewar levels. Even twelve years after the war officially ended, most respondents felt their standard of living was well below the pre-war era, and unemployment remains significant. Hence it seems reasonable to expect that some of the same mechanisms would be at work in Bosnia.

It is also important to consider notions of relative deprivation, as developed by Easterlin (1975): children often want to be able to do at least as well as their parents, if not better. Yet in an era of privatization and massive loss of income, this is impossible for the majority of the population. In Bosnia, half of my respondents (27 of 54) said that their standard of living was better when they were growing up than it is now. Around a third (19 of 54) said that their standard of living is better now, while the rest were unsure or felt that it was about the same.[51] On average, respondents who said that their standard of living was better growing up were significantly older than respondents who said their standard of living is better now (mean age 42.2 ± 1.7 compared to mean age 34.3 ± 2.5); a paired t-test revealed that this age difference is statistically significant at $p < .05$. While women in their mid-40s generally tend to have a higher standard of living than women in their mid-30s, the age difference in reports about the standard of living also makes sense in terms of Yugoslav history. Prior to the death of Tito in 1980, Yugoslavs enjoyed a decent standard of living, good benefits, and culturally thought of themselves as Western Europeans (Glenny 1996). In comparison, Bosnian women who were

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[50] Estimates of current unemployment vary quite widely depending on the definition used. The World Bank LSMS found that around one-fifth of the adult working-age population was unemployed (excluding students, disabled, pensioners), but this number doubles if 'housewives' are included. I found that many previously-employed women preferred to classify themselves as a housewife rather than as 'unemployed,' so it is possible unemployment could be as high as thirty percent <many are chronic, long-term>.

[51] 73% of my Rwandan sample said that life was better in the past than now.

young when the war began often talked about a "loss of childhood." For example, a young Muslim woman who was six years old when the war began described it this way.

> My standard of living is better now. For my child it is better too. Because there was war back when I was a kid. And just because there was war, I had no conditions for living at all.
>
> -21-year old married Muslim woman with one child

Her statement might otherwise seem unremarkable except for the fact that her family's house was destroyed during the war and until now has never been rebuilt. She currently lives in temporary IDP housing outside Tuzla, as she has for most of her life. Even so, life now seems much better than it was when she was growing up. But for other Bosnian respondents it has been harder to make ends meet after the war, even without extensive wartime damage or losses:

> *Looking back over your life, would you say that your current standard of living now is better or worse than when you were growing up?*
> It was better before the war. My husband was the only one working and getting a paycheck, I did not work. And now we both have to work to be able to afford anything.
>
> -48-year-old Muslim woman with two children

Many young families in Bosnia still live with parents and/or in multi-generational households, particularly in the wake of enormous damage to household infrastructure during the war. Traditionally Bosnian extended families lived together, but as in many parts of the world, industrialization tended to usher in smaller family sizes. Respondents reported that prices of goods have increased dramatically since the end of the socialist era, while salaries have tended to stay the same:

> My standard of living was better when I was a kid...Wages in companies are now guaranteed. But we have European prices. Prices of everything have gone up, and the wages are still the same as before.
>
> -40-year old Muslim woman with two children

Unfortunately there are no readily available datasets of inflation, prices, GDP per capita, and other economic indicators that include pre-war and post-war data. Some of the evidence that exists is limited to the Federation only.[52] Still, comparable data on labor force participation

[52] For example, the Federation publishes statistical yearbooks and has included some pre-war numbers, but these were not comparable as the pre-war figures are for the whole of the country, and have not been adjusted for inflation.

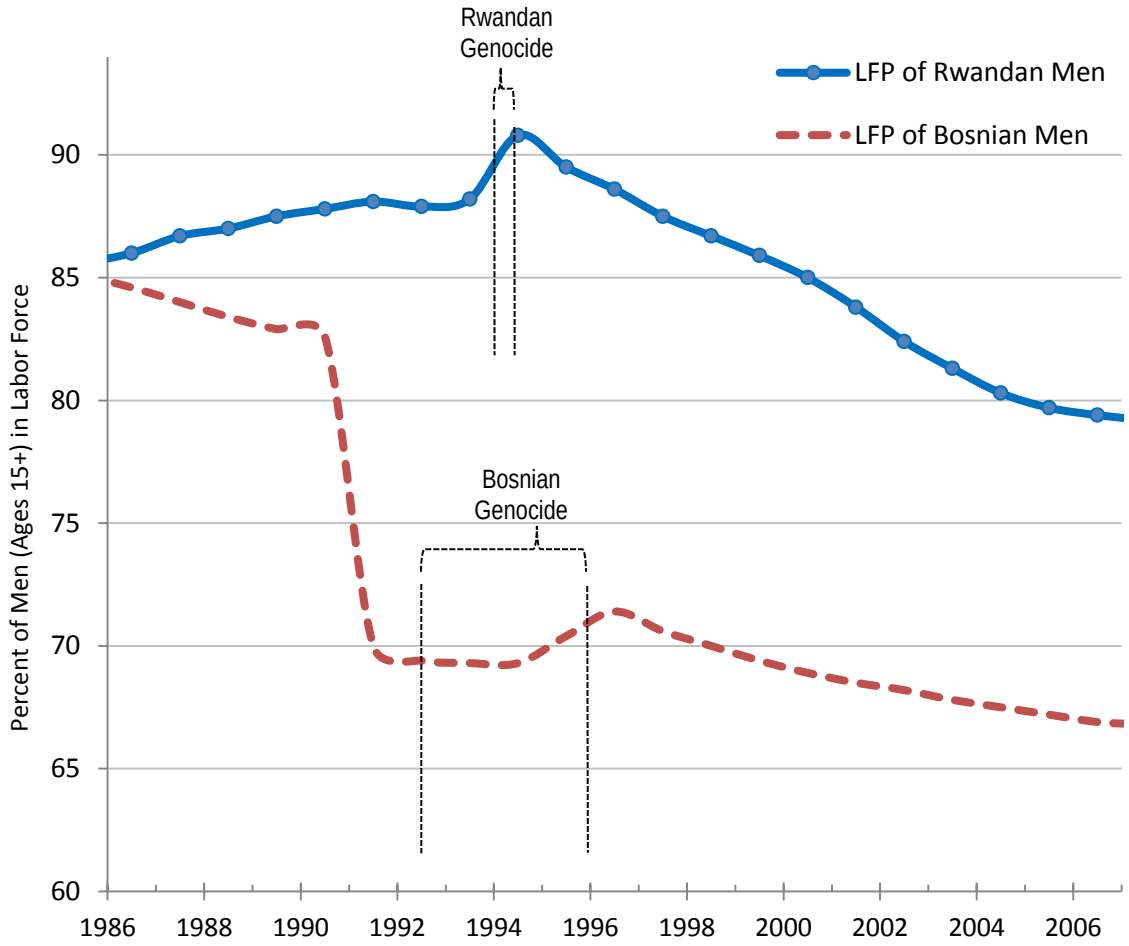
and employment exists, and as Figure 4.8 illustrates, it is clear that the lack of employment in Bosnia remains a problem.

The ability to find some type of work in Rwanda, even if less than ideal, may help explain why marriage did not decrease during the war or the economic crisis in 1990: in Bosnia expectations of standard of living (compared to growing up) are high and barriers to entering labor market are also high, while in Rwanda it is possible to find some sort of opportunity, even if it pays little. Moreover, labor force participation is—at least in Bosnia—a misleading term because of the extent to which Bosnian state-run companies kept workers 'in waiting' during their move to privatization:

> After high school I went to the Employment Bureau to find work and I was searching for 3 months. Then I got a job at a public firm in the meat industry doing accounting. ... It is hard to believe that we will ever have that type of [employment] situation again. I had a good salary and a nice life. It was all okay and now it is all bad.
> *How long did you work as an accountant?*
> I worked for 25 or 26 years. I was "in waiting" for a long time. This was right before and after the war when companies retained staff without pay because they were not sure they would still be in business after the economic crisis. While I was "in waiting" the company did not pay me or my benefits. So now I cannot retire because I do not have enough years of work to earn a pension. I worked for a little bit, and now I am registered at the bureau for unemployment.
> *Did you not work again until after the war?*
> I worked for a while in 1994, for a while in 1999, and then 2000. They did not pay us for it. The company went out of business. Our politicians took it away, destroyed the business. Some wanted to make it private, some of them did not want to make it private.
> *So is it correct to say that from 1992 to 1999 you were not working?*
> For just a little bit. I went from time to time, and they wouldn't pay for the benefits. They registered me as working, but they did not pay for my benefits or give us paychecks.
>
> -49-year old married woman from Bistrik (Sarajevo)

According to the Bosnian LSMS, which keeps much more extensive records of retrospective employment history than any other extant sources, less than one-third of women surveyed were in the labor force at the time of the survey (2002). Almost one-fifth of women's husbands were unemployed or incapable of working, which places enormous economic stress on households.

Figure 4.8: Men's Labor Force Participation, Bosnia and Rwanda, 1985 - 2007[1]



Source: World Bank's *World Development Indicators* (2009).
Note: "In Labor Force" includes unemployed, part-time, full-time, and self-employed civilians.

Education

War disrupts schooling and may induce many young adults to permanently drop out of school rather than return after the war is finished. Some of the reasons why students would drop out of school after the war is because of a need to provide for their families, the fact that they may be too traumatized to function well in school (several respondents in Rwanda cited this as a reason why their child dropped out), and /or may find themselves in an inhospitable social environment.[53] An increased dropout rate in turn tends to lead to earlier marriage among women who may have otherwise postponed marriage until they completed their education.

A study has shown that the Rwandan genocide disrupted schooling among youth (Akresh and de Walque 2008), though in Bosnia there was no clear effect (Swee 2008). This difference is particularly interesting because the Rwandan genocide was relatively short-lived compared to the Bosnian war. The difference may be the result of school fees imposed during the World Bank 'austerity measures' in Rwanda during the late 1980s that pose an enormous barrier to school enrollment among the poor (Chossudovsky 1996b). In Rwanda—and in two cases in Bosnia—women reported that their schooling had ceased during the war because they were displaced for a long time or because they could no longer afford school fees. I suspect that at a national level, at least in Rwanda, dropping out of school prior to and during the genocide likely contributed to the earlier age at first marriage among teenagers. Unfortunately, it is not possible to control for reverse causation (pregnancy inducing school dropout) using the national dataset, so the relationship between cessation of school during genocide and early pregnancy can only be confirmed on a qualitative level.

4.7.3 Sex Ratio and Gender Roles

It would be impossible to talk about marriage without discussing sex ratio and gender roles. The disproportionately high share of male casualties during wartime may have caused a short-term increase in marriages as women seek husbands due to the loss of male relatives, followed by a long-term decrease in marriage rates because there are not enough men to monogamously marry all available women, unless age differences between brides and grooms change.

Bosnia had a high proportion of male casualties (approximately 74% of the civilian total, or around 75,000 men plus another 99% of military total, around 55,000 men),[54] but if marriages had remained after 1991 level throughout the war I calculate that despite the population

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[53] For example, Bosnian Muslims from Srebrenica, who now reside in IDP camps often told me that one major reason for not moving back is that their community is now a part of Republika Srpska. They were unwilling to send their children to schools due to the fear that genocide perpetrators would be lauded as war heroes in history classes.

[54] Among "direct" war casualties, while the sex ratio among "indirect" casualties (those who starved, were ill, and so forth) was likely much more balanced.

decrease there should have been approximately 95,000 additional marriages compared to what was reported in the vital registration data. Since a good portion of the male victims were either already married or too young to be married, there were obviously additional factors driving the decline in marriages, but no clear evidence of postponement (like a sustained increase after war).

A few older unmarried women expressed pessimism about whether they would ever find a suitable partner—particularly since many of their male counterparts were veterans who tended to be emotionally unstable and/or abusive—but all unmarried Bosnian women I interviewed expressed a strong desire to marry in the next few years (or after they finished school).

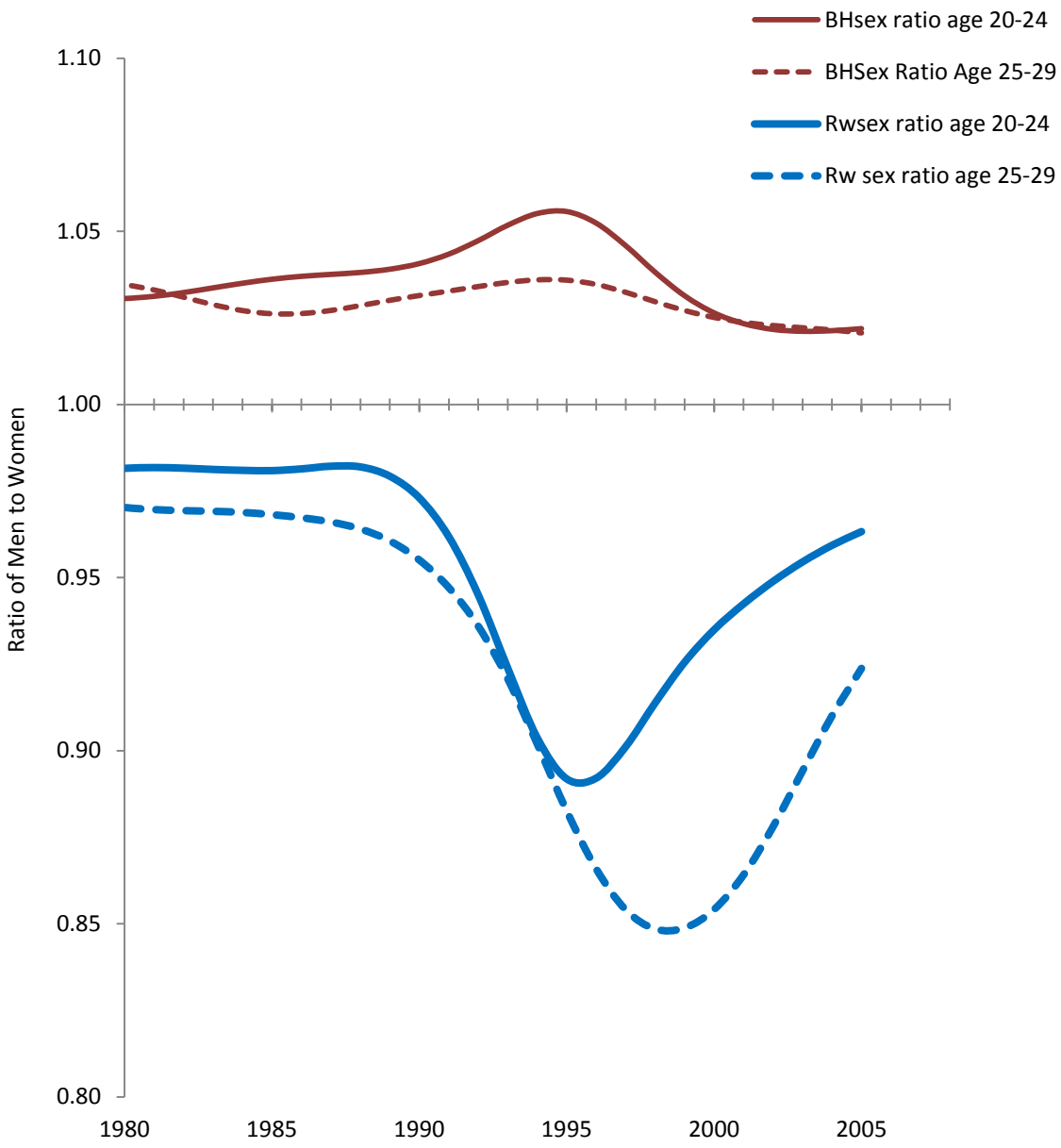
Sex Ratio of Casualties

During the genocidal campaigns in Bosnia and Rwanda, as in other wars and genocides, 'battle-aged' males were a major target: in Srebrenica, for example, men and boys who appeared to be older than 12 were systematically separated from women and children and executed (Honig and Both 1997). In Rwanda killing ideology was more "gender-neutral" than in Bosnia: Génocidaires proclaimed that Tutsi women and children must also be killed, lest they go on to produce more enemies, "more Kagames."[55] (Straus 2006) In both countries, the disproportionate loss of working age men has not only had tremendous social and psychological ramifications, but also devastating economic repercussions for widows, orphans, and other kin, and cascading consequences on the 'marriage market' as a whole.

In Bosnia a recent study has found that 76% of civilian casualties were male (Research and Documentation Center 2007). Only 10% of the victims of Srebrenica were women, children, or elderly (Brunborg, Lyngstad and Urdal 2003). In Rwanda, there are few statistics on the sex ratio of civilian casualties but the low post-war sex ratio itself has been well-documented (Office National de la Population [Rwanda] and ORC Macro 2001; Rwandaise Service National de Recensement 2005). Bosnian casualties were disproportionately male, but a much smaller portion of the original population than in Rwanda. In Rwanda sex ratio is extremely unbalanced between districts. Rural areas tend to have very few men, while urban areas have high male-to-female ratios. Figure 4.9 shows the sex ratio among young adults in Rwandan districts by urban or rural status and by their population size.

[55] A reference to Rwandan Patriotic Front leader (and current Rwandan president) Paul Kagame, who was born in exile to parents that fled the 1959 genocide. Hutus also invoked the euphemism of cockroach extermination to implore the killing of Tutsi women and children.

Figure 4.9: Sex Ratio of Marriage-Age Population by Year, Bosnia and Rwanda



SOURCE: United Nations (2009)

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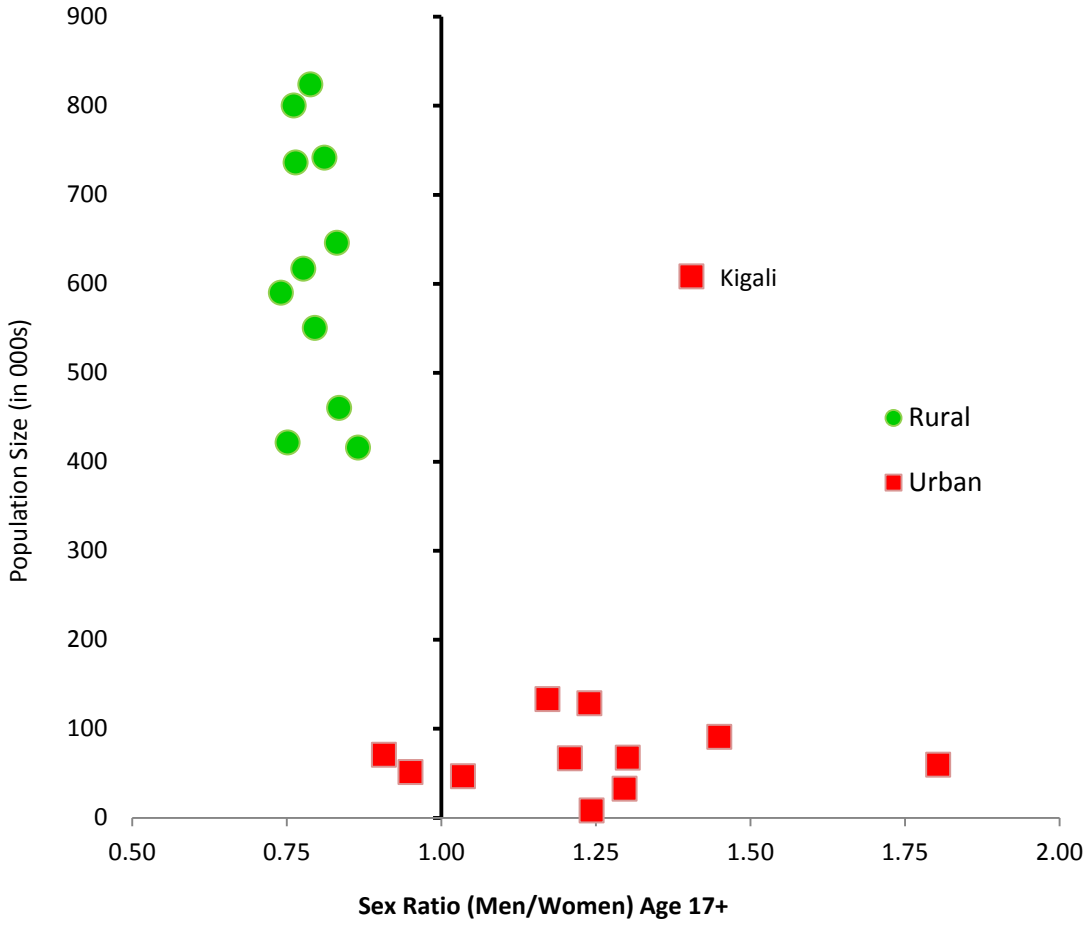
Figure 4.10: Sex Ratio of Rwandan Districts by Type and Population Size, 2002



Source: Rwandan Census (2002).

In some cases women stay in rural areas while their husbands go to Kigali to find employment and then remit money back home, but this arrangement is unlikely to explain the magnitude of variation in sex ratio between rural and urban areas. Polygamous marriages are officially illegal under Rwandan law, and there was not a large increase in polygamous marriages in the 2000 or 2005 Rwandan DHSs compared to 1992. However the phenomenon of 'husband hiring' (where an unmarried woman is openly the mistress of a married man who supports her and the children they produce together) has been discussed as one possible way in which women responded to the war (Gough 2000). I found support for this in a few of my interviews with widowed and never-married women in rural areas:

> I have only had one romantic relationship with a man since my husband died in the genocide. It lasted from 2000 to 2002. It ended because there was fraud. He has his own family. I decided to stop this relationship. And I am still alone ever since then.
>
> - 43-year-old woman, genocide widow of mixed marriage. She is Hutu (her brother was a génocidaire) but her husband was Tutsi

Extramarital affairs are common in many countries with balanced sex ratios, so it is difficult to ascertain to what extent affairs have increased after the genocide. But births to unmarried women still remain quite rare in both Bosnia and Rwanda. Some women reported limiting their childbearing due to the lack of a suitable male partner in rural areas:

> I am still young and I need to have another baby. If I find a husband I would like to get married. But it is very hard to find a single man my age, so if I got one my age I would want a child. ... I just had 2 children before the war and they also passed away. I know I want to have a child but I also want a husband. I'm a human being so what can I do? To find just someone to sleep with, I can find, but I am afraid to get HIV, so I want somebody long-term.
>
> -35-year old Hutu woman in rural area in Gisenyi province who was widowed by age 24

Gender Roles

Gender roles and economic autonomy may be an important determinant of marriage. Socialism in Yugoslavia supported and even promoted women's labor force participation, although it did not necessarily curtail the amount of housework that women were expected to do inside the home (Andjelković 1998; Massey, Hahn and Sekulic 1995). Some literature has documented a resurgence of traditional gender roles during and after conflict, both generally (Albanese 2001) and specific to the former Yugoslavia (Kunovich and Deitelbaum 2004).

Particularly in the wake of near-universal male conscription in formal and informal ethnic armies, women who used to work outside the home were relied upon to support the

troops by single-handedly caring for and in some cases providing for their families. Other researchers have documented an increase in gendered nationalism in the Balkans (Kaufman and Williams 2004; Kaufman and Williams 2007). Women were the first to lose their jobs during the Bosnian war and many retreated to the primacy of the family as a financial base and as a social institution (Andjelković 1998). In Croatia, public opinion polls documented increased support for women's autonomy in the years before the dissolution of Yugoslavia (1985 to 1989) but renewed support for traditional female roles from 1989 to 1995 at levels above those from 1985 (Kunovich and Deitelbaum 2004). These types of traditional expectations make marriage less attractive to women who grew up expecting to work outside of the home.

A similar gender role pattern was true in Nazi Germany, which celebrated women's increased participation in the domestic sphere, and the increased domestic space made available through Lebensraum (Koonz 1988). Women were simultaneously reified as 'keepers of the hearth' and subordinated to the Nazi project as a whole.

While there is scant literature available about these dynamics in Bosnia, I did find mixed evidence for an increased expectation of domesticity throughout my interviews. However the promotion of gender roles seemed more likely to affect women were already married or on the cusp of marriage, rather than among the younger generation coming of age in a post-war era, and in that sense the resurgence of traditional gender roles may not have affected marital formation. In Rwanda, women have participated more frequently in governance after the genocide, but this increased autonomy does not seem to have translated into gender role changes at home.

4.7.4 Psychosocial Factors

Trauma

Genocide undoubtedly causes mental and physical trauma to survivors, witnesses, displaced persons, and former combatants. Long-term mental and physical injuries from the war reduce the desirability of some segment of the population, including the physically disabled, those who were raped and/or tortured, and some proportion of former combatants. These populations (especially rape victims) may also be less interested in pursuing romantic relationships themselves.

Trauma is manifested in different ways in both countries, and is more difficult to assess in Bosnia because women were much less willing to discuss it, even the concentration camp survivors. In Rwanda many of the women I talked to were more willing to discuss what happened. One respondent who was repeatedly raped during the Rwandan genocide in front of her children told me before I started recording, when I told her that the interview was confidential and anonymous, that "even if the interview is confidential some things that happened are not confidential anymore." (i.e. rape was committed in public). Without detail on what happened to her, she described herself after the war in this way:

Where did you live before you moved here?
After the war and before the Rwanda Women's Network[56] I was just a crazy woman wandering the town. I was lonely, and I was homeless. There were two women who started Rwanda Women's Network as a social community center. They received the first women there, and I was among the first group of women who joined the Center. And then because the center k grew bigger, they got a block to build houses for these women who survived the war. We have already suffered too much.

-41-year old HIV-positive widow who lives at Village of Hope near Kigali

While a significant element of the Bosnian war was the economic crisis, personal safety, displacement and other factors likely affected the propensity to marry. Long-term mental and physical injuries from the war likely appeared to reduce the perceived 'desirability' of particular partners[57] and perhaps survivors' own desire to get married, this seems to have been especially true in Bosnia rather than in Rwanda. This is not to deny that there was significant physical and mental scarring in both countries. However, as discussed in the next section, the duration of the war in Bosnia and the bitterness of current ethnic politics seemed to contribute to women's lack of desire to marry. In Bosnia, the LSMS actually asked an inventory of questions about post-war trauma. Husbands were slightly more likely than wives to recall painful memories from the war at least a little bit (48.5% versus 46.9%) even seven years after the war ended. Compared to Rwanda, in Bosnia it is much more acceptable—and in some cases, more financially feasible—for women to remain single, particularly because it is more common for adults to live with parents and other family members there.

Social Embeddedness

In most traditional cultures one tends to find a partner through family, friends, and religious worship. Trauma and social fractionalization during war may disrupt this typical 'search process' by changing the extent to which people are embedded in their local communities. In communities where level of distrust is deep young adults have fewer opportunities to find a partner and they or their parents may be more distrusting of a prospective mate. This is a particular problem in Bosnia, even within ethnic groups. Low support from friends was the strongest predictor of current PTSD symptoms among women who had been exposed to trauma (Johnson and Thompson 2008). One respondent whose family fled Srebrenica and barely survived and has since returned described her relationship with her community this way:

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[56] The group that founded the Polyclinic of Hope and the Villages of Hope.

[57] For example, concentration camp survivors in Bosnia reported difficulty finding a mate who would accept them; women in Bosnia also discussed not wanting to be with men who had been made "crazy" by the war. In one study of currently-married couples, PTSD—particularly among men—was the strongest predictor of marital happiness and stability (Spasojevic, Heffer and Snyder 2000).

> Life was better when we were growing up. It is not only financial. Even if we were financially better off before the war, we also had freedom and we lived better. My kids may have everything they need, but I think I lived better. We had a lot more friends in the community; people were closer to each other. Like we would have all our relatives together and around. We had my husband's relatives, and my relatives, and our friends, and now we just keep meeting new people. So now you do not know many people around you, and it takes you time to find out where somebody's from, who he is, and you cannot trust everyone, and in that sense it is harder now. And everybody distrusts the other people. Everyone. It is not just that Muslims don't trust Serbs or vice versa, but it is just that within the same group there is so much distrust.
>
> -45-year old Bosniak woman in Srebrenica who returned here with family after war

Bosnians, particularly Bosnian Muslims, tend to find the admission of psychological difficulties to be stigmatizing and value stoicism (Jones 2002b). At the individual level this may exacerbate PTSD by reducing people's willingness to seek help or admit that they were damaged by the war. In Rwanda, the local Gacaca[58] process can enable communities to confront and process their painful history. Yet new evidence shows that witnesses who testify in these open 'courts' are often traumatized by the process (Brouneus 2008). Due to cultural differences and to strong efforts by government and international community to rebuild Rwanda and sensitize school-aged children to genocide issues,[59] Rwandans also seem much more accepting of obvious war injuries and several rape survivors in Rwanda told me that their husbands understood. At the same time, there are many tensions between neighbors and even within families in Rwanda (Stover and Weinstein 2004). One respondent described how ethnic tensions split apart her family during and after the war:

> *Looking back over your life, would you say that your current standard of living is better or worse than it was when you were growing up?*
> The life I have now is better. Because it is stable. Before I was worried. My family was hostile.

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[58] Gacaca, which literally means "justice on the grass," is a traditional dispute resolution process Rwandan villages have used for centuries. It now refers to the implemented after the genocide to both reduce the burden on the criminal justice system and to enable communities to confront their painful past. The process has both advocates and detractors (Stover and Weinstein 2004).

[59] There is evidence of genocidal ideology being taught in Rwandan schools or teasing of Tutsi children as 'cockroaches' (a term used during genocide campaign) being condoned by teachers, but at least compared to Bosnia this is seen as a problem, is talked about openly, and is being addressed by numerous NGOs and school boards.

In what ways was your family hostile?
My father's family was Hutu. We [my siblings and I] were denied by my father's family. They said we were not part of the family. And when we asked our mother [Tutsi] she told us that it was our family.
Was the denial after the genocide, or was it also before?
Even before it was like that. But when the war came it was much worse.
Was your father's family involved in the genocide at all?
No.
After the war did you feel closer together as a family or further apart as a family?
The war caused hatred and mistrust in our family and my dad's family really keeps mistreating my mother. I am thinking of taking them to court soon.[60] My father left my mother after the war. So my education was interrupted because of lack of means. That always stopped me from feeling closer to my dad's side of the family.

The boundaries of ethnic cleansing were often blurred, with Hutu neighbors and even in-laws killing Tutsi neighbors and relatives. One Rwandan woman described the pain of having to live near her husband's killers

When I returned home after the genocide, of course nobody was there. There were not even any dead bodies. No bodies, just my neighbors were there. This is the problem with these people [the neighbors]. They know quite well how he was killed, and I have been asked to forgive them during Gacaca, to forgive those who were there, who were supposed to help, who I think killed my relatives And I have been asked to forgive them, saying that they had hidden me during the war. Whereas I am almost sure that it is them who killed my whole family. So this is the problem I have now to live with these people. I am almost sure that these are the people who killed my own family. I am not happy about how the Gacaca is being run. I am still convinced that [my neighbors] are the people who killed my husband and children. They keep asking to meet to forgive them, but I am still convinced that they are guilty. I think that I will ask to appeal the ruling.

I did not specifically encounter the theme of tensions with neighbors in Bosnia the way I did in Rwanda. In part, due to the shortage of arable land, Rwandans had little opportunity to change their residence after the war. In Bosnia, on the other hand, those who did not want to stay in their former neighborhoods seem to have been able to relocate. Additionally, in

[60] A reference to a struggle over land rights.

Bosnia—as in many industrialized societies—neighbors are simply less likely to know their neighbors. Many Bosnian respondents said that they did not know any of their current neighbors, or were not interested in meeting them.

Political Recovery

Of all the causal linkages that have been discussed, political recovery may be the factor that is the least well-documented and one of the most important. Forming a new household takes courage, independence, a willingness to take a chance on the future.

In Bosnia, ethnic tensions still openly run high. The Dayton Accord's division of territory has incubated large 'ethnic enclaves,' and the Republika Srpska and the Bosnian Federation now essentially function as autonomous countries. As discussed in the background section, Republika Srpska has its own flag, its own anthem, and tends to strictly employ the Cyrillic alphabet.[61] Srebrenica, the site of the largest and most famous slaughter of Bosnian Muslim men, is now officially part of Republika Srpska, which is a source of heartbreak for dispossessed women who lost their fathers, husbands, and sons during that episode. In Sarajevo, Mostar, Tuzla, and other large cities in the Federation much infrastructure remains damaged. Buildings and homes which bear scars from mortar shells, grenades, and machine gun fire tend to still be inhabited, their scars a daily reminder of the open wounds left from the war.

The lingering resentment between Serbs and Muslims in particular is palpable because of the acute sense of abandonment both sides feel from the international community despite the eventual NATO bombings. While Bosnian Serbs openly complain about 'persecution' by the International Criminal Tribunal for the Former Yugoslavia (ICTY) and about being portrayed as 'bad guys' by the international press, Bosnian Muslims complain about the years they spent in cities under siege, about the insulting food aid the international community sent them,[62] and the arms embargo which made it near impossible to wage war against the Serbian army.

Of course the international community did not militarily intervene in the Rwandan genocide the way that NATO airstrikes eventually dampened Serbian aggression during the Bosnian genocide. However, one key difference between the two countries is that interviews with Bosnian women revealed that they grew up in Yugoslavia thinking of themselves as Europeans, both culturally and materially, and particularly in the wake of the 1984 Sarajevo

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[61] The Bosnian, Croatian, and Serbian languages are generally identical and can be written in the Latin alphabet or the Cyrillic alphabet. In Republika Srpska, Cyrillic font is used in street signs, newspapers, government documents, classrooms, and so forth.

[62] For example, pork during Ramadan, Truman-era powdered eggs that caused food poisoning, and expired candy that dissolved when it was exposed to air.

Olympics. My respondents felt that Bosnia had deserved international attention and support, more food aid, or earlier NATO military support. Moreover, the fact that the Dayton Accords awarded a large share of the country to ethnic Serbs reinforced a sense of anger and loss. Rwandan women, even when asked directly, did not express anger about the lack of international support, perhaps because of the new influx of American aid, and perhaps because there was a definitive outcome to the war that did not require their country to be divided.

A 2007 poll about national attitudes found that 88% of Bosnians would describe how things are going in the country these days as 'quite bad' or 'very bad' (Oxford Research International 2007). The study also found that 11% expect that the overall situation in one year's time will be worse than it is now. During economic hardship, unless one spouse can be a provider, marriage may seem undesirable. Moreover, only 7.2% of survey respondents agreed with the statement "you can trust other people." This was the lowest of the 25 countries in the 2007 World Values Survey (Oxford Research International 2007: 14)

While trust in others is somewhat different from social embeddedness (the size and density of social networks), there is likely to be a correlation between the two. Based on my qualitative research, I would assert that neighborhoods are more fragmented in Bosnia than in Rwanda. Bosnians, like other Europeans and Americans, are relatively comfortable not knowing neighbors personally, except in rural areas. Rwandans on the other hand insist on knowing their community.

While the 'unified' Kagame government in postwar Rwanda and the outlawing of ethnic categorization has to some extent driven ethnic tensions deeper under the surface, it seems to have helped give many Rwandans—particularly those who are well-off—a sense of shared hope and optimism about the future. A full 97% of the 10,000 Rwandans who responded to a survey about social cohesion in 2008 said that the government was working in the best interests of the people—a rate higher than any of the 47 countries surveyed, including China (Rwanda National Unity and Reconciliation Commission [NURC] 2008). The survey showed that social trust had declined slightly over time but remained at nearly half of those surveyed.[63]

4.7.5 Regression Analysis

The previous section reviewed qualitative and secondary evidence for various causal factors between genocide and nuptiality. But it would be ideal to comparatively assess the relative importance of each of these factors with statistical data. This is a difficult undertaking, particularly given the richness and complexity of the various factors described in the previous section and given the limitations of extant datasets. In the absence of a longitudinal data set of

[63] Note that in Rwanda the question was phrased as "Agree or disagree: it is naïve to trust other people." In 2008, 58% of those surveyed agreed with the question, an increase of 9 percentage points since 2005. As the authors point out however, citizens of industrialized countries tend to agree overwhelmingly with this statement.

women that began before the genocide or more knowledge of the characteristics of those who perished and moved away permanently, it is difficult to assess survival bias and other causal factors in the previous section. Retrospective data is obviously limited by the extent to which respondents can recall (or ever knew) their date of birth and dates of other vital events in their lives.

In both countries I constructed a dataset based on retrospective person-months lived from January 1985[64] until the year prior to the survey.[65] Starting from the month a woman turned 15 (or 1985, whichever came later) until the month that she was married (or December of the year before the survey, whichever came sooner) a woman contributed single person-months to the dataset. In every month before she married she received a '0' for her marital outcome, until she received a '1' for her marital outcome in the month that she married. As would be expected, a large proportion of women were truncated during the final observation month (aged 15 or over and still unmarried); these respondents never received a '1' for their marital outcome. I used this dataset to run a logistic regression on the retrospective risk of having a first marriage in any given person-month. Controls for individual months were introduced in every model to reduce the effects of seasonality on other coefficients.

This type of data set could also have been used for a proportional hazards regression, but I chose a logistic model in order to relax the assumption of proportional hazards. The assumption of proportionate risk is likely to be violated during years of crisis when we might expect to see disproportionate delays or accelerations in the probability of getting married. And as Figure 4.6 illustrated, the assumption of proportionality was violated among birth cohorts in Rwanda, possibly in Bosnia as well.

Table 4.6 shows logistic regression results of the risk of a never-married Bosnian woman marrying in any particular month. As expected, age increases the risk of marriage while age squared reduces it; being born in an urban area or obtaining secondary or higher education also reduces the risk of first marriage in any given month. Ethnic differences between Bosniak (Muslim) women, Croatian women, and the reference group of Serbian women were not significant.

According to Table 4.6, the risk of marriage during the war years was dramatically reduced, and even moreso in postwar years. I disaggregated the postwar period into its initial

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[64] 1985 was chosen for a few reasons. First I wanted to allow several years for 'baseline' trends to be evident prior to the start of conflict in 1992 or 1994. At the same time due to large shifts in demographic behaviors over time I wanted to maintain a focus on contemporary trends. Finally dates of marriage more than twenty years old may be particularly difficult to recall, so limiting the sample to a maximum of 20 years before the 2005 survey likely provides more accurate results.

[65] This was 1999 and 2004 in Rwanda and 2001 in Bosnia. I ended the analysis in the year prior to the survey due to differences in interview dates among the sample.

phase (January 1996 to December 1997) and the later phase, January 1998 to December 2001. The decline in the odds of first marriage was much stronger after the initial post-war phase, as the rate of employment declined. This result is consistent with a general delay effect due to material hardship and a lack of social embeddedness in Bosnia.

In Table 4.7 I restrict the observations to person-months during the war and after in order to introduce a variable about whether or not a woman relocated here for war-related reasons. The sign on the coefficient of having relocated to the area for war-related reasons is positive, but not statistically significant. Other similar variables used instead, such as painful war memories, an indicator of PTSD, and the crude casualty rate of the opština where the woman lived prior to war were also not significant. This may be due to the kinds of bifurcated effects discussed previously—displacement and economic hardship may induce some to marry while prevent others from doing so. Yet the small number of marriages (290) that occurred over this 10-year period among LSMS respondents made it impossible to further stratify war-related variables by ethnicity or other covariates.

Table 4.6: Logistic Model Predicting Month of First Marriage, Bosnian Women, 1985-2001[a]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.696	0.145	<.0001 **	5.45	4.11	7.24
Age^2	-0.037	0.003	<.0001 **	0.96	0.96	0.97
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	0.220	0.088	0.0120 *	1.25	1.05	1.48
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.264	0.092	0.0040 **	0.77	0.64	0.92
Post-secondary education	-1.460	0.202	<.0001 **	0.23	0.16	0.35
Ethnicity						
Woman is Serb	-	-	-	-	-	-
Woman is Bosniak (Muslim)	0.081	0.087	0.3510	1.08	0.91	1.29
Woman is ethnic Croatian	-0.287	0.172	0.0950	0.75	0.54	1.05
Time Period						
Pre-war	-	-	-	-	-	-
March 1992 to December 1995 (wartime)	-0.399	0.108	<.0001 **	0.67	0.54	0.83
1996 to 1997 ("genocide aftermath")	-0.418	0.140	0.0030 **	0.66	0.50	0.87
1998 and after ("post-genocide")	-0.603	0.111	<.0001 **	0.55	0.44	0.68
Month						
January	0.171	0.203	0.3990	1.19	0.80	1.77
February	-0.132	0.219	0.5450	0.88	0.57	1.34
March	0.249	0.201	0.2150	1.28	0.87	1.90
April	0.009	0.212	0.9660	1.01	0.67	1.53
May	0.191	0.203	0.3460	1.21	0.81	1.80
June	-0.067	0.216	0.7560	0.94	0.61	1.43
July	0.145	0.205	0.4800	1.16	0.77	1.73
August	0.104	0.207	0.6130	1.11	0.74	1.66
September	0.485	0.191	0.0110 *	1.62	1.12	2.36
October	-0.004	0.212	0.9830	1.00	0.66	1.51
November	0.366	0.195	0.0610	1.44	0.98	2.11
December	-					
n=85,019 person-months; events=622		concordance=69.1%		*pseudo-R^2* =.062		** p<.01, * p<.05

a. Months range from January 1985 to December 2001. Each woman had an observation for every month in which she was 15 or over and not yet married. In the month she did marry (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

Table 4.7: Logistic Model Predicting Month of First Marriage, Bosnian Women, During and After War[a]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.427	0.198	<.0001 **	4.17	2.83	6.15
Age^2	-0.030	0.005	<.0001 **	0.97	0.96	0.98
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	0.276	0.127	0.0300 *	1.32	1.03	1.69
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.391	0.136	0.0040 **	0.68	0.52	0.88
Post-secondary education	-2.020	0.315	<.0001 **	0.13	0.07	0.25
Ethnicity						
Woman is Serb	-	-	-	-	-	-
Woman is Bosniak (Muslim)	0.001	0.127	0.9950	1.00	0.78	1.28
Woman is ethnic Croatian	-0.210	0.244	0.3890	0.81	0.50	1.31
Time Period						
March 1992 to December 1995 (wartime)	-	-	-	-	-	-
1996 to 1997 ("genocide aftermath")	-0.005	0.160	0.9770	1.00	0.73	1.36
1998 and after ("post-genocide")	-0.172	0.135	0.2010	0.84	0.65	1.10
Why here						
Born here or relocated for work	-	-	-	-	-	-
Relocated here for war-related reasons	0.166	0.134	0.2140	1.18	0.91	1.53
Month						
January	0.259	0.300	0.3880	1.30	0.72	2.33
February	0.071	0.314	0.8220	1.07	0.58	1.99
March	0.193	0.297	0.5170	1.21	0.68	2.17
April	-0.033	0.314	0.9150	0.97	0.52	1.79
May	0.474	0.281	0.0910	1.61	0.93	2.78
June	-0.089	0.318	0.7790	0.91	0.49	1.71
July	0.096	0.303	0.7510	1.10	0.61	1.99
August	0.095	0.303	0.7530	1.10	0.61	1.99
September	0.597	0.273	0.0290	1.82	1.06	3.10
October	-0.102	0.318	0.7490	0.90	0.48	1.68
November	0.173	0.297	0.5610	1.19	0.66	2.13
December	-					
n=52,313 person-months; events=290	concordance=68.8%		*pseudo-R^2* =.061	** p<.01, * p<.05		

a. Months range from March 1992 to December 2001. Each woman had an observation for every month in which she was 15 or over and not yet married. In the month she did marry (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

In Rwanda, the number of respondents was high, but—as discussed in Chapter 3—there were few war-related covariates in the dataset. Table 4.8 shows the results of a logistic model predicting the month of first marriage of Rwandan women age 15 and over. A handful of women who married before age 15 were excluded from the analysis. The covariates on age and born in a rural area are significant and in the expected direction, as are the educational covariates. Women were much more likely to marry during the genocide and immediately afterward, but after 1998 they were less likely to marry. Standard month controls were included in the regression. Coefficients for March, April, and June were not significant, likely due to the break in seasonal patterns during 1994.

Table 4.9 shows a similar regression but limited to the months during and after the genocide (April 1994 to December of the year prior to the 2000 or 2005 survey). Here a variable for sex ratio is introduced, based on the 2002 census. The smallest geographical area enumerated by the DHS was province and rural/urban. For this reason, sex ratios for the marriage-aged population (15-39) in the rural and urban area of the province were assigned to each respondent. Interestingly, the coefficient on sex ratio is negative and statistically significant, indicating women in areas with more men were less likely to marry. This is a very unexpected result. However, there are two important factors to consider. First, the sex ratio variable only reflects the sex ratio of the area where the woman *currently* lives, not the area where she lived prior to marriage. Rwanda is a patrilocal society, so women tend to leave home and move to their husband family's area or homestead. Second, there is a statistically significant correlation of 91% between the sex ratio and urban residence. For these two reasons I would assert that in Table 4.9 the sex ratio variable is acting as a proxy for area of current residence rather than an indication of the woman's 'marriage market' prior to matrimony. Women in rural areas are much more likely to marry early, and the low sex ratio of these areas may indicate women who are farming while their husbands are working in a nearby city.

To illustrate the covariation between sex ratio and rural/urban residence, Table 4.10 repeats the earlier regression and includes the area of current residence. (Whether the woman grew up in a rural or urban area is not included in this regression due to the obvious collinearity with her area of current residence). The results shown indicate that when area of residence is included, the sex ratio variable becomes insignificant. The coefficient on rural residence, however, is positive and statistically significant.

Table 4.8: Logistic Model Predicting Month of First Marriage, Rwandan Women, 1985-2004[a]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.455	0.038	<.0001 **	4.28	3.98	4.61
Age^2	-0.031	0.001	<.0001 **	0.97	0.97	0.97
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	0.232	0.041	<.0001 **	1.26	1.16	1.37
Education						
None	-	-	-	-	-	-
Primary education	-0.235	0.026	<.0001 **	0.79	0.75	0.83
Secondary education	-0.651	0.038	<.0001 **	0.52	0.48	0.56
Post-secondary education	-1.120	0.121	<.0001 **	0.32	0.26	0.41
Time Period						
Pre-genocide	-	-	-	-	-	-
April to July 1994 (during genocide)	0.330	0.083	<.0001 **	1.39	1.18	1.64
August 1994 to December 1997 ("genocide aftermath")	0.286	0.027	<.0001 **	1.33	1.26	1.40
1998 and after ("post-genocide")	-0.226	0.026	<.0001 **	0.80	0.76	0.84
Month						
January	0.243	0.053	<.0001 **	1.27	1.15	1.41
February	0.230	0.053	<.0001 **	1.26	1.13	1.40
March	-0.069	0.057	0.2210	0.93	0.83	1.04
April	0.050	0.055	0.3650	1.05	0.94	1.17
May	-0.116	0.057	0.0420 *	0.89	0.80	1.00
June	0.061	0.055	0.2670	1.06	0.95	1.18
July	0.359	0.051	<.0001 **	1.43	1.30	1.58
August	0.598	0.049	<.0001 **	1.82	1.65	2.00
September	0.195	0.053	<.0001 **	1.22	1.10	1.35
October	-0.117	0.057	0.0400 *	0.89	0.80	0.99
November	-0.359	0.061	<.0001 **	0.70	0.62	0.79
December	-					
n=936,438 person-months; events=8,897	concordance=68.1%		*pseudo-R^2* =.055	** p<.01, * p<.05		

a. Months range from January 1985 to December 2004. Each woman had an observation for every month in which she was 15 or over and not yet married. In the month she did marry (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

b. After 12-97 there were few refugees and IDPs in camps

Data from 2000 and 2005 Rwandan Demographic and Health Surveys

Table 4.9: Logistic Model Predicting Month of First Marriage, Rwandan Women, During and After Genocide[a]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*		*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.632	0.052	<.0001	**	5.11	4.62	5.66
Age^2	-0.035	0.001	<.0001	**	0.97	0.96	0.97
Sex Ratio[b] (in post-genocide months)	-0.401	0.067	<.0001	**	0.67	0.59	0.76
Where Born							
Born in an urban area	-	-	-		-	-	-
Born in a rural area	0.189	0.058	0.0010	**	1.21	1.08	1.35
Education							
Less than primary	-	-	-		-	-	-
Highest degree is primary school	-0.199	0.037	<.0001	**	0.82	0.76	0.88
Highest degree is secondary school	-0.496	0.054	<.0001	**	0.61	0.55	0.68
Highest degree is post-secondary	-0.835	0.151	<.0001	**	0.43	0.32	0.58
Time Period							
April to July 1994 (during genocide)	-	-	-		-	-	-
August 1994 to December 1997 ("genocide aftermath")	-0.017	0.086	0.8480		0.98	0.83	1.16
1998 and after ("post-genocide")	-0.530	0.086	<.0001	**	0.59	0.50	0.70
Month							
January	0.155	0.073	0.0330	*	1.17	1.01	1.35
February	0.230	0.071	0.0010	**	1.26	1.09	1.45
March	-0.121	0.078	0.1200		0.89	0.76	1.03
April	0.021	0.073	0.7720		1.02	0.89	1.18
May	-0.038	0.074	0.6010		0.96	0.83	1.11
June	0.026	0.072	0.7200		1.03	0.89	1.18
July	0.360	0.066	<.0001	**	1.43	1.26	1.63
August	0.543	0.064	<.0001	**	1.72	1.52	1.95
September	0.171	0.069	0.0140	*	1.19	1.04	1.36
October	-0.115	0.074	0.1210		0.89	0.77	1.03
November	-0.334	0.079	<.0001	**	0.72	0.61	0.84
December	-	-	-		-	-	-
n=535,381 person-months; events=4,992	concordance=69.0%		*pseudo-*R^2 =.060		** p<.01, * p<.05		

a. Months range from April 1994 to December 2004. Each woman had an observation for every month in which she was 15 or over and not yet married. In the month she did marry (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

b. Sex Ratio of adults age 17 and over from Census 2002 data, matched to province and rural/urban area.

Data from 2000 and 2005 Rwandan Demographic and Health Surveys

Table 4.10: Logistic Model Predicting Month of First Marriage, Rwandan Women, During and After Genocide by Place of Residence[a]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*		*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.634	0.051	<.0001	**	5.12	4.63	5.67
Age^2	-0.035	0.001	<.0001	**	0.97	0.96	0.97
Sex Ratio[b] (in post-genocide months)	0.050	0.146	0.7320		1.05	0.79	1.40
Area of Residence							
Urban	-	-	-		-	-	-
Rural	0.337	0.085	0.0010	**	1.40	1.19	1.65
Education							
Less than primary	-	-	-		-	-	-
Highest degree is primary school	-0.198	0.037	<.0001	**	0.82	0.76	0.88
Highest degree is secondary school	-0.498	0.054	<.0001	**	0.61	0.55	0.68
Highest degree is post-secondary	-0.840	0.149	<.0001	**	0.43	0.32	0.58
Time Period							
April to July 1994 (during genocide)	-	-	-		-	-	-
August 1994 to December 1997 ("genocide aftermath")	-0.015	0.086	0.8650		0.99	0.83	1.17
1998 and after ("post-genocide")	-0.530	0.086	<.0001	**	0.59	0.50	0.70
Month							
January	0.150	0.073	0.0390	*	1.16	1.01	1.34
February	0.225	0.071	0.0020	**	1.25	1.09	1.44
March	-0.122	0.078	0.1160		0.89	0.76	1.03
April	0.017	0.073	0.8180		1.02	0.88	1.17
May	-0.037	0.073	0.6090		0.96	0.83	1.11
June	0.019	0.072	0.7950		1.02	0.88	1.17
July	0.354	0.066	<.0001	**	1.42	1.25	1.62
August	0.542	0.064	<.0001	**	1.72	1.52	1.95
September	0.168	0.069	0.0150	*	1.18	1.03	1.35
October	-0.120	0.074	0.1060		0.89	0.77	1.03
November	-0.341	0.079	<.0001	**	0.71	0.61	0.83
December	-	-	-		-	-	-
n=535,381 person-months; events=4,992	concordance=69.0%		*pseudo-*R^2 =.060		** p<.01, * p<.05		

a. Months range from April 1994 to December 2004. Each woman had an observation for every month in which she was 15 or over and not yet married. In the month she did marry (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

b. Sex Ratio of adults age 17 and over from Census 2002 data, matched to province and rural/urban area.

Data from 2000 and 2005 Rwandan Demographic and Health Surveys

4.8 Conclusion

In this chapter I examined nuptial trends before, during, and after the genocides in Bosnia and Rwanda. Retrospective data, which I argue is more reliable than vital statistics records, indicated that the first marriage rate increased dramatically in Rwanda following the genocide. Due to the limited number of cases in Bosnia it was more difficult to detect a trend. Perhaps the most discernible pattern there was the large drop in first marriage rates during the collapse of Yugoslavia and the economic crisis leading up to war; during war the first marriage rate declined dramatically and recovered somewhat afterward. Patterns in the *age* at first marriage, however, were much more conclusive in Bosnia than in Rwanda. Women's increase in the age at first marriage after the lengthy war in Bosnia was strongly suggestive of a 'delay effect.' In Rwanda, on the other hand—despite the ongoing demographic transition and the implementation of a new age of majority— the average age at first marriage remained low for the first few years following the genocide. Rwandan women aged 15-19 at the start of the genocide had early first marriage patterns more similar to prior birth cohorts than to their predecessors or successors. The increase in the first marriage rate during and after the Rwandan genocide, particularly among teenagers, was consistent with some contemporary evidence of surges in marriage from other post-conflict settings, such as Timor Leste, Tajikistan, Cambodia, and Indonesia.

I introduced a framework for analyzing the causal relationship between nuptiality and genocide during war, immediately after conflict, and during the long-term national recovery process. These causal mechanisms can be classified into to four broad categories: involuntary factors, material and economic factors, sex ratio and gender roles, and psychosocial factors. I drew on data from my own interviews, nationally-representative surveys, and from secondary sources to evaluate the effects and magnitude of these causal pathways on nuptiality in Bosnia and Rwanda.

Regression analysis of first marriage rates in both Bosnia and Rwanda was made difficult by the lack of genocide-related covariates in Rwanda and by the small sample sizes in Bosnia. My logistic regression analysis of first marriage in Bosnia found that ethnicity was not a significant predictor of first marriage, nor was relocation for war-related reasons or recollection of painful war memories.[66] After controlling for age, education, place of residence, and month of marriage (seasonality), the most statistically-significant predictor of first marriage was time period. Compared to high rates of first marriage during the pre-war era, women were less likely to marry during the war and—after a brief increase during the three years after the war—were less likely to marry during the 'post-genocide' era (1998 to 2001).

[66] Results from 'painful war memories' were not shown in the tables.

In Rwanda, where wartime mortality was more than four times as high relative to the initial population than in Bosnia, the sex ratio after the war was hypothesized to be an important predictor of first marriage. Interestingly, the coefficient on the local sex ratio was negative and statistically significant, indicating that women who currently reside in areas with *more* men were *less* likely to marry in any given year. I showed that there was a strongly positive correlation between sex ratio and population density; urban areas had much higher sex ratios than rural areas in all provinces. Once current area of residence (rural/urban) was added to the model, the sex ratio was not significant. After controlling for age, place of birth, education, and seasonality (month of marriage), the time period was an important predictor of women's entrance into first marriage. As in Bosnia, women were less likely to marry in the post-genocide era (1998 until the December prior to the survey). Unlike in Bosnia, women in Rwanda were much more likely to marry during the genocide until 1997 ("genocide aftermath").

I explore some of the reasons why the period effects might have such a strong influence on first marriage patterns in both countries. *Psychosocial* factors, such as trauma, social embeddedness, and political recovery, are hypothesized to be important in both countries. In Bosnia, where the partitioning of the country war ended the violence but left the fundamental conflict unresolved, it seems that ongoing tensions contribute to the lack of social embeddedness and faith in recovery efforts there. This sense is borne out by polling data, which indicates nearly 9 in 10 Bosnians believe that the situation in their country is quite bad or very bad, and trust in other people was the lowest in 25 countries surveyed. Meanwhile in Rwanda, trust that government was working to improve the lives of its citizens was near-universal (97%). To the extent that the belief in a shared future plays a role in the willingness to marry, psychosocial factors would act to increase marriages in Rwanda and reduce them in Bosnia.

My qualitative and secondary research suggested that *involuntary* factors, such as delay during crisis and a demand for brides created by male widowhood, along with *material and economic* factors such as 'transactional marriage' in Rwanda appeared to be the main drivers of the marital trends there. Sex ratio was hypothesized to be significant in Rwanda but it was difficult to determine whether this was the case due to the collinearity of sex ratio and population density. In Bosnia, *material and economic* factors such as the post-war unemployment rate seemed to dampen any such increase in first marriage there. *Gender roles* and female economic independence was an important driver of differing trends between the two countries: women in Bosnia could often afford to stay single, particularly because living with their parents well into adulthood is widely acceptable, whereas Rwandan women have a more difficult time getting by without a husband.

Chapter 5: Fertility

Even in the absence of war and genocide, we do not expect perfect correspondence between fertility aspirations and results. Strategies for avoiding births—if used at all—may fail. On the other hand, a couple that intends to become pregnant may fail to conceive or suffer a miscarriage. Periods of crisis may disrupt fertility at several stages: timing and spacing preferences, access to family planning, and—in severe cases, infecundity and miscarriage.

In this chapter I review the literature on patterns in post-crisis fertility, discuss intentionality and postponement, and explore causal pathways between fertility and genocide. Then I review total fertility rates and retrospective birth trends in both Bosnia and Rwanda. Finally I analyze the evidence for causality between genocide and fertility in both countries.

5.1 Fertility during and after crisis

Fertility rates tend to decline dramatically during an economic shock or famine (Ashton et al. 1984; Cai and Feng 2005; Chu and Lee 1994; Kidane 1989; Lee 1974; Lee 1981; Lee 1990; Ó Gráda 1988). Following a crisis, fertility tends to rebound, at least in part, from its decline. One important reason why fertility often increases after a crisis is susceptibility: If fertility declined during the crisis, more women are "available" to become pregnant, for example they are not experiencing lactational amenorrhea (Lee 1997). If births were delayed during the crisis, couples may actively choose to conceive after the crisis is over. However, most studies fiend that increases in fertility following a crisis is generally short lived, and then fertility rates return to their earlier pre-crisis levels and trends.

Lee looks at economic crises in pre-20th Century European populations and modern-day developing countries and finds that the demographic response among these two types of populations is quite similar (1990). Fertility decreases during crisis and is lowest in the year following the crisis, but rebounds afterward. Caldwell studied crisis in historical populations in Europe and during recent periods in Eastern Europe. He found that marked declines in fertility were an adjustment to the continued uncertainty about the future and the reduced socioeconomic conditions (Caldwell 2004). Other studies have found similar declines during contemporary economic reversals in sub-Saharan Africa (National Research Council 1993).

Consistent with other historical evidence, a study of China's tragic "Great Leap Forward" found that fertility declined sharply during the worst years of famine. From 1958 to 1962, the total fertility rate declined from 5.6 births per woman to 3.1 births per woman at the height of the famine; a 45% reduction (Peng 1987). Provinces hardest hit by the Great Leap experienced the most severe reductions in fertility. In 1963, the year following the end of the Great Leap Forward, China witnessed its largest-ever baby boom: total fertility rates peaked at 6.9 births per woman (ibid.). This increase in fertility was very short-lived and most provinces returned to their prior fertility level within a year. Interestingly, however, the total number of births lost from the reduction in fertility rates during the Great Leap Forward was never fully

compensated for by the post-Leap baby boom in any province. For China as a whole, the net fertility loss was 90% of a year of normal births.

In Bangladesh, during the first nine months of the 1971-2 civil war, fertility remained steady. After nine months there was a measurable decline the fits the expected trend. In the year following the end of the conflict, fertility rates returned to slightly above normal (Curlin, Chen and Hussain 1976). A study of communities affected by the South Indian drought argued that the persistent high risk of drought delayed the fertility decline (Caldwell, Reddy and Caldwell 1986). Parents sought strategies to ensure survival in the face of constant exposure to the risk of famine. As the economy diversified, families could better hedge against famine by having fewer children that they could educate and marry to urban or non-agricultural families.

Fertility in Beirut declined very slightly after the war, from 2.60 in 1984 to 2.52 in 1991 (Deeb, Khlat and Courbage 1997; Khlat, Deeb and Courbage 1997). The fertility decline was quite modest compared to other countries in the region. The small decline, particularly given the urban setting of Beirut and the prior trend downwards, suggests that perhaps the protracted conflict there increased fertility compared to what it would have been in the absence of the war.

Beyond famine and economic shock, civil wars and genocides are caused by—and also the cause of—massive social and political disruption. In this way the relationship between crisis and fertility may be more complex. A comprehensive synthesis of the relationship between war and fertility concludes that there is evidence of childbirth delay during war similar to that found during economic crises; however, in the medium to long run, wars have no clear impact on fertility in either direction (National Research Council 2004).

It may also be the case that the apparent lack of a trend based on aggregate data is disguising opposing fertility trends among subgroups of women. Among Holocaust survivors in Displaced Person camps after World War II, many married and had children right away, while a small minority of others purposefully avoided childbearing (Krystal and Danieli 1994). A study of fertility in Angola found that fertility among educated women increased *after* the civil war, while it *decreased* among less-educated women, perhaps because educated women had intentionally postponed births during the war (Agadjanian and Prata 2001; 2002). In the wake of Cambodia's genocide, younger women have actually given birth at rates above and beyond what would ordinarily have been expected (Heuveline 2004; Heuveline and Poch 2007).

Perhaps traumatic events such as war propel individuals toward what Johnson-Hanks calls *vital conjunctures*: socially constructed zones of possibility that emerge around specific critical periods of transformation in a life or lives (2002a). The fact that people are propelled toward these vital conjunctures does not predict how they will respond. Reconsidered priorities can work both ways. For some, a traumatic event like war causes them to reconsider priorities and to want to be closer to others, what psychologists term "attachment theory." At the same time, many couples may delay childbearing for many 'rational' reasons during times of crisis and uncertainty.

Childbearing fulfills a basic psychological need of most adults and has many intrinsic rewards (Morgan and King 2001). It is often hoped that children will provide parents with joy and gratification, even during difficult times. Yet for others, a stressful event worsens their outlook on future possibilities. The endurance of the warfare and the degree to which it is definitively resolved may play an important role in how couples respond to war and genocide.

Long after armed conflict is over, there may be effects of continued tensions on fertility. A few researchers have explored the fertility of Palestinian women, where the ongoing struggle between Jews and Arabs has led to pronatalist norms among both groups. Kanaaneh (2002) claims that there are two competing pressures on Palestinian women: to "modernize" on the one hand by bearing fewer children, and on the other hand to contribute to nation-building by birthing a new generation in the war with Israel. Another study of Palestinian and Israeli fertility confirms this finding by concluding that sustained conflict between the two groups appears to have elevated fertility levels on both sides (Fargues 2000).

A third study of Palestinian refugees in the West Bank and Gaza, finds that although refugee women are better-educated than non-refugees, their fertility is slightly higher (Al-Qudsi 2000). There may in fact be stronger pronatalist norms among refugees. Alternately these higher fertility rates among refugees may instead be due to circumstances such as lower employment and better health care.[67] I asked one Rwandan woman who was displaced into the forest for two years with her family during a recent conflict about the difficulty of bearing a child in the wilderness. She responded *"Yes, but what else was I going to do with my time?"* In this and in other cases, circumstantial opportunities during long-term displacement seemed to encourage childbearing.

5.2 Intentionality and Postponement

As alluded to in the prior section, one critical factor in determining the relationship between fertility and genocide is the extent to which fertility is already under the 'calculus of conscious choice' (cf. Bongaarts 1978). If women are already controlling the timing and spacing of births then we could reasonably expect that it would be more likely for women to delay childbearing during times of crisis. As Agadjanian and Prata (2001; 2002) found in Angola, there may be a tendency for better-educated women and for women who were already using contraception to postpone their births until after the war, while married women who were 'leaving it up to god' tended to give birth at steady rates before and after, albeit subject to factors such as spousal separation and miscarriage.

[67] During my pre-dissertation research, I visited refugee camps in Rwanda and the Democratic Republic of Congo and have conducted key informant interviews with camp directors there. Many have told me that there are tensions with neighboring communities due to the fact that refugees have better access to health care and free schooling than local residents do.

In previous papers, I have hypothesized that elevated levels of fertility in Africa (and the "stalled fertility transition" there) are a byproduct of political instability (Staveteig 2004). When life is unstable, survival is determined more by chance rather than by merit, and there are few formal opportunities to save and invest. Parents can arguably spread out the likely risk that any given child will not succeed economically by having many children and training them differently to “diversify” their investments. Political instability, therefore, could increase children’s value as insurance for their parents and thus encourage high fertility. However this hypothesis has not been tested in the literature.

Some research has, however, supported the hypothesis that children act as a type of "insurance," at least in some social contexts. Researchers such as Cain (1983), for example, have suggested that in developing countries, children are not economic goods as much as they are *insurance against risk*. This may be due to high rates of child mortality (cf. LeGrand et al. 2003) or to guard against other types of economic and political instability. Population biologists Leslie and Winterhalder (2002) have also urged the development of a model of variance sensitive adaptive behavior. They argue that uncertainties with contraception, child survival, and whether children will support parents in their old age affect the fertility decision process, and that in cases of uncertainty it is best to have many children and focus on training and educating the ones that seem most likely to succeed and the ones that seem most likely to repay the parents is the optimal strategy. Bledsoe calls this "diversifying the child portfolio" (2002).

Demographers tend to assume that agency is only uni-directional; it only happens if one is *limiting* her own fertility, ignoring the possibility that high fertility *may* be part of an active decision-making process. For example, many African women want to have a lot of children but do not have a fixed number in mind. For them, the spacing of children is the most important factor, and the desired number is best "left up to God" (Dodoo and Carr 1995; Johnson-Hanks 2002b; Johnson-Hanks 2007). In fact, African women tend to use contraceptives not to limit their fertility but rather to space it out and even to increase it (Bledsoe 1994; Bledsoe 2002; Bledsoe, Banja and Hill 1998). This trend was echoed in the interviews I conducted. For example:

> *When you were growing up, was there an ideal number of children you wanted to have?*
> When I was young I decided I wanted a few children, some children, I was not sure how many, but I decided that the space should be three years between the children
> *And your first and second births were three years apart, was that on purpose?*
> Yes, just for this

Johnson-Hanks argues that the demographic model of rational action is inadequate, particularly in contemporary Africa (2005). She argues instead for the notion of “judicious opportunism,” which emphasizes social context and contingency. This is particularly important in developing countries because of poor institutions, habituation of uncertainty, and the cultural relativity of stating firm intentions (2005: 382). An internal war with heavy civilian

casualties seems to be an even more extreme example of this kind of generalized uncertainty which may change the calculus of fertility decision-making.

Turning to the more extreme scenario of political violence and economic collapse, violence can cause or accelerate the failure of public institutions. It has also been said that violence is what happens when institutions fail (Choucri 1984). Public institutions are a basic building block of social structure. The state affects many parts of the lives of its citizens, from taxes, market structures, and water to healthcare, policing and education. Legitimization of political authority in the minds of citizens can also play an important role in individual decision-making. Government helps provide a sense of predictability; governmental failures such as spiraling inflation and decimation of social services can dramatically affect whether household decisions such as investing in education are affordable and will prove worthwhile.

Political conflict is also often accompanied by governmental corruption, which brings instability and high levels of income inequality via embezzlement and bribery of elites at the expense of investment in the masses. In a country with a corrupt government, individuals are likely to feel ineffective at producing change: votes, for example, may never be counted. There is no sense that justice will be fairly administered to offenders or to the accused, and vigilante justice may be the *de facto* rule of law. Parents interested in maximizing their reproductive fitness can only invest more fully in fewer children if they feel relatively certain that doing so will bring predictable rewards. In an unstable environment, it may make more sense to invest in "quantity" rather than "quality."

In certain political and economic contexts high fertility may be a very "rational" choice. And as Johnson-Hanks (2005) points out, the framework of rationality is itself culturally determined. By failing to take into account the social and political context of fertility, we may mistakenly assume high fertility is the cause of underdevelopment rather than the effect. Women in politically unstable countries navigate a different set of political and economic obstacles than, say, white middle-class American women – and their choices reflect the complexities of their own reality.

Researchers have demonstrated that political capacity *could* significantly affect fertility rates (Feng, Kugler and Zak 2000). Their data analysis on 100 countries from 1960 to 1990 strongly supports a model of the interaction between fertility, economics, and politics. Feng et al. define political capacity based on the range of "strategic, multi-objective policy setting by the government" (668) and political instability as the "proportion of a country's physical capital destroyed in antigovernment violence" (669). They explain that political capacity and stability interact: the more political capacity a government has, the more likely it is to recover from shocks of political instability and resulting impacts on the fertility rate.

The model of Feng and his colleagues is highly quantifiable and thus in some way empirically convincing; however, all of their data are hypothetical and all measurements are done in purely monetary terms. In their simulation, political capacity acts merely to raise labor

productivity and parents base their decision of whether to have children on opportunity costs to maximize their lifetime utility of children in terms of a savings model. The government chooses an optimal tax rate, police spending, and level of political capacity, and then individuals respond to government policies via births and savings. The model is an interesting thought experiment, but one that is limited by its own assumptions. To assume that political capacity only (and directly) affects labor productivity, for example, seems absurd.

Monica Das Gupta (1999) has written about the role of governance in fertility declines using an analysis much closer to my own. She asserts that the fertility decline corresponds with changes in sociopolitical institutions, which have transitioned from hierarchical to more egalitarian historically in wealthy countries and more recently in low-income countries. Das Gupta suggests that political explanations may be a common cause of economic development *and* the demographic transition:

> It may well be that both socio-economic development and the fertility transition are driven by the same gamut of institutional changes. Thus, instead of expecting development consistently to precede fertility decline, we should perhaps view the two sets of changes as associated but not necessarily sequential in nature. (2-3)

My own research (Staveteig 2002) has found that countries with low levels of meritocracy—a scaled score based on factors such as corruption and whether civil service advancement follows a stable, predictable pattern (Evans and Rauch 1999)—have higher levels of fertility, even after controlling for factors such as economic development and contraception. Thus high fertility may merely be a *symptom* of broader institutional instability, a rational coping mechanism for living in uncertain times. Yet there are counterexamples, such as Bosnia and other countries in Eastern Europe, where fertility and meritocracy are both low.

Even in instances of high fertility, therefore, there still may be a conscious decision-making associated with large numbers of children. Therefore it would be naïve to attribute changes in Rwandan fertility simply to circumstances such as famine and not to rational choice. However, given the extent to which Bosnian women were already controlling their births (1.7 children per woman in 1991), we might expect a stronger postponement effect there.

Table 5.1 presents results from my interviewees on fertility-related characteristics ranging from family planning to reproductive intendedness. Due to relatively small sample sizes (discussed in Chapter 3) it is difficult to draw definitive conclusions from these results, but they may be suggestive of overall trends nonetheless.

About half of the women I interviewed in both countries had taken measures to prevent births at some point. In Bosnia the three methods women reported most frequently were abortion, withdrawal, and IUD. In Rwanda the majority of women who had used any method report using periodic abstinence, but pills and condoms were also popular. Several Rwandan

women in rural areas said that they wanted to get injections or IUDs, but had not had the chance to get them yet.

More than half of my respondents in Bosnia indicated that their last pregnancy had been a surprise, as opposed to a plurality in Rwanda. It seems unusual that in Bosnia, a country with low (controlled) fertility, that so many women would have unexpected births. In some cases the implication seemed to be that they were hoping for a baby and finally had one, while in other cases it was truly unplanned. Due to the tendency to rely on abortion—a preference which was also confirmed during my key informant interviews—there may be a tendency to allow pregnancies to happen naturally and then decide whether or not to keep the baby. However the acceptance of contraceptives is higher among younger women in Bosnia, so this trend may be changing. More women in Bosnia reported having felt happy about their last pregnancy than in Rwanda, and women's partners also seemed more supportive there.

Table 5.1: Interviewees' Fertility-Related Characteristics[1]

Ever Taken Measures to Prevent Births?

		Bosnia	Rwanda	Total
no	n	20	26	46
	%	43.5%	44.8%	
yes	n	26	32	58
	%	56.5%	55.2%	
Total	n	46	58	104

Currently take Measures to Prevent Births?

		Bosnia	Rwanda	Total
no	n	11	14	25
	%	22%	23%	
yes	n	12	19	31
	%	24%	32%	
not sexually active	n	15	22	37
	%	30%	37%	
menopause or infecund	n	11	2	13
	%	22%	3%	
breastfeeding	n	1	3	4
	%	2%	5%	
Total	n	50	60	110

Which methods have you used to prevent births?[2]

		Bosnia	Rwanda	Total
Abortion	n	12	1	13
Condom	n	7	7	14
IUD	n	7	1	8
Periodic abstinence	n	4	19	23
Pill	n	3	7	10
Sterilization	n	1	1	2
Withdrawal	n	8	0	8

Lifetime Number of Abortions

		Bosnia	Rwanda	Total
0	n	42	62	104
	%	78%	98%	
1	n	3	1	4
	%	6%	2%	
2+	n	9	0	9
	%	17%	0%	
Total	n	54	63	117

1. Some questions did not apply to entire sample.

Table 5.1, cont'd: Interviewees' Fertility-Related Characteristics

Last Pregnancy was a Surprise?

		Bosnia	Rwanda	Total
no	n	18	32	50
	%	44%	56%	
yes	n	23	24	47
	%	56%	42%	
decided by God	n	0	1	1
	%	0%	2%	
Total	n	41	57	98

How did you feel about your last Pregnancy?

		Bosnia	Rwanda	Total
Happy	n	30	34	64
	%	77%	65%	
Unhappy	n	9	14	23
	%	23%	27%	
Indifferent	n	0	4	4
	%	0%	8%	
Total	n	39	52	91

How did your partner feel about your last Pregnancy?

		Bosnia	Rwanda	Total
Happy	n	32	37	69
	%	84%	71%	
Unhappy	n	0	8	8
	%	0%	15%	
indifferent/supportive	n	6	7	13
	%	16%	13%	
Total	n	38	52	90

Want more children now?

		Bosnia	Rwanda	Total
no	n	31	45	76
	%	60%	71%	
yes	n	16	13	29
	%	31%	21%	
Don't know/up to God	n	5	5	10
	%	10%	8%	
Total	n	52	63	115

Table 5.1, cont'd: Interviewees' Fertility-Related Characteristics

If you became pregnant now would it be a problem?

		Bosnia	Rwanda	Total
big problem	n	15	24	39
	%	28%	39%	
small problem	n	7	8	15
	%	13%	13%	
no problem	n	14	7	21
	%	26%	11%	
not possible	n	17	22	39
	%	32%	36%	
Total	n	53	61	114

Rwanda: number of children in household who are genocide orphans

		Bosnia	Rwanda	Total
0	n		45	45
	%		79%	
1-2	n		9	9
	%		16%	
3+	n		3	3
	%		5%	
Total	n		57	57

Own children who died during Genocide

		Bosnia	Rwanda	Total
0	n	31	29	60
	%	100%	76%	
1	n	0	4	4
	%	0	11%	
2+	n	0	5	5
	%	0	13%	
Total	n	31	38	69

Table 5.1, cont'd: Interviewees' Fertility-Related Characteristics

Family members who perished during war/genocide

		Bosnia	Rwanda	Total
0	n	25	10	35
	%	66%	18%	
1	n	8	6	14
	%	21%	11%	
2-4	n	5	20	25
	%	13%	36%	
5+	n	0	20	20
	%	0%	36%	
Total	n	38	55	93

Did your ideal number of children change after the war?

		Bosnia	Rwanda	Total
no	n	26	23	49
	%	63%	39%	
yes	n	10	12	22
	%	24%	20%	
no ideal	n	5	24	29
	%	12%	41%	
Total	n	41	59	100

Ever been forced to have sex?[3]

		Bosnia	Rwanda	Total
no	n	16	23	39
	%	100%	62%	
yes	n	0	14	14
	%	0%	38%	
Total	n	16	37	53

3. Due to the cultural sensitivity of this question and presence of other persons during the interview it was not possible to ask this question of all respondents. In Bosnia several genocide widows and concentration camp survivors seemed to allude to rape but would not admit to it when asked, which comports with what social workers and a psychiatrist told me about their clients who are rape survivors. In Rwanda three of the women who said they were raped were encountered through the regular household survey

More of the women I interviewed in Bosnia wanted additional children than in Rwanda. In fact every childless woman I interviewed in Bosnia expressed a desire to have a child, which seemed somewhat surprising given the low fertility rate in that country. As research on unintended pregnancy has shown, the *aspiration* for a particular reproductive outcome (non-birth, or in the Bosnian case, a birth) does not necessarily translate into *behavior* that would produce that outcome. Some goals and dreams go unfulfilled. The path to realizing them remains elusive. A woman can remain unmarried in her late 30s or beyond and still *desire* a baby. Desires and behaviors may remain at a crossroads.

In Rwanda 12 of 57 respondents (21%) currently fostered genocide orphans in their household. Nine respondents also had children who perished during the genocide. In Rwanda, there did seem to generally be a 'replacement effect' whereby women who had lost children or births would try to have additional children later on—this pattern was confirmed by Schindler and Brück (2010)—but the 'replacement effect' seemed to be tempered by the extent to which families fostered genocide orphans. It is estimated that hundreds of thousands of Rwandan orphans were informally fostered after the genocide (Women's Commission for Refugee Women and Children 1997). My interviewees who fostered orphans tended to discuss the unaffordability of school fees and the difficulty of providing food and shelter for multiple children. A handful of women in both Bosnia and Rwanda had suffered a miscarriage during wartime or while they were refugees; however, there did not seem to be a clear effect on their decision to have a subsequent birth.

5.3 Causal Pathways

Although a fertility decline on par with that experienced during famine or war seems reasonable to expect during genocide, there are ways in which genocide might be unique in its effects on demographic trends. The phenomenon of mass rape during campaigns of ethnic cleansing has become increasingly visible over the past two decades, and may temporarily increase short-term birth rates. Fertility trends are also affected by infant/child deaths, forced migration, widowhood, the availability of healthcare and family planning, and other factors. Genocide drastically reduces reproductive opportunities by separating husbands and wives from each other for long periods of time, particularly among refugees and IDPs who were not resettled for several years afterward.

The World Health Organization reports that during disasters, women suffer disproportionate health effects such as stillbirth, premature delivery, sanitary difficulties stemming from social taboos about menstruation, and differential access to relief services (2002). Yet there has been no evidence to date suggesting these small-scale trends affect overall fertility rates at the beginning of a war. War does tends to disrupt daily routine, and in many cases separates husbands (soldiers, economic refugees, civilian targets) and wives from each other. Couples are also likely to postpone marriage during a war much as they do during famine.

Table 5.2 presents a set of factors that might cause fertility to increase or decrease in response to genocide. I group them according to Davis and Blakes' (1956) intermediate fertility variables framework: factors which affect intercourse, conception, or gestation.

Attachment theory posits that humans have evolved to seek proximity to caregivers or partners in response to external threats and stresses. Doing so is an evolutionary trait that aids their survival as well as that of their offspring (Bowlby 1969). Hence crises may engender romantic relationships and trigger the desire to reproduce. If the crisis or hostile environment continues over a sustained amount of time, some researchers argue that attachment would "foster a reproduction strategy focused on mating over parenting, with earlier and more frequent reproduction." (Cohan and Cole 2002: 16).

In addition to the causal pathways outlined in Table 5.2 there may also be a 'survivor bias': women who perished may have had different reproductive propensities even before the war. In both countries the targeted ethnic group (Tutsis, Muslims) was on average more educated, more urban, and slightly wealthier than the aggressor group (Hutus and Serbs, respectively). Since wealthier and more educated persons generally have fewer children, to the extent that survival bias has an effect on fertility in Bosnia and Rwanda, it would have likely *increased* average fertility rates. But given the poor data that exists about victim characteristics such as marital status, education, and so forth, it is nearly impossible to estimate potential survivor bias.

Table 5.2: Ways in which Genocide may Increase or Decrease Fertility Rates

Intermediate Process	Factors that would Increase Fertility	Factors that would Decrease Fertility
Intercourse	▪ Rape ▪ "Attachment" theory: humans seek intimacy during conflict[68] ▪ Transactional sex and/or marriage[69] ▪ Desire to replace infants[70] and family members lost during genocide	▪ Widowhood ▪ Mass conscription [spousal separation] ▪ Separation during displacement or refugee conditions[71] ▪ Famine, disease, ill-health ▪ Survivors of rape or sexual mutilation lose interest in sex or are rejected by potential mates[72]
Conception	▪ Decreased availability of contraception ▪ Conscious discontinuation of contraception or "natural" methods due to risk of separation[73] ▪ Ethnic groups that feel threatened develop pronatalist norms[74] and discontinue contraception	▪ Conscious postponement of births due to economic insecurity ▪ Temporary sterility due to famine, disease, violent rape, trauma[75]
Gestation	▪ Decreased availability of abortion	▪ Increased miscarriages due to famine, disease, etc. ▪ Higher demand for abortion

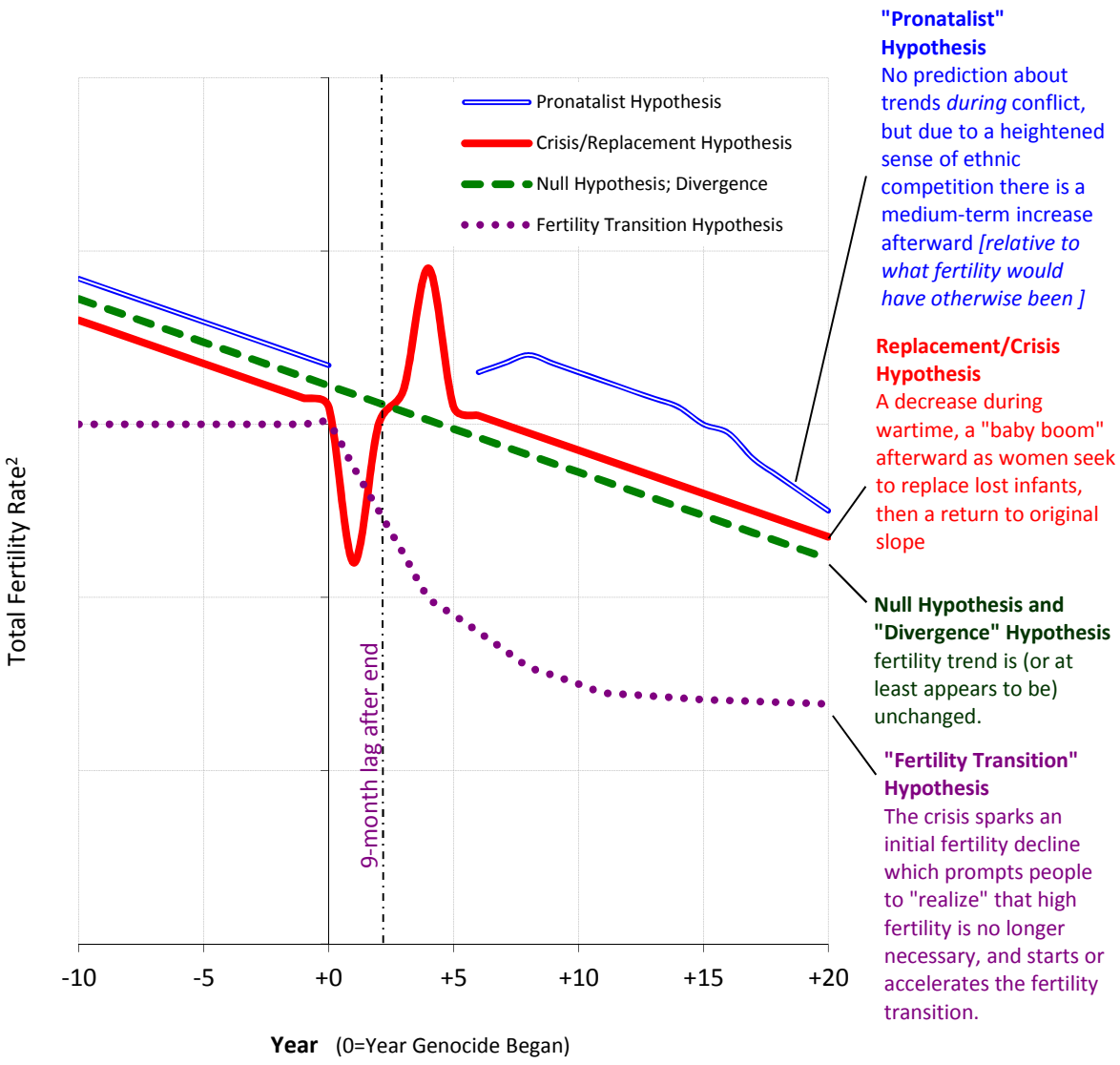
It is instructive to consider what types of overall changes in the total fertility rate might be expected during and after wartime. Figure 5.1 shows four hypothetical post-war fertility scenarios. Fertility rates have been declining the world over for the past few decades, so

[68] See Bowlby (1969).
[69] During natural crises and war, in order to survive women often exchange sex for food, security, or other necessities. This trend has been documented in Rwanda (Twagiramariya and Turshen 1998). I use the term 'transactional marriage' because in religious cultures such as Bosnia and particularly in Rwanda the prohibitions against premarital sex are strong even during wartime.
[70] Civil conflicts often increase infant mortality because transport of food and outreach of healthcare is disrupted (Urdinola 2004).
[71] Including long journeys as refugees, lack of privacy in collective housing, and lack of shelter altogether (such as Rwandans who hid in swamps or lived in the forest during the genocide).
[72] Hynes (2004), Snyder et al. (2006).
[73] Three of my respondents reported that they intentionally discontinued contraception or periodic abstinence in the early part of the war because their husband was conscripted into the army or at imminent risk of death (Srebrenica) and they wanted to give birth.
[74] Anson and Meir (1996) and Fargues (2000)
[75] See Kane (1987) and Lindstrom and Berhanu (1999).

changes discussed below are *above and beyond* any pre-existing trends—for example, factors prompting an increase in fertility might only show up as a *slowed decrease*.

The *null hypothesis* is that the fertility trend is unchanged, or at least appears to be unchanged because divergent effects at the sub-national level cancel each other out at the aggregate level. The *crisis/replacement hypothesis* suggests that births are postponed and lost during wartime, and that there is a baby boom afterward, due to both delayed births and out of a desire to replace infants and children who perished. Infant and child deaths have been shown to increase fertility rates in many different contexts (Ben-Porath 1976; Legrand and Barbieri 2002; Pörtner 2001). The *pronatalist hypothesis* suggests that due to a heightened sense of ethnic tension after war (and to 'make up' for overall population losses incurred), there is a medium-term increase in fertility relative to what it would have been otherwise. The *fertility transition hypothesis* is that the crisis sparks an initial fertility decline which makes people realize that fertility can be controlled, and thus prompts or accelerates the fertility transition. Such a mechanism has been proposed in Ethiopia (Blanc 2004; Lindstrom and Berhanu 1999) and in Cameroon (Eloundou-Enyegue, Stokes and Cornwell 2000).

Figure 5.1: Hypothetical Post-Genocide Fertility Scenarios[1]



1. The number of years over which these effects would be expected depend on a large number of factors. For example, genocides often follow several years of political and economic instability, so fertility levels may have already been responding to a generalized 'crisis' before violence began. There will likely be continued instability and hardship for much of the population long after violence officially ends.
2. The Total Fertility Rate (TFR) is the hypothetical number of children a woman would bear over her lifetime if she gave birth at current age-specific fertility rates.

In the next section I explore estimated fertility rates before, during, and after war and genocide in both countries. While multiple scenarios may occur simultaneously over many years, it is useful to examine overall trends.

5.4 Total Fertility Rates [TFRs]

It is difficult to draw strong conclusions from descriptive data on national trends that might be caused by many different factors, but we can certainly explore whether the post-genocide fertility patterns in Bosnia and Rwanda conform to any of the hypothesized scenarios that were shown in Figure 5.1. Figure 5.2 shows the general trends in Bosnian and Rwandan fertility rates according to four sources: World Population Prospects 2006, 2008, and 2010 (United Nations 2007; 2009; 2011) and national sources including survey data from Rwanda and vital registry data from Bosnia. Fertility data from three revisions of United Nations World Population Prospects data are displayed because estimates have changed substantially for both countries during the past four years.

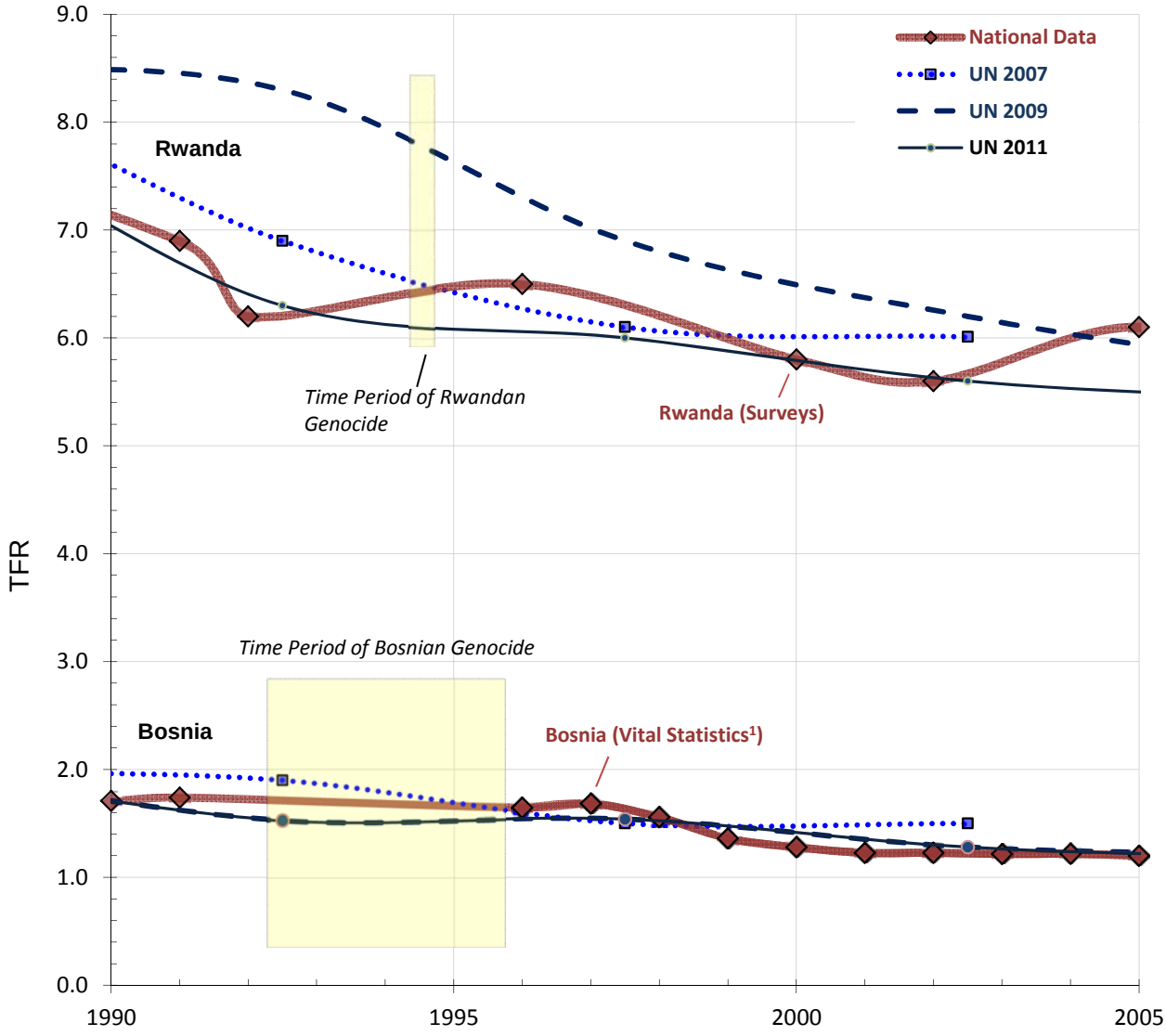
According to the United Nations both countries had decreasing fertility rates throughout the period. National sources show a slight increase in fertility after the war in each country followed by an eventual decline. Prior to the onset of war in 1992, Bosnia had completed its demographic transition and had a TFR of 1.9 children per woman; meanwhile, Rwanda had the fifth highest fertility level in the world at 7.8 children per woman (United Nations 2011).

In Figure 5.2 the United Nations estimates of Bosnian and Rwandan fertility before the war both decrease during later revisions—in the case of Rwanda, the revision downward was often by one or more births per woman. It should be noted that the United Nations tends to be interested in long-term trends, not in reflecting short-term fluctuations. The UN does not reveal its methods for adjusting estimates from survey data, but it seems clear that their model tends to fit the data to the null hypothesis by assuming that a sharp increase or decrease is unlikely to have occurred. It is worth noting, however, that the fertility decline in Rwanda as a proportion of the original TFR is only slightly higher than the fertility decline seen in sub-Saharan Africa as a whole during the same period.[76]

The difference in magnitude of the change in the number of births per woman between both countries is striking. While in Rwanda we would have predicted a decline in fertility due to the demographic transition, in Bosnia, the proportional decline in fertility rates was quite large. Bosnian fertility rates are now among the lowest in the world.

[76] During the same period, the total fertility rate in sub-Saharan Africa declined from 6.10 to 5.76 and in East Africa from 6.25 to 5.89 (United Nations 2005).

Figure 5.2: Comparative Fertility Rates in Bosnia & Rwanda, 1990-2005



1. Bosnian vital registry did not report births for the 1992-1995 period.

Sources: UN Data from United Nations World Population Prospects (2007; 2009; 2011). Bosnian Vital Registry Data from: Savezni Zavod Za Statistiku [Yugoslavia] (1992), Bosnia i Hercegovina Federalni Zavod za Statistiku (1998), and Bosna i Hercegovina Agencija za Statistiku (2006). Rwandan Survey Data from: Office National de la Population (1985); Office National de la Population and ORC Macro (1993, 2001, 2006); Rwandaise Service National de Recensement (1994; 2005); and Rwandaise Direction de la Statistique (2002).

Both the national and international estimates of Rwandan fertility rates show that Bosnia never returned to its pre-war rate of 1.74 births per woman, although it did come close to that amount in the three years after the war. In Rwanda the national survey data showed a small increase in fertility rates two years after the genocide ended. In Rwanda the Demographic and Health Surveys [DHSs] (Institut National de la Statistique du Rwanda [INSR] and ORC Macro 2006; Office National de la Population [Rwanda] and ORC Macro 2001) and the 1996 postwar survey funded by UNFPA (Rwandaise Direction de la Statistique 2002) appear to depict a rebound of fertility after the genocide and then a less dramatic decline from 1996 to 2002. From 2002 to 2005, fertility appears to increase, but it is difficult to discern short-term patterns from these general rates.

With a current total fertility rate (TFR) of 1.2 children per woman, Bosnia is ranked as having among the lowest fertility rates in the world (United Nations 2011). However, there has not been a census in Bosnia since 1991. When I visited statistical offices there during the course of my fieldwork I was told that they were not allowed to reveal any population estimates they had made by age structure. This suggests a rather extreme uncertainty about the population composition.

5.5 Retrospective Birth Trends

For obvious reasons accurate birth records are generally not kept during war. Hence to ascertain fertility changes during the genocide I rely on retrospective surveys where women are asked for the date of birth of each child. The data are of much higher quality in Rwanda than in Bosnia. Rwanda has had three waves of the DHS after the genocide, each of which obtained complete birth histories from around 10,000 women. Yet no fertility surveys have been conducted in Bosnia since the war.[77] Hence in Bosnia I rely on the Living Standards Measurement Survey [LSMS] (2001-2004) and the Multiple Indicator Cluster Survey (2001), both of which asked about the birth dates of resident children. The obvious problem with the Bosnian data is that children who have died or are living elsewhere are not included in the tabulation. However child and infant mortality has been relatively low in Bosnia (even during the genocide) and child fostering is not a common practice, so dates of birth from resident children are likely to be a fairly accurate indicator of prior births.

Using these surveys I rely on birth *counts* rather than fertility *rates*. Fertility *rates* are generally calculated over five-year periods and hence not very sensitive to short-term trends. While it is hypothetically possible to calculate fertility rates over very short periods of time, the age adjustments necessary tend to artificially introduce a high degree of variation. On the other hand, fertility *counts* are quite responsive to short-term effects. They also include births to

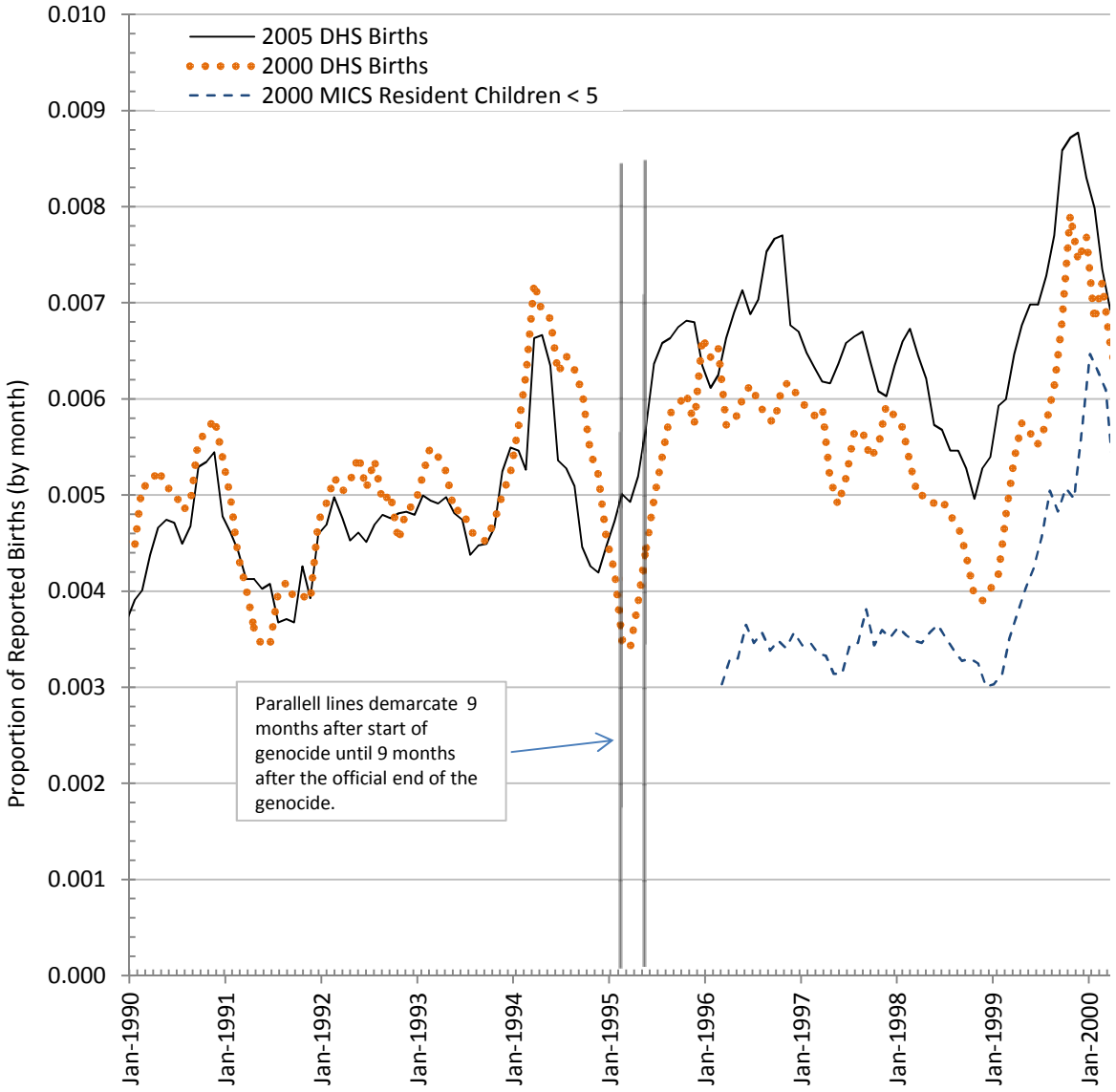
[77] There was a Multiple Indicators Cluster Survey (MICS) conducted by UNICEF, but it mainly focused on recent births and infant mortality rather than establishing a fertility history for each woman.

women who may have been displaced or abroad when they gave birth and have since returned to their home country. Birth counts do not factor into account the age structure and the overall population of women in each country, but because they are reported by the same population of surviving women, the casualty rate is only important in terms of survival effects.

Births exhibit strong seasonal trends in the U.S. (Land and Cantor 1983) and in many other countries as well. I seasonally adjusted the data from Rwanda and Bosnia using the ARIMA X-12 program from the U.S. Bureau of Labor Statistics. [78] Figure 5.4 shows Rwandan births from the 2000 DHS and from the 2005 DHS. Births are shown as a proportion rather than as an absolute number due to the differing sample sizes across surveys. Two vertical lines demarcate the period starting nine months after the start of the genocide (April 1994) until nine months after the refugee crisis subsided (September 1996).

[78] In Rwanda, due to the dramatic events from April to July of 1994, seasonal weights were calculated based on data from 1985-1993 and 1995-2004.

Figure 5.3: Seasonally-Adjusted Rwandan Births by Month, 1988-2001[1]



1. Counts of births have been seasonally adjusted using the Bureau of Labor's X12-Arima program**.** Due to differences in sample sizes across surveys, these birth counts were then divided by the total number reported during that period in each survey to produce a proportion rathe r than counts. These lines were then smoothed by 3-month averages to produce the lines shown here.

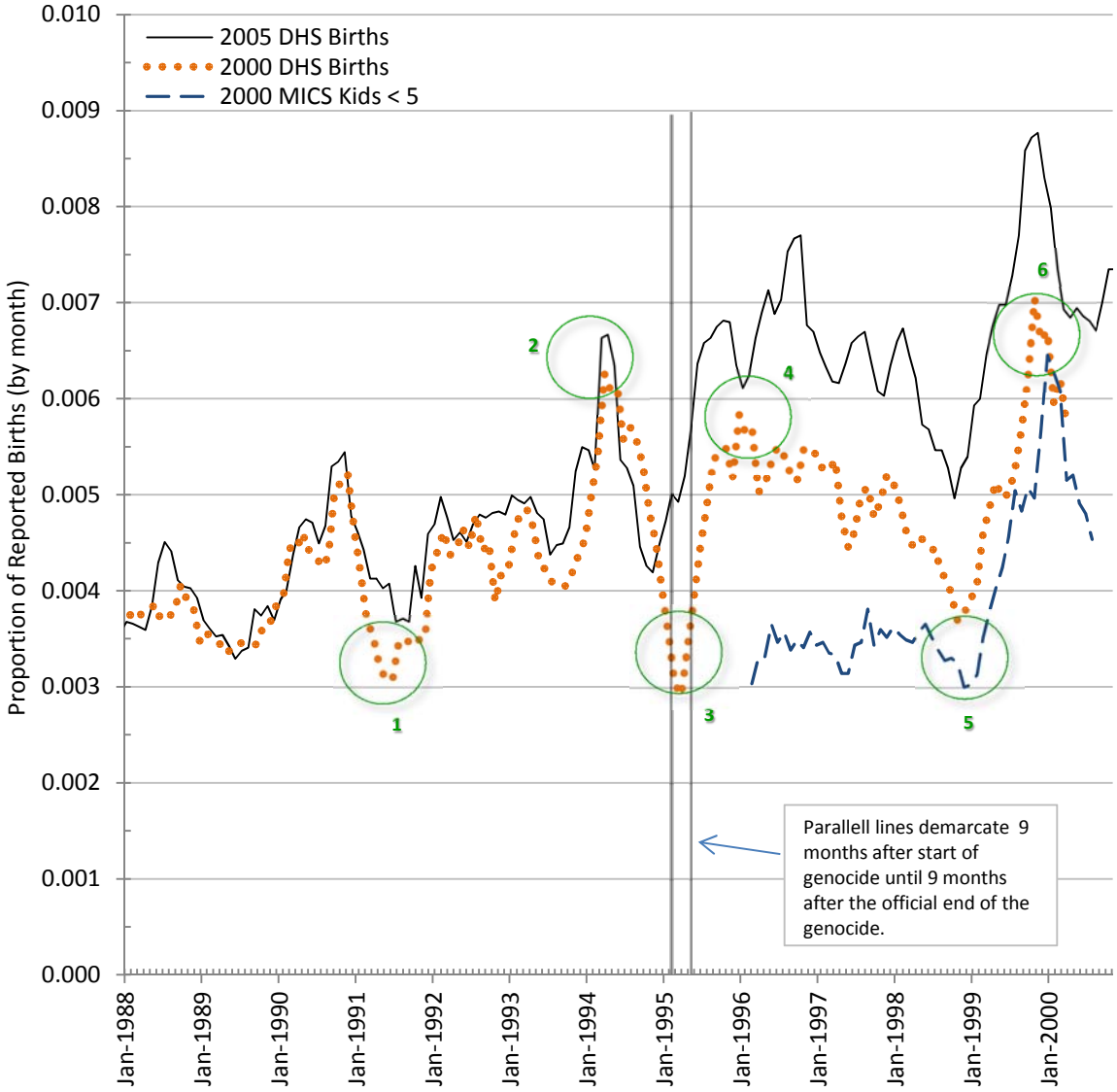
SOURCES: Author's calculations using data from Rwandan Demographic and Health Surveys (2000, 2005) and Rwandan Multiple Indicator Cluster Survey (2000).

Figure 5.3 shows a puzzling peak in births near the start of the genocide (April 1994). A report by the National Research Council (2004) on war and fertility analyzes retrospective speculated that the peak in 1994 births may have been driven by women's tendency to push birth dates back more than five years to avoid answering additional questions about children under 5. The new data from the 2005 DHS, however, are not subject to the same type of bias but also show a similar (but reduced) peak in April of 1994.

One explanation for the peak in births in April of 1994 has to do with recall problems of months and dates as mentioned earlier. In a culture where much of the population is illiterate and western time is not a common frame of reference, the start of the genocide was such a pivotal moment that it may have been easy for women to report births 'near' the start of the genocide as occurring in that exact month for lack of a better way of guessing the month.

Figure 5.4 shows how other historical turning points align with some of the trends in birth counts from Figure 5.4. Here I suggest that the peak in births in April of 1994 may have to do with the Arusha peace accords that were signed in August of 1993, which—after the low-level civil war from 1990 to 1993, may have signaled a new era of stability.

Figure 5.4: Seasonally-Adjusted Rwandan Births in Relation to Historical Events, 1988-2001



Notes and Sources: See previous chart

1. Nine months after first RPF invasion into Rwanda (October 1990)
2. Nine months after Arusha peace accords between RPF and Rwandan government signed (August 1993)
3. Nine months after the assassination of President Habyarimana and the start of the genocide (April 1994)
4. Eleven months after the RPF seizes power (July 1994); nine months after the arrival of over 800,000 formerly exiled Tutsis.
5. Seven months after invasion of *Bacengezi* (ex-FAR and former Interahamwe who fled to Eastern Congo and began attacking Northwest Rwanda in mid-1997) escalates and hundreds of thousands displaced. It is during the highlighted period that IDPs in Northwest Rwanda peak at 652,000.
6. Nine months after first post-genocide elections [local elections] held in March 1999, also in early 1999: defeat of *Bacengezi*, governmentt officials accused of corruption are dismissed.

The peaks in Figure 5.4 correspond with 9 months after the Arusha Peace Accords were signed between both sides, after genocide ended, and after the post-genocide election and the defeat of the *Bacengezi*[79], an armed rebel group that repeatedly attacked Western Rwanda from the Democratic Republic of the Congo, causing the displacement of over 600,000 persons by late 1998 (Chaâbane 2000) . On the other hand there are clear dips in births after the first RPF invasion in 1990, after the start of the genocide, and after the escalation of the war with Bacengezi.

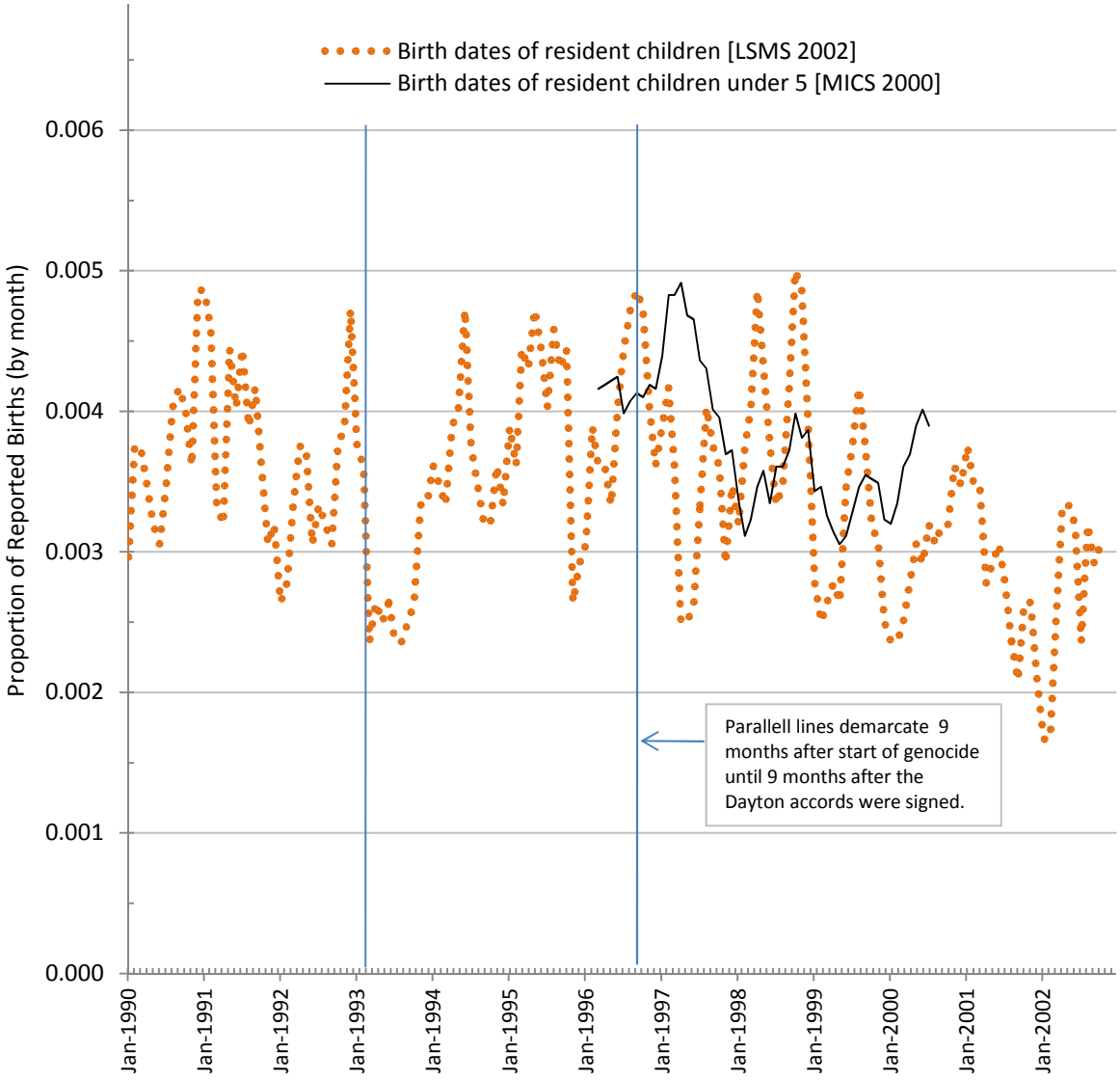
Retrospective Bosnian birth rates are more difficult to piece together due to the limitations of the LSMS, discussed above. Figure 5.5 tabulates the birth dates of nearly three thousand Bosnian children whose households were sampled in two waves of the LSMS[80] and in UNICEF's 2001 Multiple Indicator Cluster Survey. As with the Rwandan data, I indicate a proportion of reported births rather than a count to adjust for differing sample sizes.

Figure 5.6 plots the same birth count data from Figure 5.6 but here key turning points of the war are identified. In Figure 5.5 there is also a drop in births 9 months after the invasion and after the Serbian attacks on U.N. "safe areas." The peaks in Bosnian births coincide with nine months after additional peacekeepers arrive and NATO air strikes begin; after the Serb assault on Gorazde was halted; after the Dayton accords; after the coalition government was established, and after the elections.

[79] Local term for "infiltrators" – the Interahamwe and ex-FAR forces who regrouped in the Eastern Congo after the genocide and led armed border incursions into Rwanda for many years afterward.

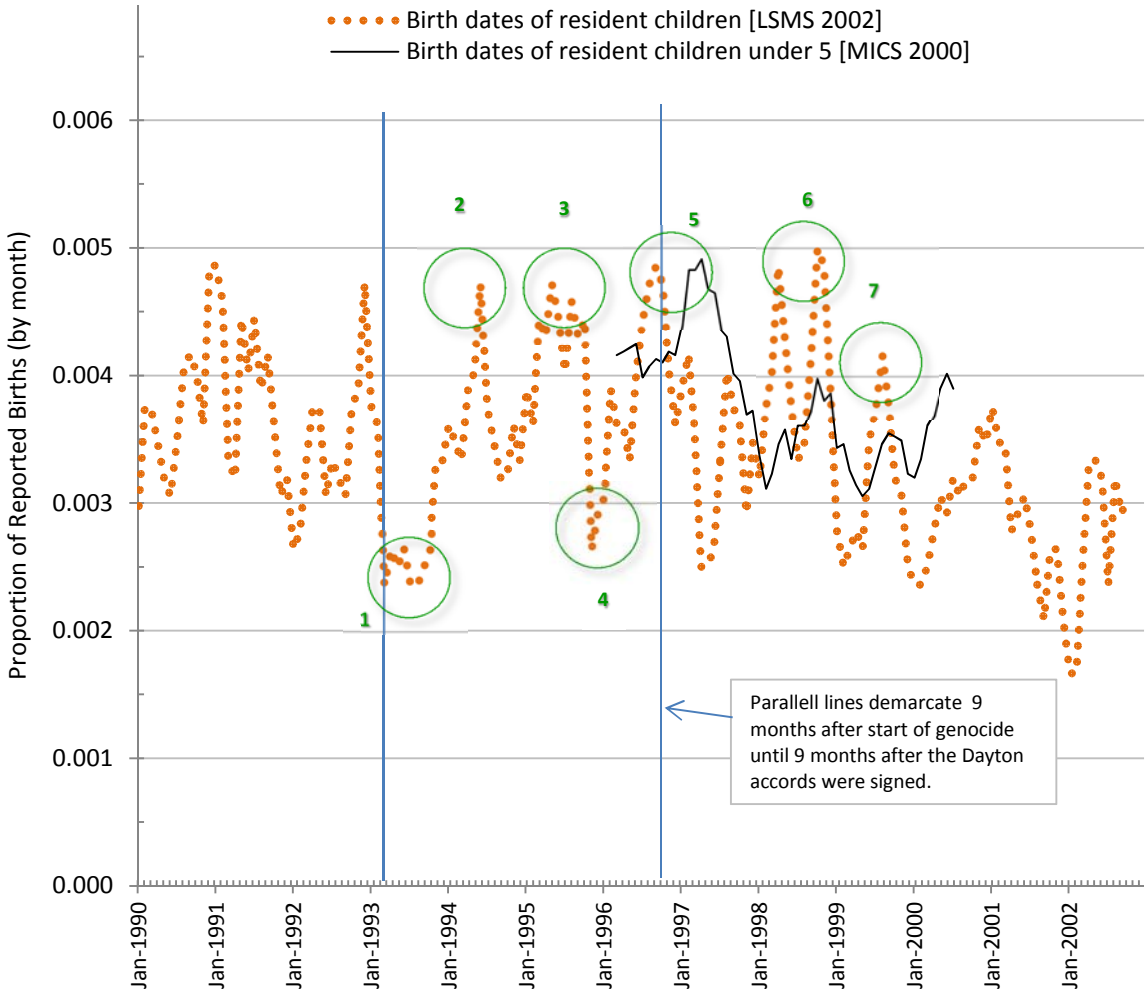
[80] The survey samples the same households once per year from 2001 to 2004. A "child" is defined as a person under 25 living with his or her mother. Birth dates of children who have died or are living elsewhere are therefore excluded, however child mortality is relatively rare in Bosnia and most young adults reside with their parents well past the age of 20.

Figure 5.5: Seasonally-Adjusted Proportion of Bosnian Children Born by Month. 1990-2002[1]



1. Neither the Multiple Indicator Cluster Survey [MICS 2000] nor the Living Standards Measurement Survey [LSMS 2002] ask women for complete birth histories, hence tabulation of "births" is based on the dates of birth of resident children in the household. Children who have died or are living elsewhere are not recorded. However child mortality has been quite low in Bosnia , even during the genocide, and child fostering is not common. Counts of resident children were seasonally adjusted using the Bureau of Labor's X12-Arima program. Due to differences in sample sizes across surveys, these birth counts were then divided by the total number reported during that period in each survey to produce a proportion rather than birth counts. In the case of the MICS survey which only provides birth dates for a five-year period, the monthly proportions were adjusted to account for the shorter timeframe compared to that used for LSMS data (22.5 years). These lines were then smoothed by 3-month averages to produce the lines shown here.
SOURCES: Author's calculations using data from Bosnian Living Standards Measurement Survey [LSMS] (2001, 2002) and United Nations Multiple Indicator Cluster Survey (2000).

Figure 5.6: Seasonally-Adjusted Proportion of Bosnian Children Born in Relation to Historical Events, 1990-2002



Notes and Sources: See previous chart

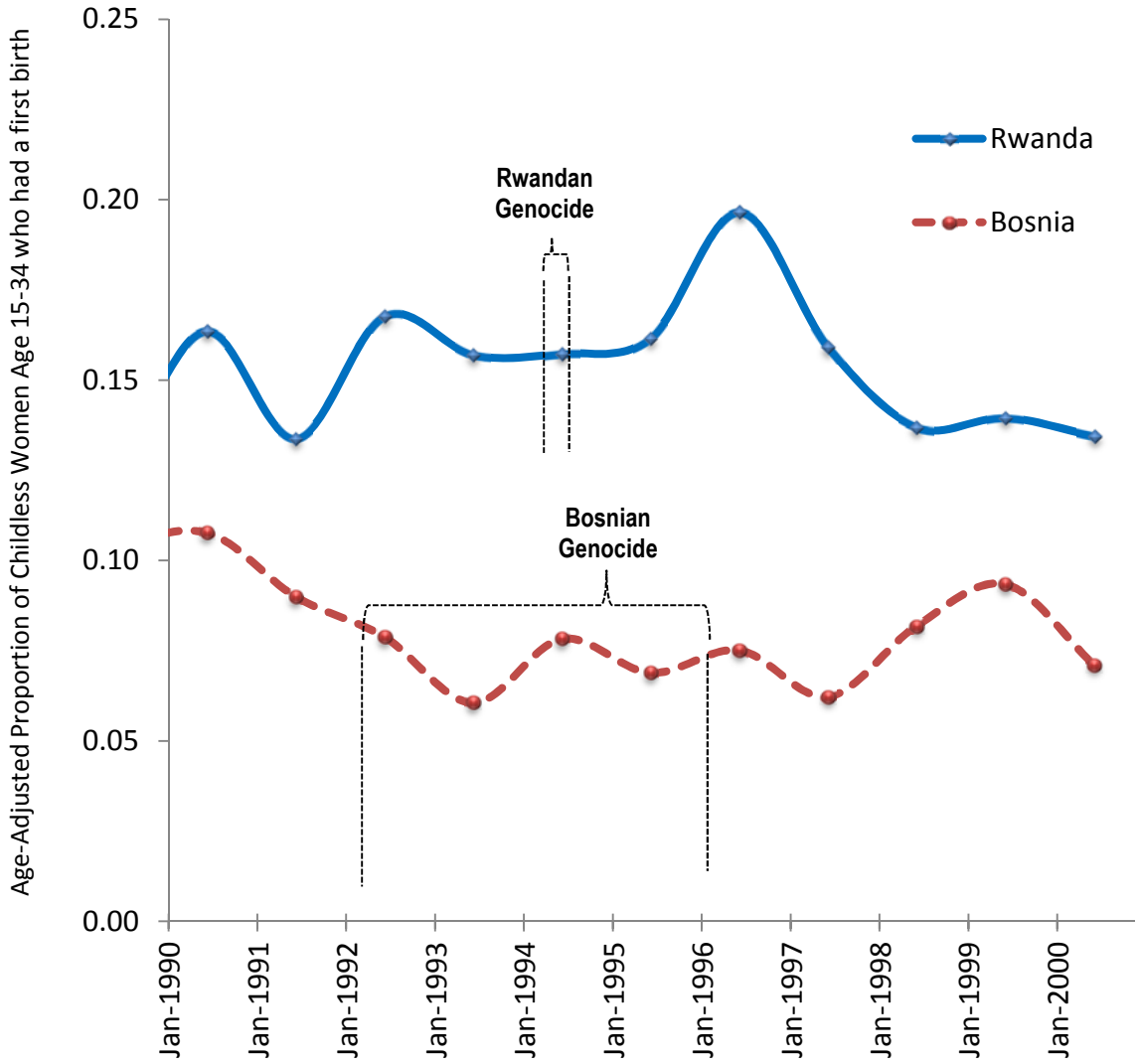
1. Nine months after Bosnia declares independence and Serbian soldiers fire on protesters in Sarajevo (April 1992).
2. Ten months after U.N. Security Council decides to send 10,000 additional peacekeeping troops and authorizes NATO airstrikes (June 1993); eleven months after U.N. establishes six "safe areas" for Bosnian Muslims (April/May 1993).
3. The six-month peak begins nine months after Serb assault on safe area of Gorazde was halted and seven months after a cease-fire agreement. The peak also begins eleven months after a framework for the Federation of Bosnian Muslims and Croats in signed in Washington (March 1994) and one year after the first NATO airstrikes of Serbs(Feb 1994).
4. This drop in births occurs six months after Serbs begin attacking Muslim safe areas, including Srebrenica.
5. Nine months after Dayton Accords signed (December 1995).
6. Nine months after coalition government established and common currency implemented (January 1998).
7. Nine months after first elections in September 1998.

Figures 5.4 and 5.6, which chart birth trends in relation to historical events, have illustrated that birth rates may appear to be sensitive to major historical turning points, as well as to macroeconomic conditions. The degree of political and economic recovery from the genocide in each country has been quite different. Perhaps one major reason why Bosnian birth rates, shown in Figure 5.5, have continued to fall in the wake of genocide (despite having been below replacement level to begin with) has to do with the lack of political and economic progress in the post-genocide era.

Birth counts are suggestive of trends, but it is still desirable to have some type of short-term rate that adjusts for population size and structure. Figure 5.7 shows the age-standardized annual *first birth rate* among women ages 15-34 in both countries. The first birth rate clearly peaks in Rwanda in 1997, following the resettlement of the majority of refugees. In Bosnia there is some variation during the war and a peak three years afterward in 1999. The trend in Bosnia does not comport with the retrospective birth counts, so either it is a trend that was specific to first births or else the sample size is too small. Interestingly, no particular decline in Rwanda is visible, perhaps suggesting that first births are less sensitive to periods of crisis than later births. However there is a clear increase in first births in Rwanda after the war.

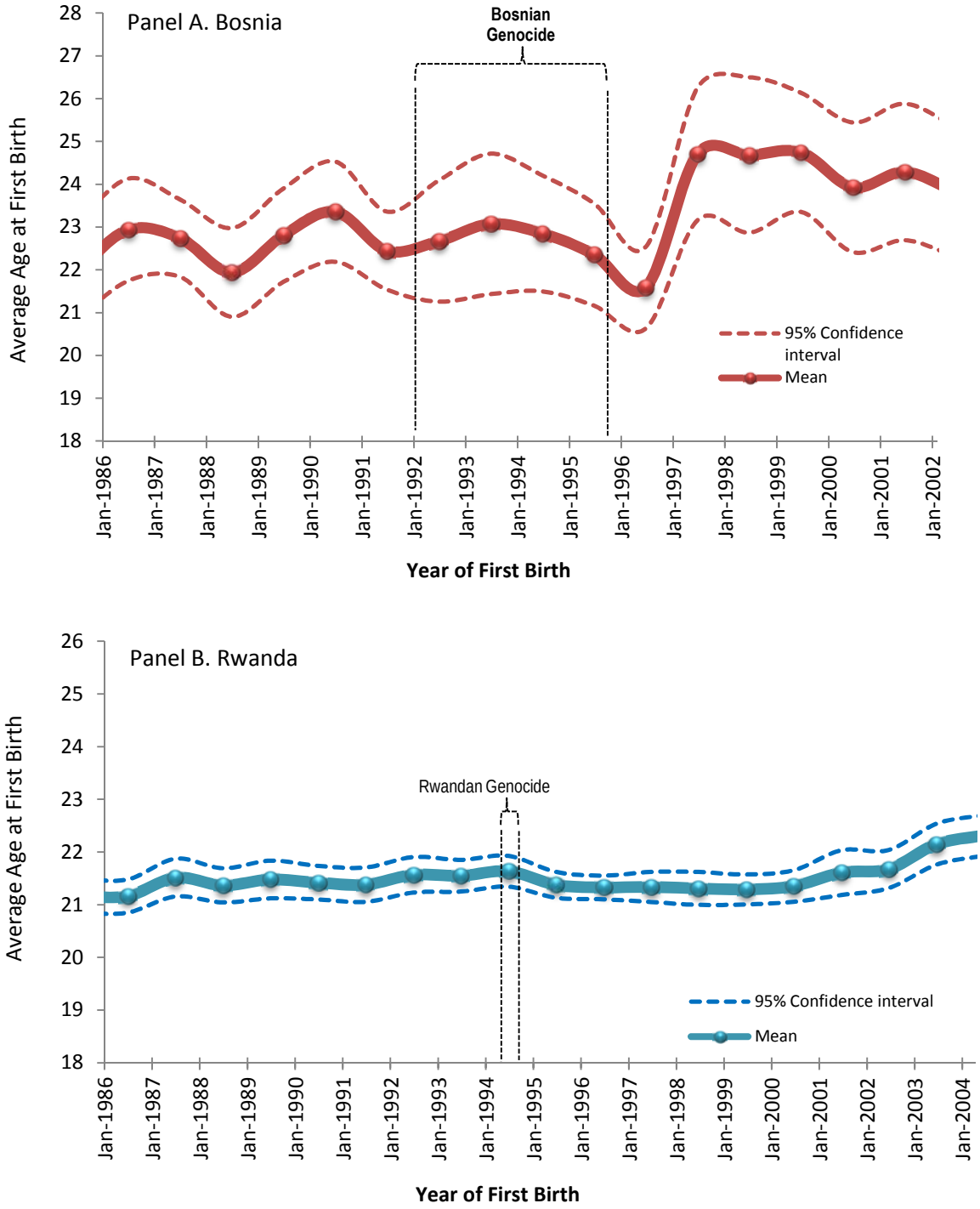
Figure 5.8 shows the average age at first birth in both countries. Despite the large confidence interval, the age trends in Bosnia seem to almost certainly be the result of a heavy delay effect during the war and an increase in births among older women afterward. In Rwanda, on the other hand, there is a small decline in the age at first birth after the war but it largely remains stable.

Figure 5.7: First Birth Rate, Women 15-34, Bosnia and Rwanda



Data from Rwandan DHS (2000; 2005) and Bosnian LSMS (2001, 2002).

Figure 5.8: Average Age at First Birth, Bosnia and Rwanda



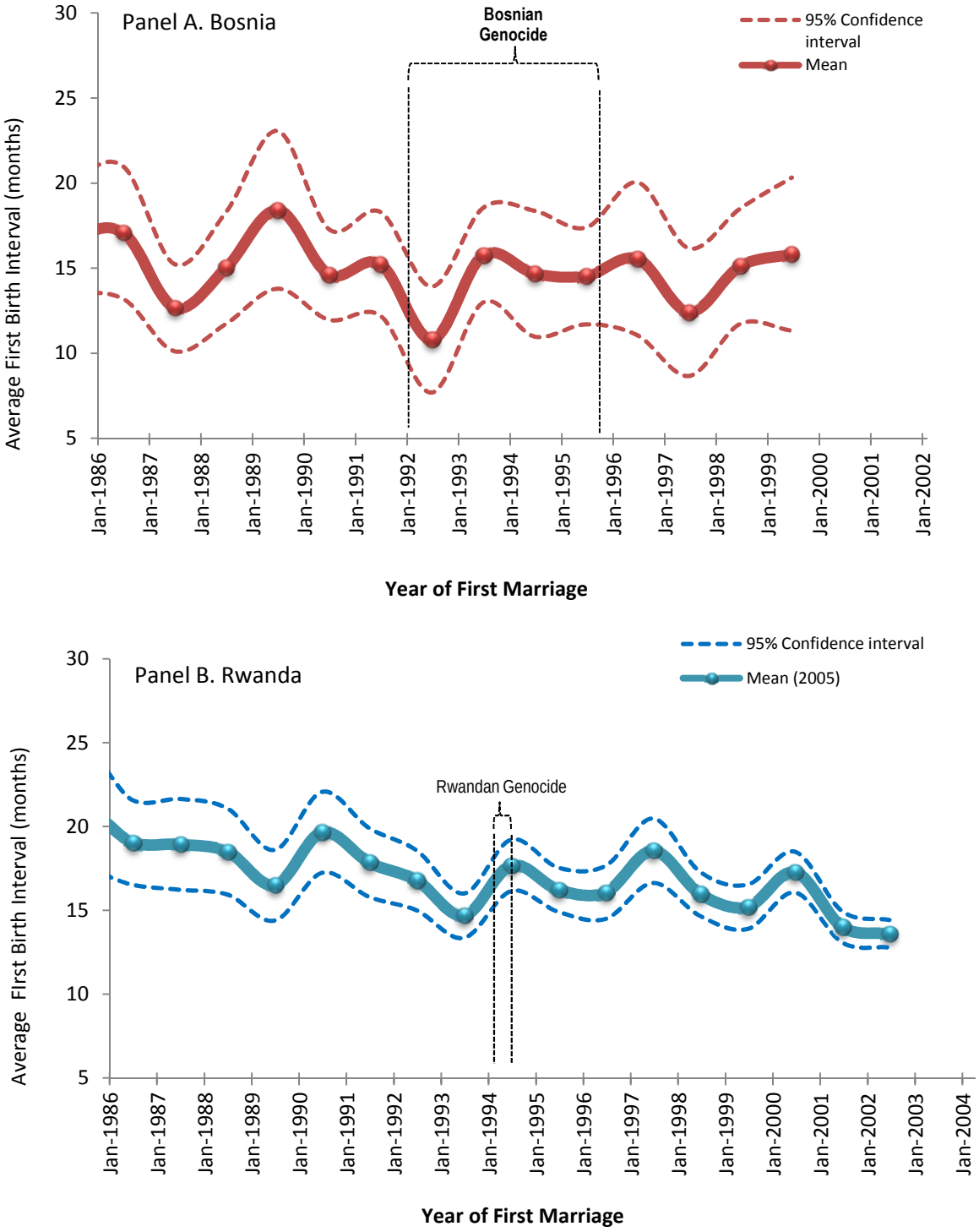
Data from Rwandan DHS (2000; 2005) and Bosnian LSMS (2001, 2002).

Figure 5.9 shows average first birth intervals by year of first marriage. In Bosnia the first birth interval clearly seemed to decline at the start of war. This was consistent with a theme from a few respondents who said that because their husband was conscripted into the local militia they wanted to at least have one child together in case anything happened. One respondent in Bosnia described her decision for having a child at the start of the war:

> I didn't even think about having an abortion at the start of the war. Because I was afraid. My husband was in the war. And I did not know what could happen, so I thought if I had another child then at least I would have another memory of the two of us. That's how I saw it. But after my second child I had three abortions. Two abortions were during the war.

In Rwanda, birth intervals fluctuate from year to year with no particularly clear pattern, except perhaps a slight trend downward over time. First birth intervals were higher during the year of the genocide, which could be consistent with postponement, but they also peaked in 1997 and in 2000, two years without any particular circumstances that would cause an increase in the first birth interval. Hence the data for Rwanda in Figure 5.9 are largely inconclusive.

Figure 5.9: Average First Birth Interval, by Year of First Marriage, Bosnia and Rwanda[1]



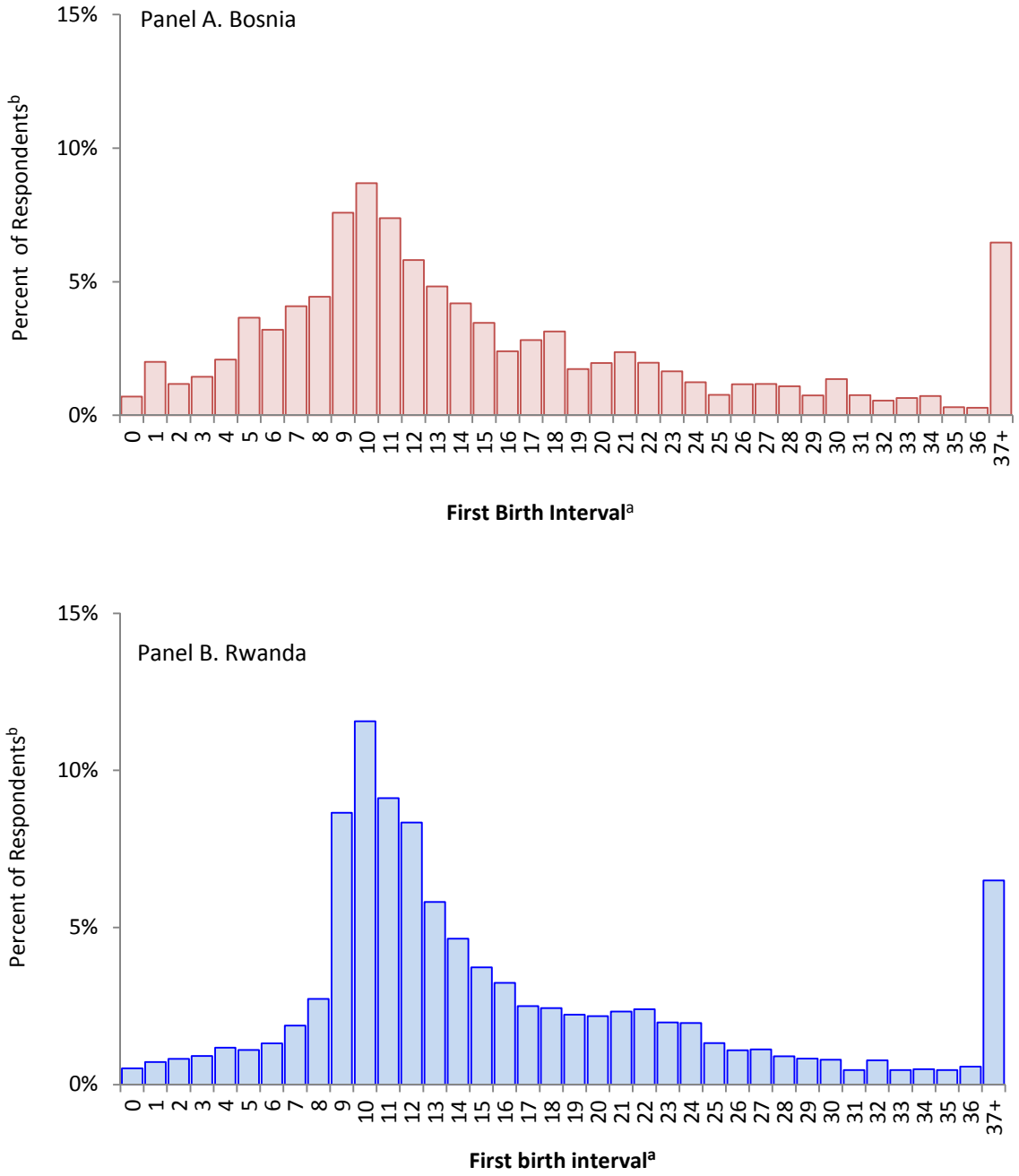
1. Number of months from first marriage until first birth.

To aid in the interpretation of the data, Figure 5.10 shows average age at first marriage and average first birth intervals simultaneously by year of first marriage. Overall it would appear that women in Bosnia restrict their fertility by marrying later but having slightly earlier births, whereas women in Rwanda get married younger but tend to delay their first birth for over a year. Women in Rwanda may control their entry into motherhood more closely than their entry into first marriage, which is consistent with the thesis that women in sub-Saharan Africa regulate their entry into the social category of 'motherhood' moreso than the biological event of birth itself (Johnson-Hanks 2006).

In Bosnia there was also a fairly strong trend toward higher average age at first marriage and lower average first birth intervals after the war. This is suggestive of women who delayed marriage until after the war and then gave births sooner. Bosnian women may have regulated their fertility and nuptiality more than women in Rwanda in response to the conflict. However the duration of war and genocide was certainly much greater in Bosnia, and the economic effects were much longer-lasting.

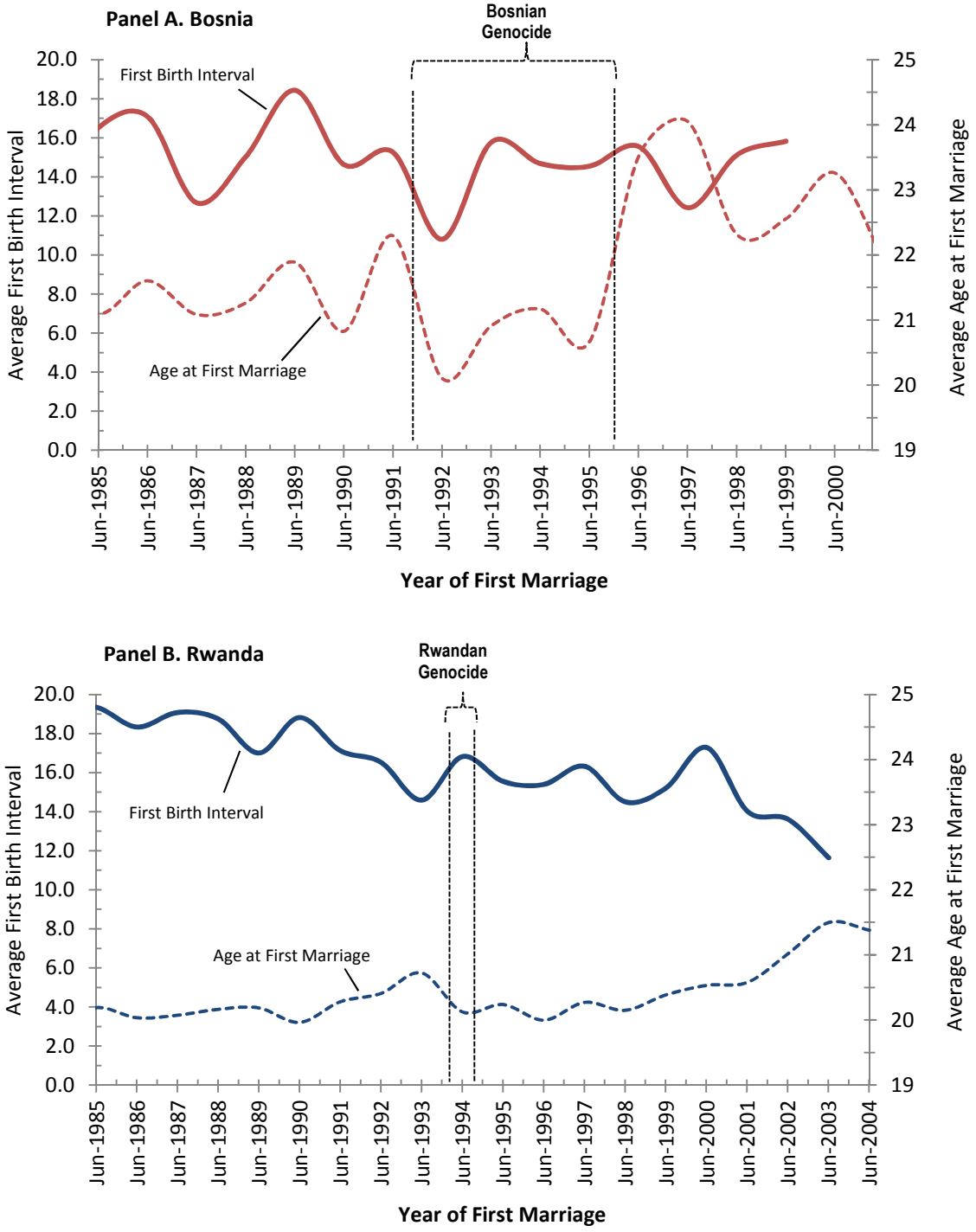
First marriage rates are a key determinant of first births in both countries: only 6% of births in Bosnia and 4% in Rwanda are to unmarried women. However Figure 5.11 shows the monthly distribution of first birth intervals by country among women who had a first marriage and a first birth from 1985 until one year prior to the survey. Here I limited first birth intervals to 36 months (3 years) so that trends in earlier years would be visible. The widest first birth interval was over 120 months (10 years). A nontrivial proportion of first births occurred within the first 8 months of marriage (11% in Rwanda; 23% in Bosnia), suggesting potential reverse causality between pregnancy and marriage.

Figure 5.10: Distribution of First Birth Intervals, Bosnia and Rwanda



a. Number of months from first marriage until first birth. The full range exceeds 120 months.
b. Percent of respondents who had a first marriage between 1985 and 2004 and a first birth which occurred after marriage. In Bosnia, 4.2% of first births were nonmarital; in Rwanda the figure was 6.4%.
Data from Rwandan DHS (2000; 2005) and Bosnian LSMS (2001, 2002).

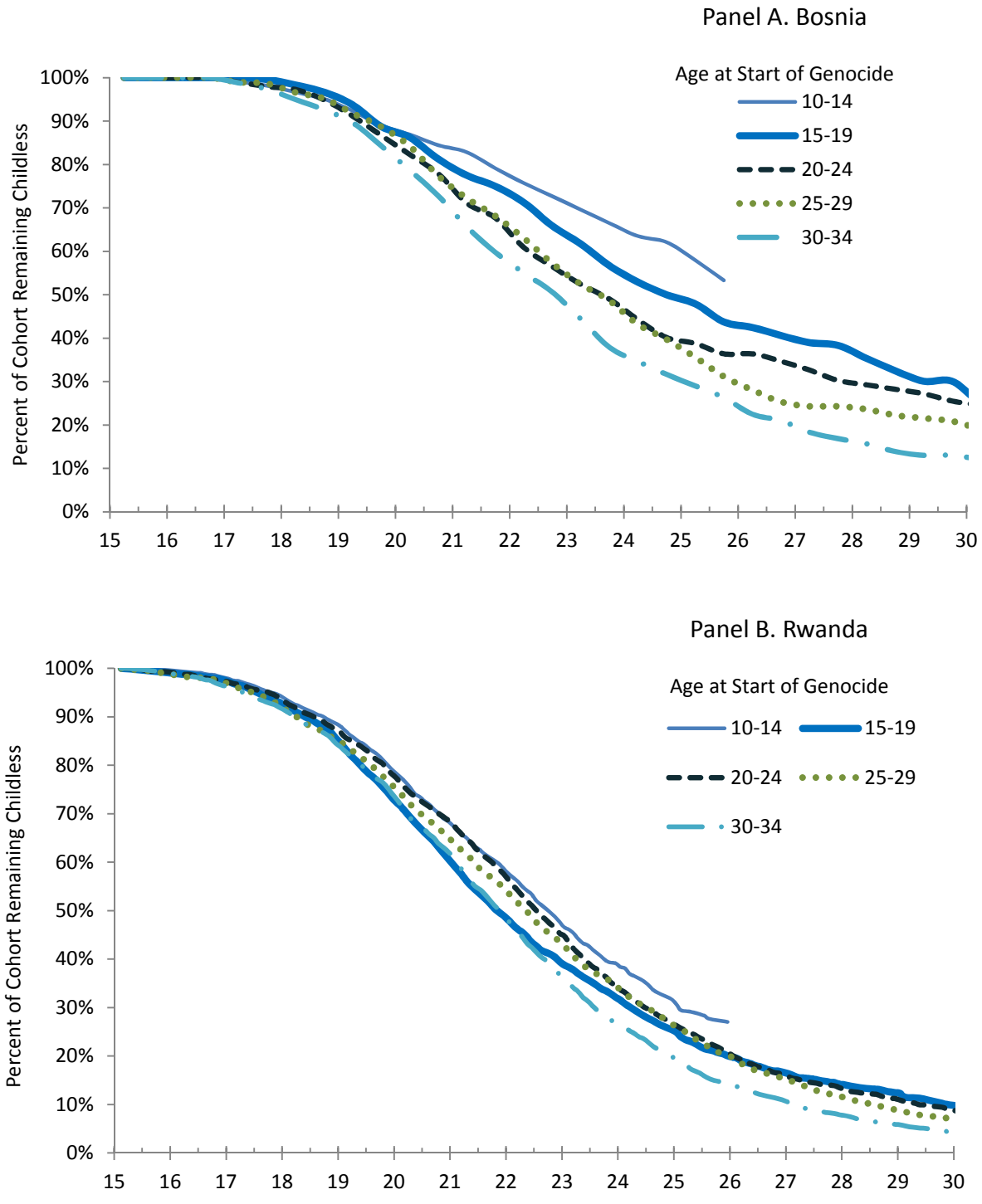
Figure 5.11: Age at First Marriage and First Birth Interval by Year of First Marriage, Bosnia and Rwanda



NOTE: First birth interval calculated among women who married at least two years prior to the survey. Data from Rwandan DHS (2000; 2005) and Bosnian LSMS (2001, 2002).

Figure 5.12 charts the proportion of each birth cohort remaining childless after age 15, shown by their age at the start of the war in each country. Here we can see that Bosnia tended to have proportionate cohort differences, with a larger proportion of each cohort remaining childless at any given age. Meanwhile in Rwanda, the cohort of women aged 15-19 at the time of the genocide had first births at younger ages than the prior two cohorts. This is consistent with the notion that women may enter the marriage market earlier when the 'supply' of men is dramatically reduced, as I discuss in the marriage chapter. Figure 5.12 also shows that the assumption of proportional hazards between cohorts is violated in Rwanda, and for this reason I pursue logistic regression rather than Cox hazard regression.

Figure 5.12: Proportion Remaining Childless after 15 by Age at Genocide Start



Data from Bosnian LSMS (2001, 2002) and Rwandan DHS (2000, 2005).

The next section examines causal trends that may underlie some of the patterns shown in the descriptive charts.

5.6 Causal Analysis

In this section I review causality according the four broad groups of factors that I analyzed in Chapter 4: (1) involuntary factors, (2) material and economic factors, (3) sex and gender role factors, and (4) psychosocial factors. With fertility many of these factors are interlinked, moreso than with nuptiality, so this typology should be considered suggestive rather than strict. For example access to family planning may be considered an involuntary factor (caused by external circumstances), a material deprivation, and a comment on the status of women—whether there is continuing high demand for 'modern' contraception, how much women are empowered to take charge of their sexual decisions, and so forth. The grouping of factors is not meant to be strict.

5.6.1 Involuntary Factors

There are several involuntary types of involuntary circumstances during wartime that may affect fertility rates: spousal separation, mass rape, access to family planning, miscarriage and infecundity, and infant mortality and replacement.

Spousal separation

When spouses are separated by war and genocide the chances for conception are dramatically reduced. Couples may be separated during the process of fleeing their homes, due to military involvement among husbands, or for other reasons. And naturally traveling back and forth to visit each other is generally not possible upon separation. One woman in Bosnia told me how her husband was stationed near a national border and sent her and the children to live on the other side. During the weekends he would swim across to visit them.

In Rwanda the most common reason for separation, at least among Tutsi respondents, was that men and women separated to increase their chances of survival:

> We were separated by the war. Everyone fled in different directions, the lucky ones would survive and the unlucky would be killed. We got separated because like most men my husband did not want to hide with women because they had crying babies who would make them get trapped and killed. The men decided to hide in different places from women. So I do not know where or how he was killed...

As in this case, spousal 'separation' during wartime—particularly in Rwanda as well as in Srebrenica—was made permanent through death. In other cases couples went to refugee or IDP camps together. It is unclear how many couples were separated by war and for what length of time. Conscription in Bosnia did not necessarily imply separation.

As described in the previous section, in Bosnia the decline in the first birth interval may be connected to the high rates of male conscription hastening the decision to have a first birth. A handful of respondents alluded to this theme, and perhaps it is characteristic of a long and drawn-out war. In Rwanda, on the other hand, the genocide started very quickly and within the span of a few days the death toll was very high, so it would have been impossible for spousal separation to induce additional births.

Mass Rape

Genocidal ideology labels a civilian population as 'the enemy' that it seeks to destroy, and invariably an effective way to destroy a population is to attack its ability to reproduce. In both Bosnia and Rwanda, the extent to which genocidal ideology was motivated by fears of 'enemy' reproduction influenced the prevalence of mass rape and the sex-selectivity of mass murder.

Rape warfare was endemic in both Bosnia and Rwanda. Violence against women was used as a proxy for violence against enemy men, but was also meant to symbolically destroy the "mothers of the nation." Rapes were often committed in public with the intent to inspire fear and induce shame. In both countries rapes were often violent enough to render women infecund. (Fisher 1996; Hayden 2000; Weitsman 2008)

While rape is the feature of warfare most obviously related to fertility, sexuality, and future childbearing, it is also the most difficult to estimate. Victims are obviously reluctant to admit to having been raped (particularly in Bosnia, where specially-trained counselors who work with torture survivors tell me most of their female clients will only allude to the issue indirectly). Indirect estimates have been made based on the number of children who were born from rape. In Bosnia the number of rape victims was estimated to be between 20,000-50,000[81] and in Rwanda the number of rape victims after the war was estimated to be as high as 250,000 (Nowrojee 1996). The Rwandan figure seems on its face to be overestimated by a factor of 10 when we consider that there were around 750,000 Tutsis in Rwanda prior to the genocide and at least 75% were killed. While Hutu women may have also been raped there were no references to this in the literature or during my fieldwork.

Indirect estimates of rape victims based on the number of births are unreliable for a few reasons. First, working backward from births using the probability of conception from a single unprotected act of heterosexual intercourse as these estimates have done does not account for the duration and frequency of rape among victims. Most narrative reports suggest that a non-negligible proportion of survivors were repeatedly raped over the course of days, weeks, or months, which would increase the number of births expected. Second, in some cases the rape is so violent as to render the woman infecund, as was true for three of my Rwandan respondents.

[81] According to the WHO (2000:111), but they state this estimate is "aside from unreported cases."

Third in Bosnia abortion is widely available, so it is impossible to discern how many pregnancies were actually carried to term. (Even in countries where abortion is illegal, many folk remedies to induce a miscarriage are available). Finally postmortem evidence indicates that—particularly in Rwanda--women were often killed after they were raped, hence the *true* number of rape victims will never be known.

The probability of conception from a single act of unprotected heterosexual intercourse is actually very small, around 3% (Wilcox 2001). Repeated intercourse during a short time period would increase the probability of conception, but only to a point. Women are mostly fecund during a certain time of the month. Even if a thousand women were raped during war, we might only expect 30-90 additional births. If a hundred thousand women survived rape, this would imply an upper bound of 9,000 births. The number of women who survived rape would have to be very large for this tragic phenomenon to show up in fertility statistics.

Children born of rape were, however, common enough in Rwanda that there is a term for it: *enfants mauvais souvenir*s (children of bad memories). The number of these children was estimated to be as high as 20,000, but as discussed above, these calculations may be flawed. Nonetheless it has been difficult for many mothers to accept these children. One Rwandan respondent who gave birth to a son after being raped during the genocide described her harrowing experience and her relationship with her son today in this way:

> After the president died [Habyarimana], all the Tutsis in Bugesera fled then we took over Nyamata church and Commune premises. On the ninth of April the Bourgmeister said that there is no war and we should get out of the church. We preferred to go together and gather on a hill. On the 10th of April, the presidential guards came with their vehicles and guns and burned the place where we were gathered. And a lot of people were killed there. They burned the bush. Then people started to run away and there was shooting. And people died, the presidential guard was shooting them. At that very moment, we started taking different directions to hide in churches, and swamps, and then they started to rape women. The Presidential Guards were taking the people who were in their path, everyone taking his own direction. My husband fled with two of our children and I took the eldest. My husband was killed, but I'm not sure when. The other two children managed to escape to an orphanage.
> I hid in the swamps with my daughter. As we were hidden in the swamps, Interahamwe came in, found people who were hidden there. Four soldiers came to rape me. My daughter was watching... she was also raped. In front of me. We only survived because they discovered a man passing by and they ran after him to kill him. That's when we escaped back to the swamps. On 8th May, there was almost nobody in Nyamata. Everybody was gone; either had died, or was just hidden in the swamps. On the 14th exactly, RPF arrived in Nyamata and started to rescue people in different places.

Up to that moment, when RPF rescued us, I had only my 3 surviving children, myself, and then we started a hard life.
I discovered in July that I was pregnant, because there was some trouble around my stomach
How did you feel when you found out you were pregnant?
I was about to commit suicide. With the baby, I did not understand how I could breast-feed my child, maybe I was somehow traumatized
Did you think about trying to induce a miscarriage or to give the child up for adoption?
I felt that the child was innocent, and moreover it was a boy, and there was no reason to kill a son. I accepted my fate, and gave birth to the child.
Was it difficult to breast-feed?
It was very difficult because I had no milk to breast-feed the child. I cared for this child and the only way to raise him was to buy milk
Is it difficult to treat him the same as your other children?
I got support from an NGO called Kanyarwanda. At the beginning I was fighting against the feeling of wanting to call this child Interahamwe because of the way he was conceived. But slowly now there is a relationship emerging between myself and the child.
Did your other children who survived the genocide have trouble accepting him?
There are still some problems between the children. His skin is very different from the other children. When they fight, the older children will call him such bad insults. They call him Interahamwe.
So he knows how he was conceived?
He keeps it hidden from others, but not from me. He adopted another philosophy and keeps strong. Now he's 13 years old.

Even if the demographic impact is small, rape can dramatically alter the reproductive and sexual lives of its victims. On the physical side, rape victims may become infecund or lose the ability to enjoy sex. In traditional societies, women who are known to have been raped are often abandoned by their partners and family. In Rwanda the national army reportedly had an HIV infection rate of 35% prior to the genocide, and Tutsi women who were not killed after they were raped were often infected with HIV (McGinn 2000). The majority of the Rwandan rape survivors I interviewed over the course of my research had contracted HIV, almost surely due to wartime rape. In many cases they had only recently been diagnosed with the disease, and in the meantime had passed it to sexual partners and children. Sexual violence during wartime was an important theme in both countries but its effects are difficult to numerically estimate.

Access to Family Planning

During warfare, women may lose access to their usual means of contraception, and this is particularly disruptive in the case of birth control that requires regular doses (such as the pill)

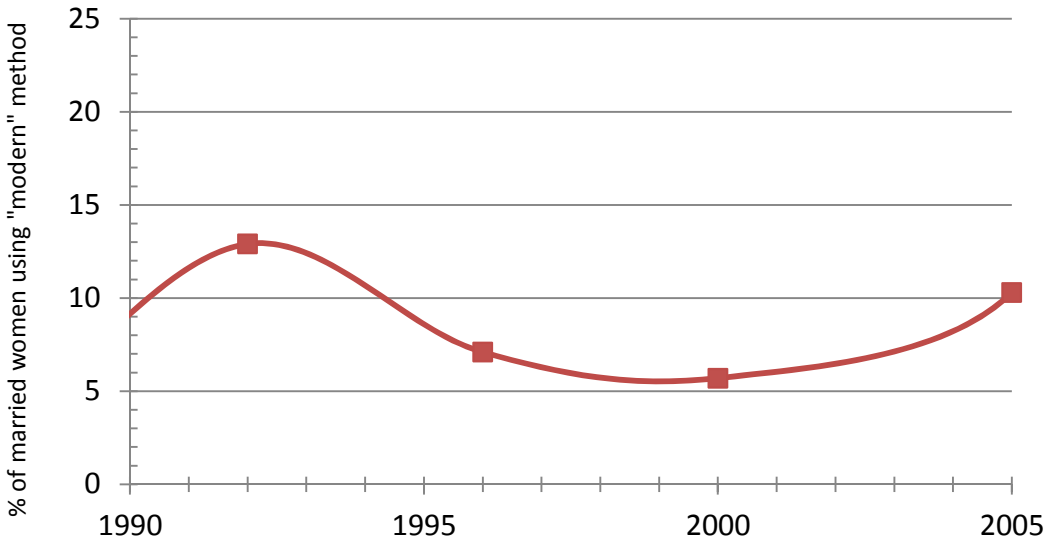
or regular medical treatment (Depo-Provera, Norplant, IUD's, etc.). During armed conflicts, contraception is obviously not the main issue on women's minds, but even if they have time to consider it, they may not have access to it. Wars also often endanger health care workers and impede transportation (Pedersen 2002), which reduces the availability of hospitals and medical care. This likely also disrupts family planning services. A study of Angolan fertility found that the country has one of the lowest levels of contraceptive use on the continent, likely stemming from the fact that family planning services tend to locate in "safer" urban areas (Agadjanian and Prata 2001; 2002).

Relative to other central African countries Rwanda had a fairly active national family planning program well before the genocide. Yet during and immediately after the genocide these programs were often disbanded. The post-genocide Tutsi government reportedly dismantled family planning programs so as to not offend genocide survivors who wanted to replenish their families (Kinzer 2007). However my key informant interviews suggested that the suspension of family planning was more accidental than intentional. The late 1990s were described to me as a "period of crisis" where they were just trying to focus on rebuilding a government and providing food to the population. Several older women of both ethnicities told me that they had wanted to continue their modern contraceptive method after the genocide but were not able to access these services. Many women then reverted to relying on periodic abstinence to control their fertility, but this method is often unreliable. Figure 5.13 is a simple chart of contraceptive prevalence[82] among sexually active women. It was estimated at 4% in Rwanda in 1988 (May, Mukamanzi and Vekemans 1990) and increased to 13% by 1992. However the prevalence rate fell to 6% by 2000. However, in the face of a population doubling over the next 30 years, the government is now starting to implement comprehensive family planning policies in an effort to reduce fertility.[83]

[82] Use of modern contraceptives.

[83] According to two articles from The New Times of Rwanda: March 16th 2007 "Rwanda needs 7 Billion Rwandan Francs [US$12.8 Million] for population control"; and April 10th 2007 "Kigali battling population explosion, says vice-mayor."

Figure 5.13: Contraceptive Prevalence , Rwanda, 1990-2005



Sources: Office National de la Population [Rwanda] and ORC Macro (1993, 2001, 2006); May , Mukamanzi and Vekemans (1990).

In Bosnia, despite virtually free access to contraceptives through the Socialist system of health care prior to the war and very low-cost access now, coitus interruptus (or "my husband is careful") and abortion seem to be by far the two most popular methods of birth control both then and now (see Table 5.1). Abortion is illegal in Rwanda, but it is legal and widely-practiced in Bosnia. Figure 5.14 shows that in Yugoslavia as a whole during the time period leading up to war the abortion rate was close to or exceeded the live birth rate. In 1987 there were 1,018 legally-induced abortions per 1,000 live births (David and Skilogianis 1999). That number fell slightly to 964 legally-induced abortions per 1,000 live births in 1988. In 1985 Bosnian rates were slightly lower than in Yugoslavia but converged by 1988 at 964 (Council of Europe 2004).

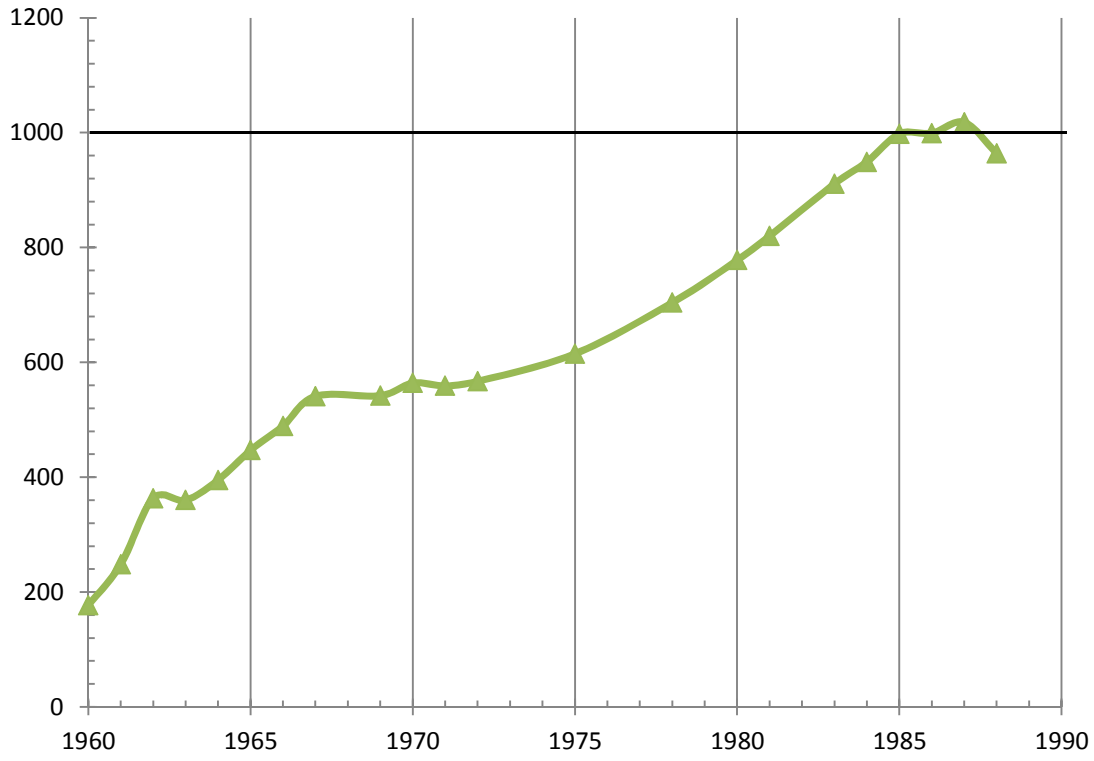
Key informants told me that despite the lack of official statistics, the abortion rate is still very high in Bosnia. This was confirmed through my interviews. Women I interviewed who obtained abortions during the war told me that doctors who performed them were often seen as 'heroes'. In Srebrenica, originally a U.N. 'safe area' and later the site of what the International Criminal Court ruled a genocidal massacre against boys and men, women were desperate to obtain abortions, and—at least at one hospital—even unskilled doctors were drawn to practice abortions because women wanted them so badly (Fink 2003). These patients did not have money but would often offer gifts of cigarettes and plum wine in exchange for the procedure. When these women could not obtain a safe abortion, many resorted to illegal methods. Condoms were brought in but not well-accepted by the community.

One respondent I interviewed described her reliance on abortion this way:

> *Were there any other times when you were pregnant that ended in a miscarriage or abortion?*
> I had many abortions when I would get pregnant. It happened many times. My husband would take me to have an abortion. I have many medications now. I'm not in very good health. It is a miracle that I survived the whole thing after my son died. Life is bitter.

According to my key informant and personal interviews, reliance on abortion in Bosnia is an open secret, one that international family planning groups do not want to acknowledge. The only extant survey of post-war contraception in Bosnia, the Multiple Indicator Cluster Survey (UNICEF 2002) does not ask about reliance on abortion. Based on interviews, however, abortion seems to be decreasing among the younger generation, who prefer condoms, IUDs, and the pill. In Rwanda, where abortion is illegal, only one woman admitted to having had one. Younger women there were more interested in obtaining 'modern' family planning services rather than relying on periodic abstinence as many of their mothers did.

Figure 5.14: Legally-induced abortions per 1,000 live births in Yugoslavia



Note: In 1960 the abortion law was liberalized from allowing abortion on the basis of medical need only to allow ing abortion for social reasons (if birth of the child would "result in serious personal, familial, or economic situation for the pregnant woman which cannot be averted in any other way.") The law was expanded in 1969 to allow for abortion "if during pregnancy and after birth the woman could fall into serious personal, familiy, material, and other troubles.") In 1974 Yugoslavia became the first country to declare that "it is a human right to decide freely on childbirth."

Source: David and Skilogianis (1999)

Miscarriage and Infant Mortality

Women in stressful situations where medical care and food are scarce, such as war, experience a higher rate of miscarriage and—in extreme cases, due to stress and famine—may be temporarily infecund. Little data exists on this phenomenon, one study found that girls in war-affected area of Bosnia tended to experience a delayed onset of menarche (Tahirovic 1998). While it is difficult to prove infecundity, two women I spoke with in Bosnia said they were surprised not to become pregnant during the war.

> I wanted to become pregnant earlier, but I did not because of the war. So, as soon as the war ceased, I became pregnant.
> *What method did you use to prevent pregnancy during the war?*
> I used to count the days of my ovulation cycle, I don't know the term... that was my contraception method during the war. And then after the war ended in 1995 things were improving. I just became relaxed after the war and started to think about maybe trying to get pregnant, and then it came very soon.

Another respondent described her miscarriage that occurred during the war after being raped and fleeing Kigali on foot. While it is not clear whether medical attention would have saved her baby, the lack of medical care seemed to ensure a miscarriage under those difficult circumstances.

> *Why do you think that your husband fled with just the children?*
> I was five months pregnant, so when the guards came, they were like: "if you move, we will shoot you." there was no time for me to get up and run. The man grabbed me and my husband was already gone with the children.
> *What happened to that pregnancy? Did it survive?*
> I had a miscarriage
> *At what point in this did the miscarriage happen?*
> I was raped on the eighth [of April]. And we had to walk all the way to Gitarama. We left on the 11th. I had the miscarriage when I arrived in Gitarama.
> *Was there any medical attention there?*
> There was a hospital but they refused to take me in. There was this man who was there and he took me aside and he said that [the génocidaires] were coming to take people from the hospital to finish killing them so he said that I couldn't stay there. So then I had the miscarriage because I could not get any medical attention.

War and genocide also tend to increase infant mortality, usually in indirect ways. Any reduction in food or health care services accompanying war is magnified on the biologically vulnerable population of infants and toddlers. Infants are less likely than their adult counterparts to survive displacement from their homes, as they are more susceptible to the

elements. Increases in disease accompanying war will also disproportionately affect infants. Evidence from Colombia has shown that the more intense the guerilla warfare in a region, the higher the infant mortality rates are, holding other characteristics constant (Urdinola 2004).

One respondent whose story was cited in chapter 2 to describe how the genocide started also described how difficult it was for her to care for her infant during the conflict.

> In the morning on Saturday I asked my brother if it was possible for me to go back home and he said it was not going to be possible for me to go back home but instead he could take me to the Gatenga church which he said was a bit safe.
> *Did your brother go also or was it just you?*
> My own brother became Interahamwe, and then he asked me to go to Gatenga church, to join a group of 40 refugees who went to hide themselves there.
> The Interahamwe came to Gatenga church and started to do many bad things. It is very hard for me to say what happened to me there, lots of things. But the Interahamwe did not kill me; they said 'she will not survive.' They said that if we were not killed now, it is okay because others will kill us when they go to bury the dead. The other Interahamwe said let's just leave her. Don't kill any more. And in this sort of calm, this amnesty, a few of us escaped from Gatenga during the night, and tried to get through.
> I had the baby on my back during the night when I was escaping ... one night I also went into the valley when I was fleeing. With all the suffering I endured, the baby was there.
> *Do you have a special relationship with that child today?*
> There is a special relationship between us.... after I escaped from Gatenga, I was chewing food and spitting it in his mouth, to keep him quiet.
> *You were not breastfeeding?*
> I was sure that there was nothing in my breast. Up until today we have a very special relationship. When I went back to where my husband and my children were, my house was empty, of course everybody was killed. [My son] is all I have left.

During the type of wartime conditions this respondent described, it is easy to understand why infant mortality and miscarriage would be commonplace. Women struggle to breastfeed, run the risk of being caught when génocidaires hear their small child crying, and have no means to deal with hunger or illness. High rates of infant mortality may in turn translate into higher fertility. Biologically, the death of an infant terminates breastfeeding, which is typically a time during which the mother is naturally infecund. Thus the mother is more likely to give birth following the death of an infant than she would have been if she were still breastfeeding. The termination of lactational amenorrhea may serve to increase fertility (live births, even if not surviving children) in a conflict situation. More indirectly, when infant

mortality is higher, parents find they have to bear more children in order to end up with the ideal surviving number (Cain 1983; Pörtner 2001). This may be both a preventative measure in anticipation of child mortality as well as a direct response to child death, the 'replacement effect.' Some literature shows that high variability in child survival leads to high fertility (Leslie and Winterhalder 2002), though the question has not been completely resolved. It is true, however, that infant mortality is a strong predictor of fertility (Sanderson and Dubrow 2000). A recent paper also found infant mortality during the Rwandan genocide to be a significant predictor of subsequent births (Schindler and Brück 2010).

5.6.2 Material and Economic Factors

Some literature has suggested that a crisis such as famine or an economic shock can itself initiate the fertility decline in high-fertility countries. One paper theorizes that this is due to a reduction in parental budgets for child costs (Eloundou-Enyegue, Stokes and Cornwell 2000). This is in opposition to the "traditional" narrative of fertility decline, which happens during a time of economic prosperity. The authors focus on contemporary Cameroon, which suffered a major economic crisis starting in 1987. Even after controlling for the long-term trend of fertility decline, they find that the timing and the magnitude of Cameroon's fertility decline following the crisis is consistent with their thesis of economically-led fertility declines. This is confirmed by testimonies from respondents. However the article neglects to mention that the decline in Cameroonian fertility occurred at the same time as the fertility decline in other West African countries.

Demographers assert that since Bosnia had already achieved replacement fertility rates prior to the genocide, childbearing decisions were already under the "calculus of conscious choice." Therefore the postwar economic crisis sparked by the dissolution of Yugoslavia in 1991, transition to a market economy, and the Bosnian war for independence meant that it was economically irrational to bear children during and after the genocide, thus fertility rates decreased (cf. Billari and Kohler 2004). Indeed, this basic sentiment was confirmed by almost all of my Bosnian respondents. Many faced not only economic losses from the war (homes damaged or destroyed, wages not paid) but also a very tight job market afterward. The decline in the standard of living was a constant and almost unavoidable theme throughout my interviews, though at certain points it was difficult to differentiate sentiments about economic decline from a broader political "Yugonostalgia" (longing for a time when the country was more peaceful, unified, and important to the rest of the world).

> *At what point did you decide that you wanted to stop at two children?*
> Well, I had always kind of wanted two children. During the war, when I stayed pregnant the second time I wanted the two children to have each other. But one child during the war was enough for me. And after the war there was that whole postwar crisis, and I didn't want to have any children. Although I adore children, is I just had a little bit better living conditions, I would've had 10 children. It was really hard, this third abortion. It was

> really hard for me because I really wanted to keep it, but also [the abortion] was better than not being able to afford. And I was really depressed; I went into a depression about it. I was very sad

For many Bosnian women I interviewed the rational choice framework was not disrupted by the war. If anything the war reinforced a sense of rugged individualism. As neighbors turned on neighbors, civilians felt locked into a bitter zero-sum struggle for survival. Yet interestingly—and particularly among women who remained in Sarajevo during the four-year siege—a certain kind of community ethos also emerged in response to war. Despite constant shelling and mortar fire by Serbian troops that had surrounded Sarajevo and cut off water, electricity, and food, many Bosniak civilians were determined to stay put. They describe trying to go about their lives as normally as possible. Schools were reopened, health clinics and hospitals tried to function, and many people made the highly "irrational" decision to participate in activities like work and school that offered few immediate benefits and many immediate risks. In this sense the "rational choice" framework does not completely hold for women's day-to-day lives in wartime Bosnia.

Richard Easterlin's landmark work (1987) on relative income and fertility preferences suggests one important mechanism by which couples reduce their desired fertility in response to economic circumstances. Easterlin postulates that each generation desires to be at least as financially well-off as their parents. When relative income is lower than the previous generation, fertility will decrease. Based on my interviews with women in Bosnia, the difficulty adjusting to a lower standard of living seems to be one important reason why women curtail their fertility in response to war. As one respondent told me:

> Before the war I wanted to have four kids or five kids, and with that standard (of living) that was possible, and if it was not for war I would probably have that, but not after the war. It is not very nice to have a lot of kids. I like kids, but it is better to have two and to provide for them in a better way.

In fact, the overriding theme of my interviews with Bosnian women was that pregnancy avoidance was primarily about the economy, not the war. Bosnia began its transition to a market economy at the same time as war broke out so the economic devastation was even more pronounced. The length of the war and the blockade of major cities also dramatically affected the local economy. In Sarajevo, for example, supplies were so limited that a black market developed quickly and the cost of basic necessities like flour and sugar increased more than one hundred-fold. Moreover, even if reproductive opportunities were available during the war, most women said they had wanted to avoid pregnancy during the war due to enormous economic and physical insecurity. In Bosnia abortions seemed to have been available even under the most difficult of circumstances:

> During the war, the Chetniks [Serbs] were right here. We often were in the front line. I was here with my children while my husband was fighting. The

> Serbs had left the neighborhood, but Croats and Muslims stayed.... My first abortion in 1993 during the war was because there was not enough food for me, there was not enough flour, there was not enough milk, and I did not have enough food for myself. Grenades were falling everywhere. I had to walk to the hospital amidst the grenades. We simply did not have any conditions for a child.

Other women talked about not being able to provide for children at the start of the war, and then losing their husbands.

> *How many children did you want?*
> I only wanted one, but my husband wanted more kids. Before Srebrenica fell my husband wanted another child, and I said where? How? We don't have any food. And he kept saying you have to have another because we only had one kid, and he really wanted, but I did not. I am the only cause

Meanwhile in Rwanda, economic loss and devastation was also an important theme, but it was less important for childbearing decisions. One reason is that many older women said an ideal number of children is a "new concept": for them, economic circumstances were unrelated to childbearing. Less educated and rural women in particular seemed more likely to continue to have children during and after the war *regardless* of economic losses. However—particularly among younger women—there was an economic theme to decisions to limit births, though it was not as frequently cited as it was in Bosnia. When Rwandan women did discuss the affordability of children they always named school fees as a reason for limiting their births:

> I always wanted 3 children. It is something we discussed.
> *Some people have said that genocide survivors wanted to have more children to replace the ones who died. Has that been true in your case?*
> As we have limited financial means today, I don't want to risk having more children I cannot afford. So I think it is better to keep the decision of 3 kids.

Limitation and spacing of births due to educational fees was a theme that arose a few times in Rwanda. Even the small fees for school attendance in Rwanda make it difficult for many parents to send their children to secondary school.

One young woman described it to me this way:

> *Have you and your partner ever discussed how many children you want to have?*
> Yes
> *And what have you decided?*
> After four years we will get the second
> *Do you think there will be a third?*
> No, no third.

And why two?
Just two because life is very expensive getting their school fees is not easy and I want them to go the best schools and acquire the best education.

When considering the effects of these educational fees, it is important to also note the role of genocide orphans. A report by USAID and the Rwandan government estimated that in 1995, there were nearly 770,000 orphans under age 15 in the country (Rwandan Ministry for Local Government [MINALOC] and USAID 2002). For the families who fostered these orphans, additional educational expenses incurred by these children may have reduced additional births. In most cases, the women I talked to who adopted genocide orphans had been raped and widowed during the genocide themselves, therefore they were unlikely (or unable) to give birth to additional children anyway, but the effects may have been more pronounced for other families who adopted genocide orphans. Overall, material and economic limitations seem to have been an important feature of limitations in births after the war and genocide in Rwanda and in Bosnia.

5.6.3 Gender Roles

An increase in fertility in Rwanda should not be solely attributed to lack of contraception or to lack of intentionality. Marriage during and immediately after the war was an important way women helped themselves survive, even if (among widows) it meant that they needed to give birth to more children with their new husband. In part, the lack of inheritance laws contributed to the necessity of remarriage among widows. One Tutsi widow who remarried after the war described how she needed to have two more children after the war to 'keep' her new husband:

> The thing is, when I had my first husband, it was made clear that we would only have three children. But with the second husband, I wanted a husband to live with because I was so lonely and needed someone. He would help me take care of my kids.
> *Did you want to have to have more children with him?*
> (Laughs) but it was not possible to live with a man without bearing his children so I had to have children with him. It was not easy for my second husband to accept to raise three children who were not his. It was just like a condition for him to add his own two children.

The theme of needing to have more children in order to cement a relationship with a new husband was repeated several times throughout my interviews in Rwanda. Women told me that if they wanted a new husband then they would need to have children with him. In many cases the new husband was unwilling to provide for the other children in his new family:

> *Does your boyfriend give you money for the children?*
> When he gets a little bit of money here and there he helps us, he pays for his two children in school and he pays the maid at home.
> *But you have to pay for food?*

Yes, and I have a brother who pays the rent,
Does your boyfriend support the two older children?
No
Because they're not his?
That's right. (Laughs) He refuses to support children who are not his own.
Are all of your children are in school?
I manage to pay fees for my two oldest children [the ones from my former husband] myself. The younger children are about to start school.

The difficulty of maintaining an independent household in Rwanda certainly seemed part of the reason for a delayed increase in births afterward. In Bosnia women were more likely to be economically self-sufficient, and if they did marry there did not seem to be any 'obligation' to give births.

In Bosnia, while the old socialist system had provided virtually free healthcare and paid maternity leave, postwar privatization of firms has made it much more difficult for women to combine work and family. Maternity leave is no longer offered in most jobs, as it was during the Socialist era, and employers can discriminate against pregnant women and mothers. And if she obtains permission to take unpaid maternity leave, her employer is not required to hold her position for her until she returns. Hence many respondents who held jobs felt forced to choose between work and childbearing.

It is difficult to know to what extent the lack of maternity leave contributed to the declining post-war birth rate in Bosnia, but there is some literature suggesting that these two factors are related. For example, one cross-country study found that when motherhood and work are made incompatible and the future is uncertain, women are more likely to avoid childbirth (Hobson and Olah 2006). These so-called 'birthstrikes' are particularly common in Eastern Europe where the transition to capitalism has eroded government benefits. The term 'strikes' seems to imply a collective organization among women that didn't ring true from my interviews, but certainly many individual women expressed having decided to postpone childbearing due to a confluence of work-related factors, energy involved in caring for children, and overall economic uncertainty.

5.6.4 Psychosocial Factors

Trauma

While there may be many psychosocial factors stemming from genocide that would affect the marriage and birth rate—including post-traumatic stress disorder [PTSD]—it is difficult to measure and compare the effects of trauma among different populations. For example, in Rwanda some researchers have argued that contemporary inventories of trauma and depression are inadequate to capture reactions to the genocide, which tend to be more somatic than psychological (Butera, Bultinck and Mercier 1999; Hagengimana et al. 2003), while other research confirmed the validity of measures of trauma and stress in the Rwandan population (Bolton 2001). A survey of Rwandan children and adolescents one year after the

genocide found that more than half of those interviewed met the standard criteria for PTSD (Dobson 2009), while a survey of Rwandan adults conducted seven years later found that almost one in four met the criteria for PTSD (Pham, Weinstein and Longman 2004). Yet many more had experienced events that might induce trauma, such as witnessing killings, being forcibly displaced, losing at least one parent or sibling, and being forced to hide during the genocide.

In Bosnia, the applicability of standard PTSD seems to be more generally accepted and more widely used. Many comparative studies were conducted after the war on sub-populations such as children, women, refugees, and rape/torture survivors. One survey found that at least two in five children in Sarajevo met the criteria for PTSD (Allwood, Bell-Dolan and Husain 2002). Few, if any, national surveys were conducted on adults in Bosnia, but studies of subgroups found that—above and beyond exposure to wartime trauma—other postwar stressors such as material losses contributed to the intensity of traumatic symptoms (Klaric et al. 2007). Bosnian refugees who fled to other countries had high rates of PTSD that lingered a few years following resettlement (Plante et al. 2002; Thulesius and Hakansson 1999; Vojvoda et al. 2008).

How might we expect trauma to affect nuptial and birth outcomes? Certainly those afflicted by PTSD symptoms may be 'less desirable' partners and may themselves experience social phobia. A 'foreshortened view of the future,' including marriage and childbearing, is one element of the PTSD assessment scale (Blake et al. 1998). For these reasons, trauma survivors, *ceteris paribus*, should be less likely to have children. But the picture on the ground is much more complex than the model of PTSD would suggest. Social and familial pressures in both countries tend to induce women to bear children soon after marriage. And childbearing may also be desirable as one way of inducing happiness.

Ethnic Pro-Natalism

In situations of protracted conflict, one potential reason for high fertility is ethnic nationalism. The pro-natal politics of ethno-nationalism may serve to increase fertility before and after war among populations who perceive themselves to be under attack. Prior to the war the Serbian Socialist Party and Orthodox Church urged Serbian women to bear more children as part of their national duty. Israel provides another particularly vivid example of two populations (Jews and Palestinians) whose pronatalism seems intertwined with ethnic nationalism and claims to land and political legitimacy. In her book *Birthing the Nation*, Rhoda Kanaaneh (2002) documents pronatalist norms among Palestinians in Israel, where the press celebrates high Palestinian birthrates (62). In Palestine, birth control (even if provided by non-Israelis) is viewed suspiciously as a desire to reduce the Palestinian population (74). In Bosnia, Muslim and Croatian women had higher birthrates than ethnic Serbs before the war. The Serbian power structure labeled the low birthrate among Serbs the *bela kuga* ["white plague"] and chastised Serbian women for not fulfilling their national duty to be good wives and mothers.

In Rwanda because the rebel Tutsi army leader was a son of Tutsi exiles from the 1959 genocide, the Hutu power structure believed that it was a mistake to have spared the lives of women and children in 1959. This time around it was imperative to kill all Tutsis. The first of the Hutu "Ten Commandments" issued in the run-up to genocide declared that all Tutsi women, even those married to Hutus, were enemies (Mamdani 2001; Prunier 1997).[84] In some sense this targeting of women may spark an oppositional desire to give birth afterward. One rape survivor in Rwanda described her experience this way:

> *Do you think that your experience during the war influenced your decision to get married and have children afterward?*
> After the genocide, it was not easy. The life was hard. A normal life. But, after this time of trauma, I felt that I would give birth to replace all the people who died during the genocide
> *Did you still feel that way even after your first child, that you wanted to continue having babies to replace?*
> After the first child, it was too early, because I did not know anything about my [HIV] status, and I was ready to continue having babies, etcetera. It was only after the third then I realized the danger
> *So if it were not for the diagnosis of HIV, do you think you would have wanted to have even more than four children?*
> After this child [the fourth], I have decided to go for surgery to stop everything, because I think that I must stop and raise the four children I've got. May God help me.

In the above case, it was the diagnosis of HIV stemming from wartime rape that caused her to curtail childbearing. Five respondents (of 54) in Bosnia and forty (of 63) in Rwanda had lost family members due to war.[85] In Rwanda half of these were women who lost five or more family members. While many of these women were Tutsi, Hutu women also lost several relatives during the war, particularly those who had mixed parentage. In some cases these losses of family members appeared to increase the desire to have children after the genocide.

> *Have you and your husband ever taken measures to prevent additional births?*
> No

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[84] The first two commandments were as follows: "(1) Every Hutu should know that a Tutsi woman, wherever she is, works for the interest of the Tutsi ethnic group. As a result, we shall consider a traitor any Hutu who: marries a Tutsi woman, befriends a Tutsi woman, or employs a Tutsi woman as a secretary or concubine; (2) Every Hutu should know that our Hutu daughters are more suitable and conscientious in their role as woman, wife and mother of the family. Are they not beautiful, good secretaries and more honest?"

[85] Including time spent in refugee camps (one woman lost her husband there due to cholera), as well as women who lost family members during later border incursions from the *Bacengezi* and *ex-FAR*.

Did you and your husband ever talk about how many children you wanted?
No. We could not do any planning, because neither myself nor my husband has any brothers or sisters left after the genocide.
I'm so sorry
We could not plan anything. We just wanted children to replace those who died.
And since the time of the genocide, how many children have you had?
After the genocide, though we had only two.
Are you considering having additional children?
No, we do not need any more.

While members of groups who lost a significant number of casualties during the genocide may feel an increased desire to replenish their numbers, and purposefully have many more children after the genocide than they did before, there seemed to be consistent reports that pronatalism was tempered by economic realities.

Some people in Rwanda have said that women who survived the genocide wanted to have children because they wanted to replace some of the people who died. Do you think that was true for either you or the father of your young child?
This was true after the war, but now with the situation that we are experiencing, it is no longer possible to think about having children because education is very expensive and so many things in the economic situation have changed.

In other cases, genocide survivors completely rejected the idea that women's fertility would even be connected to the loss of family members during wartime.

Some people in Rwanda have said that women who survived the genocide wanted to have children because they wanted to replace some of the people who died. Do you think that was true for you?
How can that be true will those kids come and replace my dead mother? I cannot give birth to children I am not capable of raising It is stupid, because even if you have children, the ones that you get will not replace your relatives who have died. And in addition to this, the life you have, the standard of living you have, doesn't allow you to have more and more children.

A report by the National Academy of Sciences did conclude that in the long run there may be a few cases such as Israel where "prolonged belligerence" increases fertility (2004: 24). In Rwanda there are often ethnic tensions under the surface, but these are not explicitly acknowledged due to the government's stance that ethnic differences cannot be acknowledged; "we are all Rwandans." *Symbolic* pronatalism was apparent among Muslims during the almost four-year "Siege of Sarajevo." Serbian troops repeatedly shelled the maternity hospital. After the deaths of dozens of new [Muslim] mothers, infants, and doctors in 1992, the maternity

hospital was relocated into a clinic further away from the front lines. The new clinic was still under siege, but was safer than the original. In an act of symbolic defiance, the local radio station announced every morning during the war how many babies had been delivered in Sarajevo at the new maternity hospital the previous day. Yet finding evidence of pronatalism at the individual level is difficult. One respondent who fled from Srebrenica described how her pronatalist sentiments clashed with the economic reality of her displacement, and she ultimately decided to get an abortion:

> We did not plan on having two children. The last pregnancy [in 1996] I wanted to give birth because of everything that happened. I wished to give birth because of all those people who were killed. I wanted to keep the pregnancy. But then when I thought about everything... You're [displaced] in somebody else's house, and one day it just comes to you... I remember that day. It was snowing heavily, and we were in this place that was a bit far from Tuzla, and I was already three months into the pregnancy, and I saw what the conditions of life were. You have nothing, and you remember how you had everything. [The abortion] was probably a moment of weakness. ....Now sometimes I say I'm sorry because my children are both grown up. .... And now they joke with me sometimes – you could've given birth to another one for us. And I said at my age... it is a little baby. And it takes a lot of strength, and you don't know how much you will be able to do.

Most Muslim and Serb respondents said that they'd heard of the "white plague" (*bela kuga*, a term used to describe the low birthrate among Serbian women) and report seeing references to it on TV and in the newspaper. They generally perceive it as a problem in Bosnia. Muslims tend to believe that the term applies to all Bosnian women, while some Serbian respondents told me it is particularly a problem among ethnic Serbs, and that Muslim women bear many more children than their Serb counterparts. Empirically Muslim fertility rates were slightly higher before the war, but not dramatically so. Most respondents ascribed the "white plague" to economic insecurity. All of the ethnic Croat respondents I talked to had never heard of the term, except for one who lived in a predominantly Muslim area. None of my respondents indicated that the notion of the "white plague" had influenced her to have more children. Survey data from the postwar era in Bosnia also found that women valued their role as a family member—particularly as a mother, though also as a wife and a sister—above their role as a member of an ethnic or religious group (Walsh 2000).

Campaigns to Limit Childbearing

While family planning programs tended to be suspended in the wake of the genocide, in recent years the government has partnered with international donors to intensively promote family planning and family size limitation (cf. Kinzer 2007). Previous and current campaigns have focused on HIV and family planning, a recent campaign to limit family size is somewhat unusual among African countries, where large families tend to be valued. During a few of my

key informant interviews in Rwanda I asked about this campaign. I was ultimately referred to Rwandan Member of Parliament, Dr. Odette Nyiramilimo, who has been one of the most active members of the *Réseau des Parlementaires Rwandais pour la Population et le Développement* (Rwanda Network of Parliamentarians for Population and Development), which has pushed stronger population policies. Dr Nyiramilimo explained to me that originally parliamentarians wanted to implement a strict restriction on births to three per woman, but international donors balked at this idea. Therefore "three children per woman" idea has only been touted as a recommendation from the government. But campaigning has been heavy, with billboards, and even networks through pastors and priests. Two young married women in rural areas told me that prior to marriage their pastor had counseled she and her husband on limiting their children to three. According to more recent waves of the *Demographic and Health Survey* in Rwanda, the proportion of women who reported wanting three children nearly tripled from 2005 to 2007. Women's ideal family size has been decreasing along with fertility, and I would maintain that this national campaign has played an important role in accelerating the reduction in fertility.

5.6.5. Regression Analysis

While it would be desirable to have data on ethnicity in Rwanda, this measure alone would not necessarily be a good metric of genocide experience. A substantial portion of Tutsis in Rwanda are returned ('old caseload') refugees who did not directly experience the genocide. And as discussed in Chapter 2, Hutus in Rwanda were primarily the ones who fled as refugees – many out of fear of persecution for their [perceived] involvement in the genocide. Thousands perished in these refugee camps due to famine and disease. Many Hutus—even those who did not leave—also think of themselves as persecuted victims, particularly under the new RPF leadership. Hence it is not entirely clear that the generalized effects of violence and genocide on fertility would only apply to one particular group. Tutsis tended to have slightly lower fertility than their Hutu counterparts in 1992, likely due, in part, to higher levels of education.

To understand the significance of the relationship between ethnicity and fertility in Rwanda, I used 1992 DHS data to model several standard (Office National de la Population [Rwanda] and ORC Macro 1993) determinants of fertility. The dependent variable in each regression was whether or not the respondent had had a birth within the past year. Independent variables considered were: woman's age, years of education, whether or not she was married, place of residence, parity at time of birth, and ethnicity. I found that in 1992, ethnicity did not have a strong relationship with fertility once education, age, and other factors were accounted for.

Using the best available variables, I present results of binomial logistic regressions on the probability of giving birth in a particular month in Bosnia or Rwanda. Logistic regression relaxes the assumption of proportional hazards, an assumption which was violated by cohort differences in Rwanda and may very well be violated by temporal or ethnic differences in Bosnia.

In order to compare results across logistic models, I use the *pseudo R-squared* suggested by Nagelkerke (1991) to compare the goodness of fit of these models. While this does not have the same interpretation as the R^2 in linear regression – namely, the proportion of variance explained by the model –it can be interpreted as the "proportional reduction in the -2 log-likelihood statistic" and is preferable to other pseudo-R^2 measures for logistic regression (Menard 2000).

All of the logistic regressions shown here include controls for month of birth (to isolate the effects of birth seasonality), for age and age squared, and for education and whether the woman was born in a rural or urban area. The place of birth measure is because of reverse causality effects—women who have several children, at least in Rwanda, may relocate to rural areas with more affordable housing.

Table 5.3 shows a logistic model predicting the month of first birth of a Bosnian woman starting from age 15 onward. Each woman has an observation for every month in which she was 15 or over and had not yet had a birth. In the month that she did give birth, her outcome was a 1 instead of 0 and she exited the sample. In Table 5.3 the effects of age and education are significant and in the expected direction. Ethnicity was only slightly significant, with Croatian women less likely to have a first birth in any given month than their Serbian and Bosniak counterparts. This result is surprising because Croatian women, who are generally Catholic, and perhaps the most religious of any ethnic group, do not approve of birth control or abortion, at least in theory if not in practice.[86] Table 5.3 also finds that women were less likely to give birth during and after the war than they were in the period from 1985-1992, but this effect decreased in the immediate postwar period, which is consistent with the notion of a delay effect among Bosnian women.

A similar regression that was limited to the wartime years until December of 2001 is shown in Table 5.4. Here I was able to add in a variable about women's wartime experience. Several variables were possible, including the crude casualty rate of the district where the woman lived right before the war started, to self-reports of war memories, to the destruction of housing. Here I use whether or not the woman moved to her current house due to war-related reasons (resettlement, displacement, and so forth). None of these war-related factors were significant, including the one shown in the table. However it is interesting that its direction is positive, indicating that women may have been more likely to give birth after being displaced by the war. But the magnitude of the effect, even if it were to be significant, is quite small.

[86] All of the Croatian women I interviewed except two denied ever having used birth control, abortion, or withdrawal. Yet many of these women had one or two children at a young age and then stopped, which to me is suggestive of some effort to limit births. There seemed to be shame around acknowledging having used birth control.

Table 5.3 Logistic Model Predicting Month of First Birth, Bosnian Women, 1985-2000 [1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.423	0.098	<.0001 **	4.15	3.42	5.03
Age^2	-0.028	0.002	<.0001 **	0.97	0.97	0.98
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	0.058	0.084	0.4940	1.06	0.90	1.25
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.286	0.089	<.0001 **	0.75	0.63	0.89
Post-secondary education	-1.170	0.177	<.0001 **	0.31	0.22	0.44
Ethnicity						
Woman is Serb	-	-	-	-	-	-
Woman is Bosniak (Muslim)	-0.052	0.083	0.5370	0.95	0.81	1.12
Woman is ethnic Croatian	-0.424	0.169	0.0120 *	0.65	0.47	0.91
Time Period						
Pre-war	-	-	-	-	-	-
March 1992 to December 1995 (wartime)	-0.299	0.103	0.0040 **	0.74	0.61	0.91
1996 to 1997 ("genocide aftermath")	-0.261	0.13	0.0450 *	0.77	0.60	0.99
1998 and after ("post-genocide")	-0.428	0.105	<.0001 **	0.65	0.53	0.80
Month						
January	-0.480	0.225	0.0330 *	0.62	0.40	0.96
February	-0.190	0.208	0.3610	0.83	0.55	1.24
March	-0.189	0.208	0.3640	0.83	0.55	1.25
April	-0.077	0.203	0.7040	0.93	0.62	1.38
May	-0.063	0.202	0.7530	0.94	0.63	1.39
June	0.044	0.198	0.8240	1.04	0.71	1.54
July	-0.088	0.204	0.6660	0.92	0.61	1.37
August	0.035	0.198	0.8600	1.04	0.70	1.53
September	0.072	0.196	0.7130	1.07	0.73	1.58
October	0.016	0.199	0.9350	1.02	0.69	1.50
November	0.235	0.180	0.1910	1.26	0.89	1.80
December	-	-	-	-	-	-

n=103,238 person-months; events=669 concordance=61.6% *pseudo-R^2* =.062 ** p<.01, * p<.05

1. Months range from January 1985 to December 2001. Each woman had an observation for every month in which she was 15 or over and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.
Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

Table 5.4: Logistic Model Predicting Month of First Birth, Bosnian Women, During and After War[1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.306	0.134	<.0001 **	3.69	2.84	4.80
Age^2	-0.026	0.003	<.0001 **	0.97	0.97	0.98
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	0.052	0.119	0.6640	1.05	0.83	1.33
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.272	0.127	0.0320	0.76	0.59	0.98
Post-secondary education	-2.010	0.313	<.0001 **	0.13	0.07	0.25
Ethnicity						
Woman is Serb	-	-	-	-	-	-
Woman is Bosniak (Muslim)	-0.118	0.117	0.3160	0.89	0.71	1.12
Woman is ethnic Croatian	-0.372	0.227	0.1010	0.69	0.44	1.07
Time Period						
March 1992 to December 1995 (wartime)	-	-	-	-	-	-
1996 to 1997 ("genocide aftermath")	0.058	0.147	0.6910	1.06	0.79	1.41
1998 and after ("post-genocide")	-0.113	0.125	0.3700	0.89	0.70	1.14
Why here						
Born here or relocated for work	-	-	-	-	-	-
Relocated here for war-related reasons	0.123	0.125	0.3250	1.13	0.88	1.45
Month						
January	-0.420	0.307	0.1710	0.66	0.36	1.20
February	-0.170	0.284	0.5500	0.84	0.48	1.47
March	-0.186	0.277	0.5020	0.83	0.48	1.43
April	-0.070	0.269	0.7940	0.93	0.55	1.58
May	-0.146	0.274	0.5960	0.86	0.51	1.48
June	0.066	0.260	0.8000	1.07	0.64	1.78
July	-0.152	0.274	0.5790	0.86	0.50	1.47
August	0.128	0.256	0.6180	1.14	0.69	1.88
September	0.241	0.249	0.3330	1.27	0.78	2.08
October	-0.114	0.271	0.6740	0.89	0.52	1.52
November	0.294	0.247	0.2330	1.34	0.83	2.18
December	-	-	-	-	-	-
n=61,757 person-months; events=335	concordance=68.6%		*pseudo-R^2* =.063		** p<.01, * p<.05	

1. Months range from March 1992 to December 2001. Each woman had an observation for every month in which she was 15 or over and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.
Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

Given the low rates of nonmarital births in Bosnia I also ran a model to predict the month of first birth among married women. Recall that Figure 5.10 showed a relatively high proportion of first births occurred before the nine month mark (over 20%), indicating either a premature birth or that the causation between marriage and birth was reversed. Nonetheless, restricting the analysis to the timing of births within marriage makes sense given the high rate of marital births in Bosnia.

Table 5.5 shows predictors of the month of first birth among married women during the entire period from 1985 to 2001. Here the number of months since first marriage squared seems to have absorbed much of the explanatory power of the model, even age variables are not significant. Bosniak and Croatian women do seem less likely to give birth in any particular month, which again is somewhat surprising, and possibly an effect of small sample size. The time period of first marriage relative to the war was not significant.

Table 5.6 repeats the analysis of married women from the prior table but restricts it to wartime and after. Here the only statistically significant effect was whether or not the woman was born in a rural area.

Table 5.5: Logistic Model Predicting Month of First Birth, Married Bosnian Women, 1985-2000 [1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	0.172	0.116	0.1390	1.19	0.95	1.49
Age^2	-0.003	0.002	0.1760	1.00	0.99	1.00
Months since first marriage	-0.002	0.005	0.6800	1.00	0.99	1.01
Months since first marriage^2	-0.0002	0.000	0.0020 **	1.00	1.00	1.00
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	-0.222	0.091	0.0150 *	0.80	0.67	0.96
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.143	0.096	0.1360	0.87	0.72	1.05
Post-secondary education	-0.010	0.196	0.9610	0.99	0.67	1.46
Ethnicity						
Woman is Serb	-	-		-	-	-
Woman is Bosniak (Muslim)	-0.178	0.090	0.0490 *	0.84	0.70	1.00
Woman is ethnic Croatian	-0.321	0.177	0.0690	0.73	0.51	1.03
Time Period						
Pre-war	-	-	-	-	-	-
March 1992 to December 1995 (wartime)	-0.018	0.110	0.8710	0.98	0.79	1.22
1996 to 1997 ("genocide aftermath")	0.106	0.140	0.4480	1.11	0.84	1.46
1998 and after ("post-genocide")	0.117	0.112	0.2980	1.12	0.90	1.40
Month						
January	-0.480	0.225	0.0330 *	0.62	0.40	0.96
February	-0.190	0.208	0.3610	0.83	0.55	1.24
March	-0.189	0.208	0.3640	0.83	0.55	1.25
April	-0.077	0.203	0.7040	0.93	0.62	1.38
May	-0.063	0.202	0.7530	0.94	0.63	1.39
June	0.044	0.198	0.8240	1.04	0.71	1.54
July	-0.088	0.204	0.6660	0.92	0.61	1.37
August	0.035	0.198	0.8600	1.04	0.70	1.53
September	0.072	0.196	0.7130	1.07	0.73	1.58
October	0.016	0.199	0.9350	1.02	0.69	1.50
November	0.227	0.191	0.2330	1.26	0.86	1.82
December	-	-	-	-	-	-
n=16,033 person-months; events=615	concordance=64.7%		*pseudo-R^2* =.047	** p<.01, * p<.05		

1. Months range from January 1985 to December 2001. Each woman had an observation for every month in which she was married and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.
Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

Table 5.6: Logistic Model Predicting Month of First Birth, Married Bosnian Women, During and After War[1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	0.140	0.157	0.3730	1.15	0.85	1.56
Age^2	-0.003	0.003	0.3370	1.00	0.99	1.00
Months since first marriage	-0.004	0.007	0.5500	1.00	0.98	1.01
Months since first marriage^2	-0.0001	0.000	0.0590	1.00	1.00	1.00
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	-0.210	0.091	0.0210 *	0.81	0.68	0.97
Education						
Primary or less	-	-	-	-	-	-
Secondary education	-0.110	0.136	0.4210	0.90	0.69	1.17
Post-secondary education	-0.288	0.333	0.3870	0.75	0.39	1.44
Ethnicity						
Woman is Serb	-	-	-	-	-	-
Woman is Bosniak (Muslim)	-0.180	0.130	0.1660	0.84	0.65	1.08
Woman is ethnic Croatian	-0.298	0.238	0.2100	0.74	0.47	1.18
Time Period						
March 1992 to December 1995 (wartime)	-	-	-	-	-	-
1996 to 1997 ("genocide aftermath")	0.192	0.161	0.2350	1.21	0.88	1.66
1998 and after ("post-genocide")	0.186	0.140	0.1840	1.20	0.92	1.58
Why here						
Born here or relocated for work	-	-	-	-	-	-
Relocated here for war-related reasons	0.044	0.136	0.7480	1.04	0.80	1.36
Month						
January	-0.401	0.327	0.2210	0.67	0.35	1.27
February	-0.232	0.312	0.4570	0.79	0.43	1.46
March	-0.260	0.303	0.3920	0.77	0.43	1.40
April	-0.115	0.293	0.6950	0.89	0.50	1.58
May	-0.176	0.296	0.5520	0.84	0.47	1.50
June	0.112	0.278	0.6890	1.12	0.65	1.93
July	-0.296	0.307	0.3350	0.74	0.41	1.36
August	0.093	0.281	0.7400	1.10	0.63	1.90
September	0.207	0.273	0.4470	1.23	0.72	2.10
October	-0.003	0.288	0.9910	1.00	0.57	1.75
November	0.380	0.267	0.1550	1.46	0.87	2.47
December	-	-	-	-	-	-
n=7,950 person-months; events=303	concordance=67.4%		*pseudo-R* ^{2} =.062		** p<.01, * p<.05	

1. Months range from March 1992 to December 2001. Each woman had an observation for every month in which she was married and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.
Data from World Bank's Living Standards Measurement Survey in Bosnia, Waves 1 and 2 (2001-2002)

As discussed previously, the DHS data in Rwanda did not contain indicators of the severity with which women were affected by the war.[87] For this reason, both Rwandan regressions are done for the time period from 1985 to 2004. Table 5.7 shows results from a model predicting first births among Rwandan women. Here the magnitude of sample size clearly improves the model fit: in Rwanda after pooling results from the 2000 and 2005 DHS, there were 9,428 first births and over a million person-months. This is more than ten times the number of observations and events in Bosnia. In Rwanda, age, education, and month controls are significant and in the expected directions. Whether or not the woman was born in a rural area did not affect the probability of first birth, perhaps because the variance in women's education in rural areas is quite small. During the time period of the genocide births were more likely to occur, and even moreso during the genocide aftermath (before most of the refugees had been resettled). This comports with the descriptive statistics indicating a baby boom after the genocide. After 1998, when family planning programs began to start up again, the risk of first birth was lower than it had been for the decade before the genocide.

Table 5.8 presents a predictive model of first births among married Rwandan women. Here the variables for age and months since first marriage are significant and in the expected direction. The results from education (in particular, that women with a secondary education are more likely to give birth in any given month) is surprising. Results from the time period variables are also unusual. They suggest that, compared to the period from 1985 to 1994, married women were more likely to give birth in later years, particularly during the genocide. It is unclear why this would be the case.

[87] Indicators of infant mortality and sibling loss used in the regressions by Schindler and Brück (2010) are certainly suggestive of wartime effects, but it is impossible to discern whether children and relatives were lost to direct killings (mostly among Tutsis) or due to the refugee crisis afterward (largely among Hutus).

Table 5.7: Logistic Model Predicting Month of First Birth, Rwandan Women, 1985-2004 [1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*	*Odds Ratio*	*Lower OR*	*Upper OR*
Age	1.481	0.030	<.0001 **	4.40	4.14	4.67
Age^2	-0.030	0.001	<.0001 **	0.97	0.97	0.97
Where Born						
Born in an urban area	-	-	-	-	-	-
Born in a rural area	-0.012	0.038	0.7540	0.99	0.92	1.07
Education						
None	-	-	-	-	-	-
Primary education	-0.190	0.025	<.0001 **	0.83	0.79	0.87
Secondary education	-0.549	0.037	<.0001 **	0.58	0.54	0.62
Post-secondary education	-1.220	0.119	<.0001 **	0.29	0.23	0.37
Time Period						
Pre-genocide	-	-	-	-	-	-
April to July 1994 (during genocide)	0.175	0.078	0.0250 *	1.19	1.02	1.38
August 1994 to December 1997 ("genocide aftermath")	0.276	0.026	<.0001 **	1.33	1.27	1.40
1998 and after ("post-genocide")	-0.076	0.025	0.0030 **	0.90	0.86	0.95
Month						
January	0.252	0.052	0.0000 **	1.29	1.16	1.42
February	0.133	0.053	0.0120 **	1.14	1.03	1.27
March	0.073	0.053	0.1730	1.08	0.97	1.19
April	0.313	0.051	0.0000 **	1.37	1.24	1.51
May	0.186	0.052	0.0000 **	1.20	1.09	1.33
June	0.286	0.051	0.0000 **	1.33	1.20	1.47
July	0.278	0.051	0.0000 **	1.32	1.20	1.46
August	0.138	0.052	0.0080 **	1.15	1.04	1.27
September	0.048	0.053	0.3700	1.05	0.94	1.16
October	-0.089	0.055	0.1060	0.91	0.82	1.02
November	-0.173	0.056	0.0020 **	0.84	0.75	0.94
December	-					
n=1,042,344 person-months; events=9,428	concordance=71.2%		*pseudo-R^2* =.069		** p<.01, * p<.05	

1. Months range from January 1985 to December 2004. Each woman had an observation for every month in which she was 15 or over and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.
Data from 2000 and 2005 Rwandan Demographic and Health Surveys

Table 5.8: Logistic Model Predicting Month of First Birth, Married Rwandan Women, 1985-2004 [1]

Variable Name	*Regression Coefficient*	*Standard Error*	*P Value*		*Odds Ratio*	*Lower OR*	*Upper OR*
Age	0.302	0.034	<.0001	**	1.35	1.27	1.44
Age^2	-0.006	0.001	<.0001	**	0.99	0.99	1.00
Months since first marriage	0.063	0.002	<.0001	**	1.06	1.06	1.07
Months since first marriage^2	-0.001	0.000	<.0001	**	1.00	1.00	1.00
Where Born							
Born in an urban area	-	-	-		-	-	-
Born in a rural area	-0.061	0.045	0.1720		0.94	0.86	1.03
Education							
None	-	-	-		-	-	-
Primary education	0.061	0.026	0.0200	*	1.06	1.01	1.12
Secondary education	0.167	0.041	<.0001	**	1.18	1.09	1.28
Post-secondary education	0.222	0.131	0.0920		1.25	0.96	1.61
Time Period							
Pre-genocide	-	-	-		-	-	-
April to July 1994 (during genocide)	0.309	0.085	<.0001	**	1.36	1.15	1.61
August 1994 to December 1997 ("genocide aftermath")	0.111	0.028	<.0001	**	1.12	1.06	1.18
1998 and after ("post-genocide")	0.128	0.027	<.0001	**	1.14	1.08	1.20
Month							
January	0.175	0.055	0.0020	*	1.19	1.07	1.33
February	0.040	0.057	0.4860		1.04	0.93	1.16
March	-0.026	0.058	0.6580		0.97	0.87	1.09
April	0.271	0.054	<.0001	**	1.31	1.18	1.46
May	0.140	0.056	0.0120	*	1.15	1.03	1.28
June	0.280	0.055	<.0001	**	1.32	1.19	1.47
July	0.294	0.054	<.0001	**	1.34	1.21	1.49
August	0.130	0.056	0.0200	*	1.14	1.02	1.27
September	0.045	0.057	0.4340		1.05	0.94	1.17
October	-0.112	0.059	0.0590		0.89	0.80	1.00
November	-0.187	0.060	0.0020	**	0.83	0.74	0.93
December	-	-	-		-	-	-

n=163,532 person-months; events=8,486 concordance=66.8% *pseudo-R* ^{2} =.039 ** p<.01, * p<.05

1. Months range from January 1985 to December 2004. Each woman had an observation for every month in which she was married and had not yet given birth. In the month she did give birth (an 'event'), her outcome was 1 instead of 0 and she exited the sample.

Data from 2000 and 2005 Rwandan Demographic and Health Surveys

5.7 Conclusion

In this chapter I have explored the potential causal pathways between genocide and fertility. Genocide and its concurrent crises may affect fertility in a variety of ways, and sometimes in opposing directions. Wartime malnutrition and stress can reduce women's fecundity and increase miscarriages, while rape and lack of birth control may increase births. After the war, widowhood will likely reduce births—though remarriage tends to increase childbearing—and a tendency to replace lost children may counter the extent to which postponed fertility may ultimately fail to materialize.

We can imagine four possible trends in fertility in response to genocide, as illustrated in Figure 5.1. These trends would occur above and beyond any existing trends in fertility rates. The 'null hypothesis' (and its partner, the 'divergence hypothesis') state that the fertility trend would be unchanged by genocide and war. This is either because the causation between the two is weak, or because genocide affects fertility among subgroups of women in opposing directions and these effects cancel out at the national level. The second possible trend is the 'replacement/crisis hypothesis', which posits that there would be a decrease in births during wartime due to spousal separation, infecundity, and famine, but that afterward couples would seek to make up for lost births and perhaps to replace children who died. The third possible trend—and one that has been suggested in the literature—is the 'fertility transition hypothesis,' namely that women's limitation of fertility during wartime sparks a 'realization' that births can be limited and this ultimately induces or accelerates the fertility transition. The final hypothesis about fertility rates during and after genocide is what I term the 'pronatalist' hypothesis—that after wartime, the ethnic groups most involved in the war would attempt to increase their fertility due to a heightened sense of ethnic competition.

Actual trends in fertility appear to be consistent with the 'crisis/replacement' hypothesis in both countries, and later declines are on par with the 'fertility transition' hypothesis in Rwanda. There is an unexplained jump in births in Rwanda after the genocide that did not correspond to a decrease in births during April to June of 1994—a jump which is consistent with the 'pronatalist hypothesis'—but to some extent this may be a reaction to earlier declines in births during the economic crisis in the early 1990s. While we cannot discern the 'divergence hypothesis' from national data, there were likely sub-national divergences in birth rates between women who were acutely affected by trauma and displacement.

Unfortunately there has not been a nationally representative fertility survey in Bosnia to gauge attitudes toward fertility and births, so I had to rely more heavily on individual and key informant interviews there than I did in Rwanda. One surprising finding from my interview study is that despite (or because of?) the low fertility rate in Bosnia, women there were much more willing to have children: on average, they were happier about their last birth, wanted more children now, and were twice as likely to say that becoming pregnant now would not be a problem. I had assumed that with a pool of 54 respondents in one of the lowest fertility countries in the world that I would find at least one woman who would say that she had

consciously decided *not* to have children. This was not the case. It is unclear how realistic stated fertility aspirations are among older single women, but nonetheless, all of my childless respondents firmly expressed a desire to have children.

The causation behind these trends was complex. There was some evidence that wartime malnutrition, stress, and spousal separation increased miscarriages and reduced births. There were also economic reasons for women to limit their births in Rwanda, particularly due to the cost of education, but the economic theme was cited much more frequently in Bosnia than in Rwanda. Women's access to family planning remained somewhat stable in Bosnia, while in Rwanda family planning programs were dissolved in the wake of the genocide, during what key informants referred to as the 'crisis period.' A chart of birth rates in relation to national turning points in the war showed a surprising correlation in each country, suggesting a stronger role of national events and future outlook in determining fertility than has been previously reported.

Quantitative analysis of first births (the only reliable birth dates recorded in Bosnia) were mixed. Among all women in Bosnia, education and age were strongly predictive of time to first birth, along with time period (with women much less likely to have a first birth during and moreso after the war). Being an ethnic Croatian also slightly reduced the risk of giving birth in any particular month. But marriage also remains an important gateway to fertility in both countries: less than one in twelve births occur to unmarried women. In Bosnia, the small number of first births (615) reduced the explanatory power of logistic regression models; none of the variables predicting first births, including time since first marriage, were statistically significant there.

In Rwanda, among all women, age, education, and time period were the strongest predictors of first births. Interestingly, women were more likely to give birth during the genocide and much more likely to give birth during the genocide aftermath (August 1994 to December 1997) than they were before the genocide or after 1998, when access to family planning sharply increased. Among married Rwandan women, age and months since first marriage were significant and in the expected direction; women were also much more likely to give birth during the genocide than they were afterward. This is surprising because the downing of Habyarimana's plane was a surprise, and conception would have occurred well before anticipation of the start of genocide. Intriguingly, married women with a secondary education were more likely to give birth in any given month than their less-educated or more-educated counterparts. Other war-related covariates, such as displacement or loss of an infant[88], were not available to analyze. Drawing on evidence from secondary data and the interviews I conducted in each country, I would tentatively conclude that the most important causal mechanisms between genocide and births were economic (struggle to afford children, particularly in Bosnia), access to family planning, and the crisis/replacement effect.

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[88] The dependent variable was the month of first birth; women would not have lost an infant before this date.

Chapter 6: Conclusion

Marriage, sexuality, and childbearing are sites of trauma as well as sources of survival and resilience for women during crises such as war and genocide. Widows, rape survivors, orphans, and mothers who lose their children are the most acutely affected by war-related trauma. Even 'ordinary' women who are not targets of direct violence may witness conflict, become displaced, lose loved ones, experience food shortages or property damage, and spend months or years living in fear. These experiences may lead to delayed marriage and childbearing. Yet war may also unite new couples—either out of love or economic necessity—and may increase or hasten childbearing among couples who seek to replace lost children, widows who remarry, among others.

In this dissertation I have explored many of the ways in which the lived experiences of war and genocide interacted with pre-existing patterns of reproduction and marriage to shape women's nuptial and reproductive trajectories in Bosnia and Rwanda. It is important to recognize that wars and genocides encompass multiple different types of crises: famine, economic shocks, political turmoil, displacement, mortality, destruction of infrastructure, intimate social trauma, among others. For some survivors, the lived experience of war and genocide was one aspect of a complex set of life experiences. War and genocide certainly continue to affect broader economic circumstances, housing opportunities, national political stability, and other aspects of women's lives that in turn affect marriage and childbearing, but for these women the lived experience of genocide itself was one of many stressful life experiences. For other women, genocide was a devastating trauma that overshadowed their life course, halted marriage or involuntarily hastened fertility. In every case, war and genocide increased women's uncertainty about their own future.

While Rwanda and Bosnia had very different social, political, and economic circumstances prior to genocide in the mid-1990s, it is instructive to examine the similarities and differences between the two events. Both genocides were similar to the extent that they were nearly concurrent, involved ethnic cleansing of a group that was more privileged under previous rulers (Belgian colonialists in Rwanda and the Ottoman Empire in Bosnia). Both cases involved a staggering amount of neighbor-against-neighbor violence in two multiethnic societies that until the early 1990s coexisted fairly peacefully. One of the major differences, however, was the sheer totality of violence. With very little scrutiny or interference from coalition forces such as the United Nations, Rwandan Hutu militias and the Presidential guard carried out the genocide virtually uninterrupted until the RPF soldiers drove them away. At least one in eight Rwandans perished during the genocide. In Bosnia, on the other hand, mortality was more limited in scope; around one in forty persons perished. The totality of violence may, in part, be attributed to relative population size of each group: Tutsis were a small minority (9%) while Bosniaks were a plurality (44%). In the buildup to the conflict, Hutu extremists had not only stockpiled weapons, but they had also gathered extensive lists of their intended targets. In Bosnia, there was little preparation before the post-election invasion. While resistance armies were poorly equipped, the size equilibrium of forces meant that the

siege in Sarajevo was unlikely to ever wipe out the population; its goal instead may have been to induce displacement away from land that Serbs considered to be theirs.

The divergent demographic circumstances of each country prior to the onset of armed conflict make discerning causality between genocide, marriage, and fertility difficult. Prior to genocide, marriage was near-universal in both countries. Women's age at first marriage was only slightly higher in Bosnia than in Rwanda. Despite these similarities in nuptiality, Rwanda had one of the highest fertility rates in the world prior to 1990; while in Bosnia, fertility was already well below replacement level. In the absence of genocide we might have expected Rwandan fertility to decline in pace with the demographic transition and for Bosnian fertility to stagnate at its already low level.

Data on actual trends in marriage and fertility in Bosnia and Rwanda was difficult to procure due to the limited population data available during and after wartime. Rwanda does not have vital registries; instead, it relies on censuses and large-scale population surveys to estimate vital rates. Such surveys were impossible to carry out during and after the genocide. In Bosnia, vital registries were suspended during wartime, and afterward registration and computation were divided among different administrative entities without reference to overall population size. Cross-country databases such as those compiled by the United Nations provide 5-year Total Fertility Rates, which are of limited usefulness for tracking short-term trends. Moreover, these cross-country databases tend to smooth trends over time in such a way that it can be difficult to observe overall trends. In terms of marriage, cross-country databases only provide indicators such as median age at first marriage, which may tell us about the age composition of women who marry, but does not tell us anything about the overall marriage rate.

Due to the limitations of extant descriptive data about nuptial and reproductive trends, I analyzed data from nationally-representative surveys in each country: the 2000, and 2005 *Demographic and Health Surveys* in Rwanda, and the World Bank's 2001-2002 *Living Standards Measurement Survey* in Bosnia). Using retrospective birth and nuptial histories from the women interviewed in these surveys, I pieced together a broad outline of short-term nuptial and fertility patterns over the past three decades. I computed monthly birth and marriage tallies, which were adjusted for seasonality, as well as an annual age-standardized retrospective first-birth rate among women.

In Rwanda, first marriages rose dramatically in the year following the 1994 genocide, then returned to pre-genocide levels by 1997. Women married slightly earlier from 1994 to 2002 than they had before the genocide. Meanwhile, the birth rate fell dramatically in Rwanda in the nine months after the genocide, and then peaked in mid-1996. Birth rates were highest near 2000 after the first elections and the defeat of the *Bacengezi*. In Bosnia, first marriages declined dramatically after the dissolution of Yugoslavia and reached their lowest during the first year of war (1992). After that, rates of first marriage continued to fluctuate at a level between the earlier extremes. After the war ended in December of 1995, women married at significantly

later ages for several years, suggesting a 'delay effect' from the war. In Bosnia there did not appear to be a baby boom until four years after the war ended, which coincided with the adoption of a common currency and the first post-war elections. Fertility rates in Bosnia since the late 1990s have continued to decline to among the lowest levels in the world.

Why did the postwar marriage rate increase in Rwanda during and after the genocide but decline in Bosnia? And why would Rwanda experience a small baby boom after the end of the genocide and again in 2000, while in Bosnia there was only a modest increase in births several years after the end of the war? Individual women in Bosnia and Rwanda had different and unique reasons for the timing or absence of marriage and births; such demographic events are the complex byproduct of intentional and involuntary actions. At the national level, based on the weight of the evidence available to me, I conclude that four key sets of factors help explain the post-war marriage and baby boom in Rwanda and the general post-war nuptial and fertility decline in Bosnia*:* (1) involuntary factors, (2) material and economic factors, (3) sex ratio and gender role factors, and (4) psychosocial factors. Here I briefly explore each set of factors in turn.

6.1 Involuntary Factors

The duration of conflict and the magnitude of displacement and mortality have important effects on the ways in which war and genocide affect demographic trends. There is a strong tendency to postpone marriage and childbearing during war and crisis, when resources are low, spouses may be separated, and the future is uncertain. In Bosnia, the war and genocide lasted more than twelve times as long as it did in Rwanda, although the sheer intensity of violence was lower than in Rwanda. Relative to original population, Rwanda suffered four times as many casualties as Bosnia during three months of genocide. In both countries a substantial portion of the population lived in fear for months or years, suffered the loss of loved ones, experienced economic devastation, became displaced from their homes, and, in some cases, endured rape, torture, and threats of death. Each of these experiences may have different implications for marriage and fertility.

Displacement in Rwanda tended to be of shorter duration than in Bosnia, and Bosnian displacement tended to be to other people's homes, which— unlike refugee or IDP camps— did not provide food nor proximity to potential new partners. In Rwanda the influx of formerly exiled Tutsis after the genocide means that some of these retrospective births and marriages are from women who lived as exiles during the genocide. For these women, most of whom arrived in Rwanda by 1996, the genocide was not a lived experience, and migration to Rwanda sometimes opened up new economic opportunities, stability, and a national identity that was previously unavailable.

In Bosnia there appeared to be a small increase in marriage rates after the end of the major military offensive in 1992 and again after NATO bombing in 1994-95, but after the Dayton Accords were signed in 1995 the increase in marriage rate was not substantial. Women's

age at first marriage increased significantly after war, suggesting a postponement effect in Bosnia. Births increased slightly after the war in Bosnia but then dropped below pre-war levels, suggesting the continuing depressive effects of sustained conflict and displacement. In Rwanda there was a substantial increase in first marriages after the end of genocide, an effect which was not explained by postponement during the short three months of the genocide.

The population balance of ethnic groups likely had only a slight effect on marriage and fertility rates. Hutus, who comprised more than 80 percent of the Rwandan population prior to the genocide, tended to report low levels of postwar trauma. Tutsi women, who tended to have a higher age at first marriage than Hutu women, were disproportionately killed during the genocide. This may have contributed to the slight postwar drop in the age at first marriage and the increase in postwar fertility. In Bosnia, women of childbearing age were only a small proportion of casualties and the pre-existing ethnic differences in fertility and nuptiality were not large enough to have had an overall effect on rates.

Additional involuntary factors which may have affected fertility include rape, spousal separation, access to family planning, miscarriage, infant mortality, and famine-related infecundity. While rape was a horrific trend in both countries during and after conflict, the birth estimates from rape cited by advocates appeared to be impossibly large. Overall, rape likely increased births during (in the case of Bosnia) and after genocide, but only to a small extent. Spousal separation during wartime, on the other hand, and stress-induced miscarriage and infecundity likely had an important depressive effect on wartime fertility. Women's limited access to family planning in Rwanda during and for a few years after the genocide there seemed to increase fertility, while in Bosnia women had relatively stable access to family planning even during wartime, except in a few extreme cases.

6.2 Economic and Material Factors

I find evidence that the loss of male relatives and the economic benefits of marriage during times of economic hardship, increased marriage rates—or, in Bosnia tempered the decline in marriage rates—during and immediately after the war. These effects seem to have been stronger in Rwanda than in Bosnia. In Rwanda the extent and severity of family killings, the limited availability of land, and the lack of inheritance rights for female orphans and widows increased rates of marriage in the short-run. This increase was somewhat surprising, given the more even sex and age ratio of killings in Rwanda; however the proportion of the population killed was around four times the magnitude in Rwanda as it was in Bosnia and the mass incarceration of several hundred thousand Hutu men for many years after the war ended increased the proportion of women who lost a family breadwinner during the war.

In Bosnia, which suffered the most severe economic collapse of any country since World War II (World Bank 1997: 3), the economic tailspin that accompanied the transition to a privatized economy reduced fertility rates during and after the war and reduced marriage rates after the war was over. Given increased rates of unemployment during and after the war, few

couples could afford to embark on a new life together, and male partners seemed less appealing. Affording children was also difficult: as Richard Easterlin has observed, parents tend to want as good or better for their children, and when economic circumstances do not permit this, fertility tends to decrease. I hypothesize that high levels of unemployment are a major reason why marriages in Bosnia declined so sharply after the war.

In Rwanda, on the other hand, families lived much closer to subsistence level and formal employment was relatively uncommon to begin with. Rural and urban residents frequently subsist by farming or doing small-scale entrepreneurial activities, and while land is limited it seems that subsistence living is available to many if couples are willing to labor on someone else's land in exchange for a small homestead and/or a share of the crops. In Rwanda the hundreds of millions of dollars of international aid money that poured in after the war also increased employment opportunities overall. Land shortages are still endemic in Rwanda and extensive poverty causes much suffering. The necessity of independent household formation, particularly among orphans and widows, seemed to increase marriage in Rwanda, while fertility was ultimately depressed by limited arable land and the imposition of school fees, which many families struggle to afford.

6.3 Gender Roles and Sex Ratio

The long-term effect of a heavily male proportion of war casualties, which is hypothesized to eventually cause either a decline in the marriage rate, a shift to different age patterns of marriage, or an increase in polygamous marriages, is difficult to assess. In Bosnia the sex ratio seems to have been less affected by war than in Rwanda, and yet except for a brief post-war increase, Bosnian marriages continued to decline throughout the 1990s. Rwandan marriage rates began to decline four years after the war, which is an unlikely long period of time for the effects of a disproportionate loss of men to manifest in the marriage rate. I could not find any evidence of a change in age differences between spouses in either country over time (neither an increase in women marrying older men nor an increase in women marrying younger men, nor a bifurcation), nor an increase in polygamy in Rwanda, though this is difficult to ascertain. My general impression is that Bosnians are more accepting of the notion of 'love marriage' and tend to seek compatibility and even friendship, whereas in Rwanda the notion of love has not traditionally been a prerequisite to marriage. In this way, Rwandan marriage rates may be more subject to economic and familial influences than marriage rates in Bosnia.

In terms of childbearing, there were important effects of gender roles in Bosnia. It is difficult for Yugoslav women to accept the reduction in their employment opportunities that accompanied privatization, and the inability to balance work and family life under the new system (maternity leave has been abolished and employers are not even required to hold a position open for a woman who works outside of the home). There was also some evidence of a shift in gender role expectations during/after war—due to the division of labor during war (combat vs. homefront), men expected women to do more housework. In Rwanda women have almost always balanced work and marriage by farming, and still do. Any woman who is

rich enough to be formally employed can also easily afford her own nanny and at least one *kadogo*-a 'house-boy' or 'house-girl' who essentially is a live-in servant, doing cooking and cleaning and shopping and laundry and dishes, etc.; most can also easily afford a nanny. In this way childbearing and employment are much more compatible in Rwanda than in Bosnia.

6.4 Psychosocial Factors

Psychosocial factors, such as trauma, ethnic tensions, social embeddedness, future outlook, and trust in government have important though relatively unexplored effects on nuptiality and fertility. Genocide reduces social trust, exposes a large proportion of the population to traumatic experiences, and—at least in the short-term—reduces future outlook and trust in government. Social embeddedness, the breadth and depth of one's social network, is important for finding a marital partner. To the extent that fertility is planned, it involves some level of future outlook and faith in the ability to care for and afford a child. For these reasons, I argue that psychosocial factors are an important and understudied factor in marriage and fertility rates.

The level of trust Rwandans place in their government is high. As discussed in Chapter 4, a recent poll found that 97% of Rwandans trust that their government is doing the best it can to improve the lives of people. In Bosnia on the other hand, social trust and faith in government is low. Many of my respondents complain that the world has virtually forgotten them, that while Serbia and Croatia are on the path to EU citizenship, Bosnia is unlikely to be considered anytime soon. Moreover, in Rwanda, the resolution of genocide was decisive and ushered in a new generation of leadership. President Kagame first encountered resistance among Hutu hardliners, but his stated platform of 'one Rwanda' and his multiethnic government has won him the support of a majority of voters. On the other hand, the Dayton Accords in Bosnia permanently enshrined wartime ethnic divisions among the population. These divisions have grown more pronounced over time with the use of separate alphabets (Cyrillic and Latin), different flags, different anthems, and separate governments.

Ethnic tensions remain in both countries, but in Bosnia they are permanently embedded in the social and political fabric of the country. While this may have ordinarily encouraged ethnic pronatalism, as has been the case in Palestine and Israel, other factors prevented an increase in the birth rate. My sense was that the *duration* of conflict mattered a lot: in Rwanda, the genocide was more or less an acute crisis, intense but finished within 100 days, and as such could to some extent be compartmentalized within women's lives. In Bosnia, the war bitterly lingered on for years, and in many ways the Dayton Accords only served to institutionalize the social fractures from genocide. Bosnian women's coping skills—in particular, the tendency to downplay emotion, to try to ignore what was happening and maintain a sense of "normalcy" thus became more of a part of their personality. Concentration camp survivors' groups and rape clinics in Bosnia told me that their caseload has been increasing as women are only now able to remember and admit what happened to them. Bosnians also harbor a lot of anger toward the outside world for not helping during the crisis (but being interested in studying it afterward –

this resentment came out frequently during interviews), whereas Rwandan women were less visibly angry with the outside world for not intervening.

War-related trauma was extensive among both populations, even for many years after conflict ended. It is difficult to hypothesize exactly how this would have affected fertility and nuptiality—some survivors may seek attachment to others, or may seek to have children in order to bring joy to a bleak world—but largely it is expected that trauma would reduce marriage and fertility, as was generally true among the women I interviewed in both countries. I did not administer a PTSD scale, but women who suffered severe war-related trauma seemed to be less socially embedded and more pessimistic about the future than other women. Indeed, a foreshortened sense about the future with regards to marriage and childbearing is a part of the PTSD scale. Except in cases where familial and economic pressures induced marriage and childbearing—as was the case for some of the rape survivors I interviewed in Rwanda—it generally seems likely that traumatized segments of the population would have reduced their childbearing and marriage afterward.

6.5 Overall Conclusion

Armed conflict in Bosnia and Rwanda in the mid-1990s affected the entire population. At a minimum, war and genocide disrupted the most vital arenas of life: housing, education, employment, and health care. The demographic processes of nuptiality and reproduction are useful points of comparative inquiry between the genocides in these two vastly different countries. As essential processes for population growth, childbearing—and its usual predecessor, marriage—are comparable population metrics across time and space. Nuptiality and fertility also encompass a vast array of crisis-related experiences. Women, the focus of my research, were mothers, daughters, wives, and caretakers of combatants and victims; some are widows and refugees, even now. Women may curtail or delay childbearing until instability ends, only to find that they have delayed past their childbearing years. On the other hand, war may unite new couples through displacement.

The Bosnian and Rwandan cases suggest that any framework for evaluating the demographic effects of crises must carefully consider pre-crisis trends in marriage and fertility; in particular, the degree to which births occur within marriage and the extent to which fertility rates are already under the 'calculus of conscious choice.' After background factors are taken into consideration, it is important to consider four sets of causal effects: *involuntary factors* such as population composition, migration, and mortality; *economic and material factors*, *psychosocial factors*, and *sex ratio and gender role factors* as mediating channels through which crisis affects nuptiality and ultimately fertility.

Extant data makes the investigation of these dynamics difficult. There is a great need for better data on population dynamics in post-conflict settings. For this reason, I supplemented quantitative datasets with my own survey in each country. My results were necessarily

somewhat inconclusive, but they do suggest the potential of developing a systematic framework of the effects of crisis on reproductive and nuptial dynamics.

While both the Rwandan and Bosnian genocides involved a staggering amount of death, suffering, and loss, it could be said that the Rwandan genocide was characterized by high mortality, with a loss of at least 8% of the population, while the Bosnian genocide and accompanying privatization were characterized by enormous economic devastation and damage to infrastructure. In other words, the mortality effects dominated in Rwanda, increasing marriage and fertility rates, while in Bosnia economic effects dominated, decreasing marriage and fertility rates.

Amidst a dearth of scholarly work on war and genocide, most extant research focuses on perpetrators and victims. Research must also consider the direct and indirect ways in which war and genocide affect the entire population. In this dissertation I contribute to the gap in existing knowledge by exploring the ways in which genocide and concurrent wars in Bosnia and Rwanda affected women's marital and childbearing trajectories there. Survivors of wartime trauma have acute needs for medical and social services during wartime and long after the war is over. The long-term needs for reconstruction and recovery in the wake of conflict deserve more attention.

My research points toward a potential framework for disentangling the effects of crises on reproductive and nuptial dynamics. Genocide is an extreme type of crisis which encompasses economic and political collapse, famine, mortality, displacement, and trauma. A typology of crisis effects on fertility and nuptiality would consider the ways in which these constituent crises should affect proximate and intermediate determinants of fertility and nuptiality.

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Appendix A: Survey Recruitment

UNIVERSITY OF CALIFORNIA, BERKELEY

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Dear

My name is Sarah Staveteig. I am a Ph.D. student in the Departments of Demography and Sociology at the University of California at Berkeley.

I would like to invite you to take part in my research. It concerns women's fertility in BiH/Rwanda. If you agree to participate, I would like to conduct a private interview with you and my translator at the time and location of your choice today or sometime during the next week. The interview can be conducted here at a private room in your home, or at another location of your choice. It will involve questions about places you've lived, your education, marital status, and children (if any) and should last less than two hours. With your permission, I will audiotape the interview.

Your responses will remain confidential and anonymous. Your participation would be completely voluntary and you are free to refuse to take part.

My local phone number is **[…]** and my e-mail is sarahs@demog.berkeley.edu. My permanent contact information is also listed above.

Thank you for your consideration of my request,

Sincerely,

Sarah Staveteig

SCREENING QUESTIONS

Hello, my name is [TRANSLATOR] and I am here with Sarah Staveteig, who is a Ph.D. student at the University of California at Berkeley. We are interested in finding women between age 20 and 55 to participate in a study of fertility in Bosnia-Herzegovina/Rwanda.

Are there any women aged 20 to 55 who live in your household?

If so, are they home right now?

[If yes, continue to verbal recruitment; else leave written recruitment letter with family and ask that it be given to the prospective respondent when she returns home. Ask about convenient times to return.]

VERBAL RECRUITMENT

[Verbal recruitment script for prospective participants who are currently present at the time of screening. To be read by Sarah and translated into appropriate local language for respondent.]

Hello. My name is Sarah Staveteig. I am a Ph.D. student in the Departments of Demography and Sociology at the University of California at Berkeley. Here is my business card

I would like to invite you to take part in my research. It concerns women's fertility in BiH/Rwanda. If you agree to participate, my translator and I would conduct a private interview with you at the time of your choice today or sometime during the next week. The interview can be conducted here at a private room in your home, or at another location of your choice. It will involve questions about your household, your life history, and your children (if any). The interview should last less than two hours.

Your responses will remain confidential and anonymous. Your participation would be completely voluntary and you are free to refuse to take part.

Are you willing to be interviewed for my study?

If so, when would be most convenient for you? Where would you prefer to meet?

VERBAL CONSENT
[PRIOR TO STARTING INTERVIEW]

I would like to ask you for your permission to be interviewed. May I audiotape my request for your permission?

[Begin recording]

My name is Sarah Staveteig. I am a doctoral student in the Departments of Demography and Sociology at the University of California at Berkeley.

I would like to interview you as part of my research. It concerns women's fertility in Bosnia-Herzegovina/Rwanda.

There are no foreseeable risks to you from participating in this research. There is no direct benefit to you; however I hope that the research will benefit society by understanding women's reproductive decision-making in BiH/Rwanda. There will be no costs to you, other than your time involved.

All of the information that my translator and I obtain from you during the research will be kept confidential. We will not ask you your name or your address. If you permit me to record the rest of the interview, I will keep it in a digitally locked computer file. After this research is completed, I may save the recording and my notes for use in future research. However, the same confidentiality guarantees will apply to future storage and use of the materials.

Your participation in this research is voluntary. You are free to refuse to take part. You may refuse to answer any questions and may stop taking part in the study at any time. I have given you a business card with my contact information in case you have any questions.

Do you agree to take part in this research? *[Yes/No]*

May I record the rest of our interview? *[Yes/No]*

Appendix B: Survey Instrument [English]

Interview # _____
Date & Time _____
Neighborhood _____

Interview Guide

INDIVIDUAL BACKGROUND

Thank you for agreeing to participate in the survey. My first few questions concern your current situation and life history.

1. How often do you read a **newspaper** or **magazine**?
2. How about the radio – how often do you listen to the **radio**? Watch **TV?**
3. What is your **religious background**? • Do you currently **practice** your **religion**? (How often pray / attend church ?)
4. [BOSNIA ONLY] What would you say is your **ethnic or national identity**?
5. In what **month** and **year** were you **born**?
[Fill in "life history" table as questions below are asked] 6. How long have you lived continuously at your current **place of residence**? Where did you live before that? *[work backward to year of birth. Note times when away from residence]* • *[If unclear]* did you live here during the war? • Why did you move to _____ ? • What is the current (age/sex) composition of your household?
7. Please tell me about your **educational attainment.** What is the highest diploma you have obtained? When was that? … *[Verify that years correspond to place of residence.]*
8. Now I'm interested in learning about your **employment**. Do you currently work outside of the home? How long have you been working there? What was your previous job? *[Work backward to first job. Verify that years correspond to education and place of residence].* Include **informal** employment. • If partner or other adults aged 20-64 in household: do they work outside the home?
9. Now I'd like to ask you about **romantic relationships** particularly as they relate to the risk of pregnancy. Are you currently married? *[If so, for how long?]* If not, are you currently with a partner? … What about before that? • *[if with a husband]* Have you and your husband ever lived apart? • *[if with a boyfriend or partner]* Do you hope to marry your partner someday? • *[if without a partner]* Are you happy being single?
10. Now I'm interested in learning about previous **pregnancies** and **births**. Are you currently pregnant now? What are the DOBs of your children? Have you had other pregnancies that ended in a miscarriage or abortion? How about a stillbirth?
11. What about **other sexual encounters**? Have you ever been forced to have sex? What about casual sex?
12. If it's okay I'd also like to ask you if you've ever **lost** a member of your immediate family?

FERTILITY / CHILDREN DETAILS

13. [IF CHILDREN <12] What is the **child care** situation like for your children?
14. [IF RESIDENT CHILDREN >18] Are your children **working** or going to **school**?

15. [IF NON-RESIDENT CHILDREN] Where are your **other children living**? Are they married? ..

16. [IF ANY PREGNANCIES] I'm interested in learning about your decision-making with regards to birth. Thinking about your most recent pregnancy, **at the time you became pregnant did you want to become pregnant then, earlier, later, or not at all**?
    - What about your **partner**. How did he feel about the most recent birth when he found out?

17. Family planning: **do you currently take measures to prevent births**? How long have you been using it? What about previously? [Inquire about after last birth.]
    - Do you and your partner discuss family planning? [probe]
    - Have you discussed family planning with any of your female friends? [probe]

18. [IF < 45] In the next few weeks, if you **discovered that you were pregnant**, would that be a big problem, a small problem, or no problem for you? Why? What about for your partner?

CURRENT SITUATION

I just have a few last questions for you.

19. Looking back over your life, would you say that your current **standard of living** now is better or worse than it was when you were growing up? Before the war? Why?

20. We talked a bit about the war and I want to ask you how you think it impacted your **relationship with your spouse** – did it bring you closer or further apart? What about your relationship with your children/parents?
    - And how about your **community**: do you feel like you are closer to your community now or before?

21. What was the **ideal number of children** you wanted to have before the war? Did it change after the war? Why/why not?

22. As you think about the **future**, I wanted to know if you think you will:
    - Have additional/new children?
    - *[if applicable]* Find a new husband or boyfriend?
    - Move somewhere soon?

23. Is there anything you'd like to add, or do you have any questions for me?

Thank you so much for sharing this information with us. We will hold it with the utmost confidentiality.


Places Lived
Education
Employment
Romantic relationships
Other Sexual Encounters
Pregnancies & Births
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