Fragile peace in Rwanda

Investigating readiness to reconcile, ethnic discrimination, mental stress, appetitive aggression, and religion as variables of peaceful coexistence after genocide

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Lale Heim

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1. Referentin: PD Dr. Susanne Schaal
2. Referent: Prof. Dr. Thomas Elbert

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This work is dedicated to those who were killed in the Rwandan genocide and to their families.
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Murakoze cyane!
## Contents

TABLES ........................................................................................................... I
FIGURES ......................................................................................................... II
ABBREVIATIONS .......................................................................................... III
PREFACE ......................................................................................................... IV
SUMMARY ....................................................................................................... VI
ZUSAMMENFASSUNG .................................................................................... X

1 General introduction .................................................................................. 1
   1.1 Ethnic discrimination and genocide in Rwanda ...................................... 1
   1.2 The rationale for the present research .................................................... 2
      1.2.1 Reconciliation and ethnic discrimination in post-genocide Rwanda ...... 2
      1.2.2 Mental stress and peaceful coexistence in post-genocide Rwanda ...... 4
      1.2.3 Appetitive aggression and peaceful coexistence in post-genocide Rwanda .. 5
      1.2.4 Religion and peaceful coexistence in post-genocide Rwanda ............ 6
   1.3 Introduction to the research questions of the four individual studies ........ 7

2 Study I. Construction, application, and validation of a reconciliation questionnaire in a sample of Rwandans ................................................................. 13
   2.1 Abstract ............................................................................................... 13
   2.2 Introduction ......................................................................................... 13
   2.3 Method ............................................................................................... 17
      2.3.1 Participants .................................................................................. 17
      2.3.2 Procedure .................................................................................. 18
      2.3.3 Measures .................................................................................. 19
      2.3.4 Data analysis ............................................................................ 22
   2.4 Results ............................................................................................... 22
      2.4.1 Development of the Readiness to Reconcile Inventory (RRI) ............ 22
      2.4.2 Group differences in the readiness to reconcile ............................... 27
      2.4.3 Predictors of the readiness to reconcile .......................................... 28
   2.5 Discussion .......................................................................................... 29
      2.5.1 Limitations ............................................................................... 31
      2.5.2 Conclusion .............................................................................. 31
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Study II. Rates and predictors of mental stress in Rwanda:</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Abstract</td>
<td>33</td>
</tr>
<tr>
<td>3.2</td>
<td>Introduction</td>
<td>34</td>
</tr>
<tr>
<td>3.3</td>
<td>Method</td>
<td>36</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Study design and procedure</td>
<td>36</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Measures</td>
<td>37</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Data analysis</td>
<td>39</td>
</tr>
<tr>
<td>3.4</td>
<td>Results</td>
<td>40</td>
</tr>
<tr>
<td>3.4.1</td>
<td>Demographic characteristics</td>
<td>40</td>
</tr>
<tr>
<td>3.4.2</td>
<td>Trauma exposure and rates of mental stress</td>
<td>41</td>
</tr>
<tr>
<td>3.4.3</td>
<td>Structural equation model</td>
<td>41</td>
</tr>
<tr>
<td>3.5</td>
<td>Discussion</td>
<td>44</td>
</tr>
<tr>
<td>3.5.1</td>
<td>Limitations</td>
<td>46</td>
</tr>
<tr>
<td>3.5.2</td>
<td>Conclusion</td>
<td>47</td>
</tr>
<tr>
<td>4</td>
<td>Study III. Still not one people: Implicit ethnic perception of Tutsis in Rwanda</td>
<td>48</td>
</tr>
<tr>
<td>4.1</td>
<td>Abstract</td>
<td>48</td>
</tr>
<tr>
<td>4.2</td>
<td>Introduction</td>
<td>48</td>
</tr>
<tr>
<td>4.3</td>
<td>Method</td>
<td>51</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Sampling procedure and survey data collection</td>
<td>51</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Socio-demographic characteristics and questionnaire measures</td>
<td>52</td>
</tr>
<tr>
<td>4.3.3</td>
<td>Computer-based priming experiment: Stimulus material</td>
<td>55</td>
</tr>
<tr>
<td>4.3.4</td>
<td>Computer-based priming experiment: Procedure</td>
<td>55</td>
</tr>
<tr>
<td>4.3.5</td>
<td>Data analysis</td>
<td>58</td>
</tr>
<tr>
<td>4.4</td>
<td>Results</td>
<td>60</td>
</tr>
<tr>
<td>4.4.1</td>
<td>Implicit perception of Tutsis</td>
<td>60</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Implicit perception of Tutsis and readiness to reconcile</td>
<td>61</td>
</tr>
<tr>
<td>4.5</td>
<td>Discussion</td>
<td>63</td>
</tr>
<tr>
<td>4.5.1</td>
<td>Limitations</td>
<td>65</td>
</tr>
<tr>
<td>4.5.2</td>
<td>Conclusion</td>
<td>65</td>
</tr>
</tbody>
</table>
Study IV. Posttraumatic stress disorder and appetitive aggression in Rwandan genocide perpetrators

5.1 Abstract
5.2 Introduction
5.3 Method
  5.3.1 Participants and procedure
  5.3.2 Measures
  5.3.3 Data analysis
5.4 Results
  5.4.1 Trauma exposure and posttraumatic stress disorder
  5.4.2 Criminological characteristics and committed offenses
  5.4.3 Appetitive aggression and correlates of appetitive aggression
5.5 Discussion
  5.5.1 Limitations
  5.5.2 Conclusion

6 General discussion
  6.1 Practical implications for reconciliation and ethnic discrimination in Rwanda
  6.2 Practical implications for mental stress in Rwanda
  6.3 Practical implications with regard to appetitive aggression in confessed genocide perpetrators
  6.4 Practical implications with regard to religion in Rwanda
  6.5 General conclusion

7 Record of achievement

8 References
Tables

Table 2.1 Characteristics of the sample................................................................................................................................. 18
Table 2.2 Rotated factor loadings of the 15 items in the total sample.......................................................... 23
Table 2.3 Goodness-of-fit statistics of confirmatory factor analyses with maximum likelihood estimation............................................................................................................................. 25
Table 2.4 Item analyses of the Readiness to Reconcile Inventory (RRI). .......................................................... 26
Table 2.5 Correlations of the reconciliation scales with external variables.......................................................... 27
Table 2.6 Simultaneous multiple regression analysis with the Readiness to Reconcile Inventory (RRI) score as dependent variable. .................................................................................................................................................. 28
Table 3.1 Correlations of the manifest variables of the structural equation model (SEM)........................... 42
Table 3.2 Coefficients of the final structural equation model (SEM). .......................................................... 43
Table 4.1 Socio-demographic data and minimums, maximums, means, and standard deviations for scores on the Readiness to Reconcile Inventory (RRI) and the Appetitive Aggression Scale (AAS) in non-persecuted persons (n = 46)........................................................................................... 54
Table 4.2 Descriptive statistics of average reaction rates to symbols of privilege and to symbols of victimization in the baseline block .................................................................................................................... 58
Table 4.3 Descriptive statistics of average reaction rates to the prime-symbol combinations in the priming block. .................................................................................................................................................. 59
Table 4.4 Correlation matrix of the privilege index (PI), the victimization index (VI), and the independent variables. .................................................................................................................................................. 61
Table 4.5 Simultaneous multiple regression analyses with the privilege index (PI) and the victimization index (VI) as dependent variables.............................................................................................................. 62
Table 5.1 Demographic characteristics in Rwandan genocide perpetrators. .................................................. 71
Table 5.2 Negative binomial regression analysis with the Appetitive Aggression Scale (AAS) score as the dependent variable in Rwandan genocide perpetrators. ........................................ 76
Figures

Figure 2.1 Baseline model. ........................................................................................................... 24
Figure 3.1 Initial structural equation model.................................................................................. 40
Figure 3.2 Final structural equation model with standardized path coefficients \((N = 200)\)........ 43
Figure 4.1 Design of the priming task.......................................................................................... 57
Figure 4.2 Mean facilitation scores for symbols of privilege and victimization preceded by Hutu and by Tutsi prime photos in non-persecuted \((n = 45)\) and in persecuted individuals \((n = 17)\). .................................................................................. 60
Figure 5.1 Percentage of committed offenses in Rwandan male \((n = 133)\) and female \((n = 67)\) perpetrators.................................................................................................................. 75
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAS</td>
<td>Appetitive Aggression Scale</td>
</tr>
<tr>
<td>AMOS</td>
<td>Analysis of Moment Structures</td>
</tr>
<tr>
<td>Brief RCOPE</td>
<td>Brief Religious Coping Scale</td>
</tr>
<tr>
<td>CIIM</td>
<td>Common Ingroup Identity Model</td>
</tr>
<tr>
<td>CRS</td>
<td>Centrality of Religiosity Scale</td>
</tr>
<tr>
<td>EtG</td>
<td>Inventory of Emotions towards God</td>
</tr>
<tr>
<td>FDLR</td>
<td>Force Démocratiques de Libération du Rwanda</td>
</tr>
<tr>
<td>FORNET</td>
<td>Narrative Exposure Therapy for Forensic Offenders Rehabilitation</td>
</tr>
<tr>
<td>FPI-R</td>
<td>Revised Freiburger Personality Interview</td>
</tr>
<tr>
<td>HSCL-25</td>
<td>Hopkins Symptom Checklist-25</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>IBM SPSS</td>
<td>International Business Machines Corporation Statistical Package for the Social Sciences</td>
</tr>
<tr>
<td>ICTR</td>
<td>International Crime Tribunal of Rwanda</td>
</tr>
<tr>
<td>IPT</td>
<td>Interpersonal Trust Scale</td>
</tr>
<tr>
<td>MAP</td>
<td>Velicer’s Minimum-Average-Partial-Test</td>
</tr>
<tr>
<td>MFS</td>
<td>Mean facilitation scores</td>
</tr>
<tr>
<td>MI-RSB 48</td>
<td>Multidimensional Inventory for Religious/Spiritual Well-Being</td>
</tr>
<tr>
<td>NURC</td>
<td>National Unity and Reconciliation Commission</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PAF</td>
<td>Principal axis factor analysis</td>
</tr>
<tr>
<td>PI</td>
<td>Privilege index</td>
</tr>
<tr>
<td>PSS-I</td>
<td>Post-traumatic stress disorder Symptom Scale-Interview</td>
</tr>
<tr>
<td>PTBS</td>
<td>Posttraumatische Belastungsstörung</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-traumatic stress disorder</td>
</tr>
<tr>
<td>RPF</td>
<td>Rwandan Patriotic Front</td>
</tr>
<tr>
<td>RRI</td>
<td>Readiness to Reconcile Inventory</td>
</tr>
<tr>
<td>SEM</td>
<td>Structural equation modeling</td>
</tr>
<tr>
<td>TIG</td>
<td>Travail d'Intérêt Général</td>
</tr>
<tr>
<td>TRC</td>
<td>South African Truth and Reconciliation Commission</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>VI</td>
<td>Victimized index</td>
</tr>
</tbody>
</table>
Preface

The topic for this investigation and the specific research questions evolved from the following distinct incidents, that I experienced in Rwanda and which I was told from Rwandans.

*While serving a voluntary service in Rwanda, I spent my first free weekend in the countryside’s hills. To my surprise, the villages were deserted. Strolling through the abandoned lanes all of a sudden there were human voices. Following the sounds, I entered a church, crowded with people, who were standing, singing, and hypnotically clapping their hands with their eyes closed. I joined the ceremony, which was still in full progress when I left about two hours later.*

*About one week after starting my voluntary service in a Rwandan mental-health charity, my Rwandan colleague showed me the patients’ files. I had one patient, who never spoke a word, mostly sitting alone in thoughts or praying the rosary. Reading her genogram, I learned that not only her parents, aunts, and uncles were killed in 1994, but also her six brothers and sisters.*

*In 2007, my Rwandan housemaid’s husband had been diagnosed with a bipolar depression. Visiting him, he showed me his hands, which were full of anti-depressive pills telling me proudly: “I don’t take them. I know that they want to poison me. My traditional medicine man told me that my problems are stemming from this poison, which my wife mixed into my food.” His wife fled a few days later as he attempted to kill her with a machete.*

*Throughout the country I saw men in rose shirts, mostly packed on the loading areas of old trucks. I quickly learned who they were: Prisoned genocide perpetrators.*

*In the course of my volunteer service I started an association aiming to support Rwandan women. In 2009 after having worked with my Rwandan partner for two years, I dared asking him whether ethnicity still played an important role in daily Rwandan life. He answered in the affirmative and told me: “We are not allowed to name ethnics, but people know if someone is Hutu or Tutsi. And if you doubt, you will be fully aware after a two or three minutes’ chat.”*
Working with the vulnerable Rwandan women of my association, I soon got to know their regular solution when facing difficulties: « C’est dieu qui va nous aider [God is the one who will help us]. »

In 2009, a Rwandan friend living in Germany told me: "My Mum would never admit it, but I know that she would be really disappointed if I fall in love with a Hutu."

In the beginning of 2017 a Rwandan friend informed me, that she would leave Rwanda for the time around the election period. She explained, that there would be no free elections. This period of time would be awkward as the national security service would be much more active than usual. Neighbors would be leaning over fences to eavesdrop on other neighbors, and the general population would be extremely watchful. In addition, she said, that these circumstances and details would remain fully hidden from non-Rwandans.
Summary

More than two decades after the genocide, Rwanda is an ambitious African state, aiming to overcome its devastating past and its status as a developing nation. However, as a consequence of the genocide, highly elevated rates of mental stress continue to challenge the Rwandan public health system (Hédon, 2016). Rwanda’s democracy is weak, freedom of speech and freedom of assembly are severely restricted, and ethnic equality continues to be falling short (Human Rights Watch, 2010, 2017). A great number of detained perpetrators are awaiting their upcoming release into society which nourishes fears of new burst of violence in Rwanda.

Against this backdrop, societal reconciliation, a reduction of ethnic discrimination, mental health, and a reduction of aggressive potency in genocide perpetrators are essential prerequisites for lasting peaceful coexistence in Rwanda. Reconciliation is a construct which originates in religion and is a pivotal concept in the sphere of religious action. Religion also offers direction regarding issues concerning mental stress and aggression. However, despite the fact that Rwanda’s population is highly religious, there is a lack of empiric research into the relevance of religion for the above specified variables. The present clinical and social psychological study investigates the concepts of readiness to reconcile, mental stress, and appetitive aggression in Rwanda and measures correlations between these variables and religion. In addition, objective data on ethnic perception are collected in order to examine implicit inter-ethnic bias in persons, who have not been persecuted during the Rwandan genocide. Thereby, this study aims to provide an empiric insight towards a better understanding of peaceful coexistence in post-genocide Rwanda.

Data collection was conducted in January and February 2011. A total of 400 Rwandans participated in the research, 200 of which were community residents and the remaining 200 were confessed genocide perpetrators (TIGists), who - at the time of data collection - were living in camps and serving community service (TIG, Travail d'Intérêt Général). Study I was conducted to gain a better understanding of readiness to reconcile in Rwanda. For this purpose, a reconciliation questionnaire was developed and applied to the total sample. The newly elaborated questionnaire determines readiness to reconcile on the micro (individual) level, on the meso (group) level, and on the macro (institutional) level, which are considered relevant for societal reconciliation (Gibson, 2004). Following an inductive approach, a total of 17 reconciliation items were generated and presented to the respondents. From the 17 items,
factor analyses revealed a 15-item reconciliation questionnaire, which was labeled Readiness to Reconcile Inventory (RRI). The RRI-sub scales equity and equality and trust and cohesion have been validated in the sub-samples of community residents and confessed perpetrators and - across these two groups - in persons who were persecuted \( (n = 118) \) and in persons who were not persecuted \( (n = 382) \) during the period of genocide. The RRI significantly correlated with variables of institutional trust, interpersonal trust, independent judiciary, and forgiveness, thus providing evidence for external validity. In addition, the following variables were found to be positively associated with readiness to reconcile: (1) being a confessed perpetrator (compared to being a community resident), (2) being a persecuted individual (compared to being a non-persecuted individual), (3) displaying lower levels of posttraumatic stress disorder (PTSD) symptom severity, and (4) displaying higher levels of positive emotions towards God (Huber & Richard, 2010). Negative emotions towards God were found to be associated with lower levels of readiness to reconcile.

Study II aimed at the development and empiric examination of a model that clarifies associations between mental stress, readiness to reconcile, religion, and socio-demographic variables in the sample of community residents \( (N = 200) \). Mental stress was operationally defined as symptom severity of PTSD, depression, and anxiety. Of the study sample, 11% presented with PTSD, 19% with syndromal depression, and 23% with syndromal anxiety. Religion was differentiated into centrality (Huber, 2004) and religious functioning. While centrality describes the extent of religious practice (e.g. frequency of church attendance), religious functioning refers to the type of religious attitude. A gracious notion of God and a constructive use of religion in order to cope with problems are the essence of positive religious functioning. On the contrary, negative religious functioning comprises a punitive notion of God and a deconstructive use of religion. Study-results showed, that lower levels of readiness to reconcile, female gender, and having been persecuted during the genocide are risk factors for mental stress. The association between mental stress and centrality was twofold, providing evidence, that (1) higher levels of mental stress are paired with increasing centrality and that (2) higher centrality is associated with decreasing rates of mental stress. Moderated by readiness to reconcile and - in the case of positive religious functioning - by centrality, positive and negative religious functioning were found to have an indirect negative and positive effect on mental stress, respectively.

Considering unity and reconciliation as inseparable pillars for peaceful coexistence in Rwanda, the Rwandan government prohibited the use of ethnic labels in 2001. However, study III was guided by the assumption that ethnic differentiation still exists in Rwanda. It
was supposed, that non-persecuted Rwandans (Hutus) continue to perceive Tutsis as privileged and - instead of the genocide and contrary to their official representation - not as victimized. The study-hypotheses were examined by applying a computer based priming experiment in a sample of 46 Rwandans, who were not persecuted during the period of genocide. The reaction rate to combinations of Tutsi-photos with symbols of privilege and symbols of victimization, respectively, was collected and compared with the reaction rate to corresponding Hutu-symbol-combinations. Providing evidence for a prevalent Tutsi-privilege-bias in non-persecuted individuals, responsiveness to the Tutsi-privilege combinations was significantly faster compared to responsiveness to Hutu-privilege combinations. No differences in speed were found in the responsiveness to Tutsi- and Hutu-victimization combinations. The implicit perception of Tutsis was independent of readiness to reconcile.

In study IV, PTSD, levels of appetitive aggression, and correlates of appetitive aggression were examined in confessed genocide perpetrators (N = 200). Appetitive aggression refers to feelings of joy sought by perpetrators through the exposure to violence cues while committing acts of violence or inflicting harm to a victim (Elbert, Weierstall, & Schauer, 2010). Of the participants, five percent fulfilled diagnostic criteria for PTSD. Elevated levels of appetitive aggression were common. Results demonstrate, that male gender, a high number of past committed offenses, low levels of positive religious coping, and elevated levels of negative religious coping are risk factors for higher levels of appetitive aggression. Positive religious coping thereby refers to a constructive use of religion, and negative religious coping to a dysfunctional use of religion in order to cope with problems (Pargament, Smith, Koenig, & Perez, 1998). Appetitive aggression was not associated with PTSD.

In conclusion, the research-outcomes include (1) a validated reconciliation questionnaire, (2) empirical data on the expression of readiness to reconcile and on correlates of readiness to reconcile in Rwanda, (3) prevalence rates of PTSD, syndromal anxiety, and syndromal depression in Rwandan community residents, and (4) the determination of PTSD, appetitive aggression, and correlates of appetitive aggression in confessed genocide perpetrators. Results provide evidence that (5) readiness to reconcile and mental stress are closely connected and that (6) religion is significantly correlated with readiness to reconcile, mental stress, and appetitive aggression. Finally, it was found, that (7) non-persecuted Rwandans still associate Tutsis with privilege and that this ethnic bias is independent of readiness to reconcile.

The findings of the research indicate, that it is necessary to develop Rwanda’s mental health infrastructure in order to respond to an urgent societal need. Improved mental health care
would especially benefit women and persons who were persecuted during the genocide, as it was found, that these groups of persons are particularly affected by mental stress. Results further show, that positive religious attitudes are associated with higher levels of readiness to reconcile as well as with lower levels of mental stress and with lower levels of appetitive aggression in confessed genocide perpetrators. Negative religious attitudes have the opposite effect. These findings imply that - depending on the specific content - religion can support or undermine peaceful coexistence in the post-genocide state. In order to avoid negative religious manipulation impeding upon peace efforts, it is recommended to carefully monitor the content of religious doctrine which is preached in Rwanda. In addition, mental health professionals are advised to raise issues of religion in therapy and counseling; for example, in order to uncover and to work on dysfunctional religious beliefs. To deconstruct ethnic stereotypes as found in study III it is proposed that equal treatments of ethnic groups as well as initiating an open exchange between ethnic groups, and also encouraging the debate on the ethnic topic could be important steps and thus support a peaceful coexistence in Rwanda.


1 General introduction

The global aim of the present research was to investigate factors for peaceful coexistence in Rwanda. The work comprises four studies, each examining distinct research questions. The following brief summary of genocide and ethnic discrimination in Rwanda precedes the rationale for investigating readiness to reconcile and ethnic discrimination, mental stress, appetitive aggression, and religion as initiators for peaceful coexistence in Rwanda. This paragraph is succeeded by an introduction into the original research questions of the four individual studies.

1.1 Ethnic discrimination and genocide in Rwanda

Rwanda is strongly associated with the 1994-genocide, which was exceptionally swift and brutal and largely ignored by the international community. In this highly religious country, the victims were put to death directly by hand. Neighbors killed neighbors; family members killed family members; friends killed friends. Hutus killed hundreds of thousands of Tutsis as well as about ten thousand moderate Hutus. The Rwandan Patriotic Front (RPF), an army of exiled Tutsis, ended the genocide in July 1994 and thereby killed tens of thousands of Hutus. Approximately one million persons were killed within three months (Des Forges, 1999; Mamdani, 2001; Straus, 2006).

The roots of the genocide originate in the pre-colonial times, during which the social categories of Hutu and Tutsi were created. Lower status farmers were referred to as Hutus and higher status herdsmen were referred to as Tutsis (Vasina, 2004). This negative differentiation was maintained and strengthen by the first Europeans in Rwanda. They literally measured noses and facial features to determine ethnic classification; Hutus were determined to stem from the minor Bantu Negro race and Tutsis to stem from the superior Hamitic race. Therefore, Tutsis were favored with leading jobs and had privileged access to education, whereas Hutus were treated as secondary citizens (Chrétien, 2003). While originally ethnic classification was flexible depending on the number of cattle raised by the individual, it became permanent and unchangeable by the introduction of identity cards under Belgian colonial rule (Straus, 2006). In 1959, social disadvantage and discrimination of Hutus led to a revolution, which brought Hutus into power. The following discrimination, expropriation, and expulsion of Tutsis caused the flight of tens of thousands of Tutsis to the neighboring
countries of Uganda, Congo, Tanzania, and Burundi. In Uganda, the Rwandan Patriotic Front (RPF) was assembled and started to infiltrate Rwanda as of 1990, initiating a civil war based on the ownership of land. In 1993 the United Nations (UN) mediated a peace agreement between the conflicting partners. Almost simultaneously, extremist Hutu politicians began with their preparation for the genocide, pursuing the explicit goal of exterminating all Tutsis. In addition to arming and training the militia, Hutu activists spread aggressive propaganda, portraying Tutsis as inhuman. They openly encouraged the Hutu population to participate in the killing of Tutsis. In April 1994, the plane crash of then-president Juvenal Habyarimana sparked the genocide killings (for more information, see Des Forges, 1999). These killings were marked by a high involvement of the Rwandan Hutu population and by extreme cruelty. An estimated 14% to 17% of the male Rwandan Hutu population participated in committing the atrocities against Tutsis, as well as against moderate Hutus (Straus, 2006). Victims were mortified before being massacred, corpses were desecrated, women were raped, and systematically infected with HIV (Hatzfeld, 2004, 2005/2006; Mamdani 2001). It is estimated, that the genocide took the lives of between two thirds and three fourths of the total Tutsi population (Staub, 2002).

1.2 The rationale for the present research

In the aftermath of ethnic conflict and genocide, sustainable peaceful coexistence between Hutus and Tutsis is needed in Rwanda. From a social and clinical psychological perspective, this study investigates readiness to reconcile, ethnic discrimination, mental stress, appetitive aggression, and religion as variables of peaceful coexistence in Rwanda. The rationale for investigating these variables is subsequently described.

1.2.1 Reconciliation and ethnic discrimination in post-genocide Rwanda

Reconciliation [...] is the restoration of a broken relationship. And for that to happen you need a change of heart and behavior on the side part of the offended and of the offender.

Rutayisire, A. (2009, p. 172)

Reconciliation is regarded as essential for living together in peace after intractable conflicts, which have damaged and divided societies (Kelman, 2008; Lederach, 1997; Maddison, 2016). In the aftermath of the twentieth Century of Genocide (Totten, Parsons, & Charny, 2004) “reconciliation” - originally a religious notion - has been conceptualized in various ways. Crucial factors of reconciliation include (1) on the individual level healing from trauma
General introduction

(Galtung, 2001; Staub, Pearlman, Gubin, & Hagengimana, 2005; Staub, Pearlman, Gubin, & Hagengimana, 2005), (2) on the interpersonal level changes in inter-group beliefs and behavior, acknowledgement of guilt, repentance, excuse, a deconstruction of stereotypes, and a formation of peaceful relations (Bar-Tal, 2000a; Gibson, 2004; Kelman, 2008). As well as (3) on the institutional level, democracy, dialogue among opponents, tolerance (Bloomfield, 2003), and justice, both restorative and retributive (Amstutz, 2006; Philpott, 2009). For the most part, reconciliation is defined as a multidimensional, reciprocal, and gradual process or as the end of a process.

After coming into power, the RPF government took various actions in order to come to terms with the genocide and to facilitate reconciliation. Legal processing of the genocide included the 1995-2015 International Crime Tribunal of Rwanda (ICTR) and the 2002-2012 revival of Gacaca courts. In these traditional Rwandan courts, members of a community came together to investigate and judge genocide related crimes. Elderly or other respected community residents chaired the sessions, which aimed to uncover the truth, to fairly convict perpetrators, and thereby to foster peace, unity, and reconciliation in post-genocide Rwanda. A commemorative culture has been established, which includes numerous memorial sites throughout the country, as well as the annual 100-day genocide memorial period. In 1999 the National Unity and Reconciliation Commission (NURC) was established in order to promote and foster reconciliation on a societal level (National Unity and Reconciliation Commission, 2010). Among others, the NURC organizes reeducation camps, so-called Ingando, in which participants are briefed on the RPF-governments unity and reconciliation ideology. In this ideology, responsibility for the genocide is attributed to the Belgian colonialists and to bad leadership of the pre-genocide Rwandan government. Ethnic differentiation is considered artificial. Instead, a common unified Rwandan identity is proclaimed (Mgbako, 2005). Laws that prohibit discussing or naming ethnic groups in Rwanda were passed in 2001 and 2003 in order to stop ethnic discrimination and the diffusion of genocide ideology.

However, while the Rwandan initiative to actively promote reconciliation after the genocide is exemplary, there are critical and contradictory points to mention. Since the year 2000, Rwanda is led by the RPF party, which emerged from the RPF Tutsi army. This party tightly directs the reconciliation process in Rwanda. Power is thus concentrated in the hands of the minority ethnic group (Staub, 2006). While implementing their unity and reconciliation policy, the RPF government is criticized for misusing the prohibition of ethnic classification as a blueprint for the suppression of controversial inter-ethnic dialogue. And also for the persecution and detention of opposition or inconvenient journalists who continue to debate issues of ethnicity (Human Rights Watch, 2017; Reyntjens, 2004; Waldorf, 2011).
Meanwhile, in many sectors of public and official life politics in post-genocide Rwanda are in disadvantage of persons, who were not persecuted during the genocide (for more information see the edited volume of Straus & Waldorf, 2011). A respective contradictory ethnic policy nourishes concerns that in the long term, reconciliation and such peaceful coexistence in Rwanda might be at risk (Staub, 2006). Against this backdrop, the present work aims to investigate readiness to reconcile and correlates of readiness to reconcile in post-genocide Rwanda, as well as ethnic discrimination and the association between ethnic discrimination and readiness to reconcile (study I, study II, study III).

1.2.2 Mental stress and peaceful coexistence in post-genocide Rwanda

*People need to find peace inside themselves before they can build a peaceful society.*


Politically framed, peace building after genocide is a national process, whose success depends significantly on its implementation by single individuals within the society (Ambramowitz, 2014; Krüger, 2006; Mujawayo, 2014). To exchange, to understand, to tell and to discover the truth, to excuse, and to reconcile after intractable conflict, demands willingness, mental strength, and discipline on an individual level. Mental stress can prevent those concerned from engaging in this process and thereby undermine peace efforts. Corresponding, Mukashema & Mullet (2010) reported a negative association between anxiety as part of poor mental health and reconciliation sentiment in Rwanda. Schaal and colleagues (Schaal, Weierstall, Dusingizemungu, & Elbert, 2012) found the severity of PTSD and depression to be negatively associated with agreement to reconciliation in the post-genocide state.

Research has shown, that rates of PTSD, depression, and anxiety are strongly elevated in Rwanda (Bolton, Neugebauer, & Ndogoni, 2002; Pham, Weinstein, & Longman, 2004; Schaal et al., 2012). These elevated rates of mental stress are juxtaposed to a poor infrastructure providing psychiatric services. Situated in and in the proximity of Kigali, Rwanda counts two main structures that provide specialized mental health care. Mostly based in the capital, there were only six psychiatrists working in the country in 2014. In addition, psychiatric nurses are employed in district hospitals, offering mental health services countrywide. In the aftermath of the genocide, a clinical psychology department has been established at the National University of Rwanda in Butare and meanwhile there are also a few hundred graduated psychologists working in the country (Austrian Centre for Country of Origin and Asylum Research and Documentation, 2015). However, in spite of these efforts to
improve access to psychiatric and psychological care, supply is short for covering the high demand. In African countries, priests, traditional healers, and warlocks are usually standing in one line with doctors (Thielke, 2005). They offer answers to vital issues, including how to deal with blows of fate, losses, and illness. By providing explanation and advice, religious and spiritual figures are filling the gap left by poor mental health infrastructure and are thereby playing an important, though largely unofficial role in Rwanda’s mental health system. However, to date correlations between religion and mental stress have not been empirically examined.

In order to investigate the significance of mental stress for peace building after intractable conflict the present work aims at the investigation of actual rates and of correlates of mental stress in Rwanda (study, I, study II, study IV). Besides appetitive aggression, these correlates include readiness to reconcile and, for the first time, religion. Inter-correlations between mental stress, readiness to reconcile, and religion are examined in study II.

1.2.3 Appetitive aggression and peaceful coexistence in post-genocide Rwanda

_We went about all sorts of human business without a care in the world - provided we concentrated on killing during the day, naturally._

_At the end of [the genocide] [...] deep down, we were not tired of anything._


Numerous genocide perpetrators who had been detained after the genocide are already released or are awaiting their upcoming release into society. Their social reintegration into the Rwandan community feeds anxiety for new bursts of violence. While victims articulate difficulty in trusting genocide perpetrators, family members of perpetrators fear acts of revenge (Penal Reform International, 2007). In this context the question arises, if the motivations for the violence are still prominent in confessed perpetrators. Societal and cultural factors, such as ethnic indoctrination, group pressure, and obedience as well as poverty and greed have been discussed as motivators for participation in the Rwandan genocide (Longman, 2004). In addition, killing itself might have been a motive. - Rwandan genocide perpetrators have disclosed, that some of them experienced joy and excitement when putting a victim to death (Hatzfeld, 2005/2006). “The perpetration of violence or the infliction of harm to a victim in order to experience violence-related enjoyment by the exposure to violence cues” has been labeled _appetitive aggression_ (Elbert, Weierstall, & Schauer, 2010, p. 104). Elevated levels of appetitive aggression have been reported in
combatants, who had been exposed to war and extreme violence, including torture, rape, and killing (Hecker, Hermenau, Maedl, Schauer, & Elbert, 2013; Köbach, Schaal, & Elbert, 2015; Weierstall, Castellanos, Neuner, & Elbert, 2013). Substantial levels of appetitive aggression have also been found in prisoned Rwandan genocide perpetrators (Weierstall, Schaal, Schalinski, Dusingizemungu, & Elbert, 2011). Appetitive aggression is intrinsically motivated and aims at individual satisfaction. Therefore, appetitive aggression is a hardly controllable risk factor for a relapse of violent behavior in released genocide perpetrators. In this work, levels of appetitive aggression as well as of correlates of appetitive aggression are examined in detained confessed genocide perpetrators (study IV). It is expected, that respective empiric insight can contribute to the development and advancement of programs designed to promote the peaceful reintegration of perpetrators into society.

### 1.2.4 Religion and peaceful coexistence in post-genocide Rwanda

Or is it that scientific researchers need to rediscover religion as 

“an extremely potent source of values for individuals as well as cultures (Park, 2005)”?

Rutayisire, A. (2010, p. 187)

Reconciliation and peaceful coexistence are central religious issues. However, during the Rwandan genocide, religion was used to justify the killing. Many leaders of the Hutu-militia Force Démocratiques de Libération du Rwanda (FDLR) were and still are priests. They referred to the fundamentalist Hutu-ideology, which says, that God gave Rwanda solely to Hutus and thereby legitimized the atrocities committed against Tutsis and moderate Hutus during the genocide (Schlindwein, 2015). Correspondingly, the Rwandan Church supported genocide. Pretending to offer shelter, tens of thousands of Tutsis were piloted into churches, where extremist Hutu militia massacred them (Mamdani, 2001). As Rwandan history shows, religious manipulation can unleash a tremendous power in the African country and thereby represents a significant risk for peaceful coexistence. On the other hand, religion holds the potential to support peace building by promoting unconditional forgiveness and reconciliation. Appleby (2000) argues, that the evolution of religion follows a trajectory, which spans from repentance and retaliation to compassion, forgiveness, and reconciliation. The “internal pluralism” of religion and religious tradition offers religious leaders the choice to define, what “is orthodoxy or heretical, moral or immoral, permitted or forbidden, at a particular moment.” (Appleby, 2000, p. 31). For example, while the support of the genocide by Rwandan priests certainly was an important motive for Rwandan Christians to join the
killing, the rejection of the genocide by Rwandan muftis is supposed to have been crucial for the low engagement of Rwandan Muslims (Doughty & Ntambara, 2005). Despite the role of the Church during the Rwandan genocide, Rwandans continue to be highly religious, with about 90% of the population belonging to a Christian church (Central Intelligence Agency, 2017). Frequently, traditional elements of African folk belief are integrated into the religious practice (Sousa, 2017). Across all societal groups, religion plays a central role in Rwanda’s daily live. Religious and spiritual figures, like priests, nuns or monks, as well as traditional healers, are respected persons and influential opinion holders. As a consequence, it is assumed, that religion impacts peace building in the post-genocide state. In order to gain a better understanding of the role of religion for peaceful coexistence in Rwanda, the present research examines the correlation between religion and factors, which are considered as relevant for peace building after genocide, including readiness to reconcile (study I and study II), mental stress (study II) and appetitive aggression (study IV).

1.3 Introduction to the research questions of the four individual studies

A total of 400 persons participated in this research. Of those, 200 persons were community residents and 200 persons were confessed genocide perpetrators, who conducted TIG service at the time of data collection. Before their release, Rwandan inmates are usually transferred into camps where they are serving community service (TIG, Travail d’Intérêt General); confessed Rwandan genocide perpetrators can spend half of their sentence in these camps. Unlike prison inmates, TIGists are in contact with community residents and - under certain conditions - are allowed to visit their families. In order to prepare their reintegration into society, TIGists also receive vocational training and civic education. Thereby, the TIG-program is officially promoted as an action of restorative justice, which fosters Rwanda’s unity and reconciliation process (Kayiggwa, 2008). Data of all 400 participants were included in the analyses of study I. Depending on the specific research-questions, analyses of study II, III and IV included selected subsamples.

Study I. Some research had already been carried out in order to investigate the current state of reconciliation in Rwanda (National Unity and Reconciliation Commission, 2010; Pham, Weinstein, & Longman, 2004; Schaal, Weierstall, Dusingizemungu, & Elbert, 2012; Staub, Pearlman, Gubin, & Hagengimana, 2005). However, construct validity of the applied questionnaires remained unexamined in the relevant Rwandan subpopulations of community-
residents and perpetrators. In addition, the construct validity has not been examined in terms of persons, who were persecuted during the genocide (mainly Tutsis) and persons, who were not persecuted during the genocide (Hutus). Further, existing reconciliation instruments primarily focus on the micro (individual) and meso (interpersonal) levels of reconciliation, though the macro level and thus institutions, represents a fundamental pillar of reconciliation, as well (Gibson, 2004). Against this backdrop, study I had two goals. The first goal was to develop a reconciliation instrument, which compiles the micro, meso, and macro levels of reconciliation. The second goal was to validate this instrument in the subgroups of community residents and confessed genocide perpetrators and in persecuted and non-persecuted individuals. In addition, correlates of readiness to reconcile were investigated in order to gain a better understanding of factors, which promote or interfere with readiness to reconcile. Referring to the severe genocide crimes committed against Tutsis and moderate Hutus we assumed, that (1) community-residents have a lower readiness to reconcile compared to confessed genocide perpetrators. Yet, with regard to ethnic-inequality at the cost of Hutus in post-genocide Rwanda (see section 1.2.1) we supposed, that (2) in the general sample of non-persecuted individuals, readiness to reconcile is less expressed compared to persecuted individuals. Previous research in Rwanda found a negative association between trauma and reconciliation (Pham et al., 2004; Schaal et al., 2012). Corresponding, we further hypothesized that (3) higher levels of PTSD symptom severity are associated with lower levels of readiness to reconcile. As the concept of reconciliation originates in religion, the last two research hypotheses dealt with the impact of religious belief on readiness to reconcile in Rwanda. Though sharing the same religious affiliation, believers’ representations of God can be very different and respectively provoke very different emotions. Huber & Richard (2010) distinguish “positive emotions towards God” (e.g. protection, hope, release from guilt) and “negative emotions towards God” (e.g. rage, shame, guilt). Supposing, that the quality of emotions towards God has an impact on the believers’ readiness to reconcile it was assumed, that (4) positive emotions towards God predict higher levels of readiness to reconcile and that (5) negative emotions towards God predict lower levels of readiness to reconcile.

Study II. While the study I includes data of all 400 interviewed Rwandans, study II solely focuses on the community-subsample (N = 200). Study goals were twofold. First, the research aimed at the reexamination of the rates of PTSD, syndromal depression, and anxiety in a Rwandan community sample. Second, correlates of mental stress were investigated by applying non-recursive structural equation modeling (SEM). Thereby, gender, persecution,
religion, and readiness to reconcile, were included as predictors of mental stress. Mental stress was operationalized as PTSD, syndromal depression, and anxiety. Previous research (Bolton, Neugebauer, & Ndogoni, 2002; Pham et al., 2004; Schaal et al., 2012) has shown that female gender is positively associated with mental stress and that Tutsis (compared to Hutus) have a higher probability of fulfilling PTSD symptom criteria (Pham et al., 2004). Corresponding, female gender and persecution during the genocide were expected to predict elevated rates of mental stress. With regard to religion, quantity and quality of religion were distinguished and investigated as predictors of mental stress. Referring to Huber (2004), quantity of religion was operationalized as the *centrality* of religion in a person’s private life (e.g. frequency of going to church or praying). Investigating the correlation of centrality and mental stress, a bidirectional relation was expected. Religion provides explanation for human suffering and meaning for loss (Boehnlein, 2007), wherefore people tend to refer to religion in order to cope with stress (Pargament, 1997). As Rwanda is a highly religious country it was hypothesized, that increasing levels of mental stress are associated with increasing centrality. Previous research in Rwanda has shown, that religious belief can help to prevent prolonged grief reactions (Schaal, Jacob, Dusingizemungu, & Elbert, 2010), and that the inclusion of religion in healing groups contributes to the reduction of trauma symptomatology (Staub et al., 2005). Therefore, it was further hypothesized, that higher centrality is associated with lower mental stress. Quality of religion refers to the content of religious belief and is differentiated into positive and negative religious functioning. Positive religious functioning means a safe and confident relationship to God, which is supposed to facilitate a constructive use of religious belief and thereby to promote healing after trauma. On contrary, negative religious functioning represents an anxious and insecure relationship to God, including religious doubts and quarrel. Thereby, negative religious functioning is supposed to hinder healing after stressful live events. Positive and negative religious functioning was operatized as positive emotions towards God and positive religious coping and as negative emotions towards God and negative religious coping, respectively (Huber & Richard, 2010; Pargament, Smith, Koenig, & Perez, 1998). It was expected that positive and negative religious functioning would exert a direct negative and positive influence on mental stress, respectively. Results of study I showed, that positive and negative emotions towards God have a positive and negative influence on readiness to reconcile, respectively. Referring to these findings, religious functioning was further expected, to exert an indirect influence on mental stress, moderated by readiness to reconcile. It was assumed, that positive and negative religious
functioning predict higher and lower levels of readiness to reconcile, respectively, and that readiness to reconcile is negatively associated with mental stress.

**Study III.** Ethnic stereotypes facilitated the genocide in Rwanda. In the pre-genocide propaganda, Tutsis were stigmatized as antagonists of the Rwandan Hutus. It was alleged that Tutsis wanted to recapture the country and to restart submission and exploitation of Hutus in order to regain their privileged status. To overcome ethnic stereotypes after the genocide, the post-genocide Rwandan RPF-government prohibited issuing ethnic classifications and continues to propagate one unified and reconciled Rwandan identity. Yet, - for example, in regard to representation in policy agency, distribution of land, and legal treatment (Reyntjens, 2004; for more information, see the edited volume of Straus & Waldorf, 2011) - the government’s one-identity-policy is contradicted by a preferential treatment of Tutsis. Moreover, Hutu victims are ignored by the genocide’s official relabeling as genocide of Tutsis in 2008. This relabeling has been criticized for even fostering group-thinking by collectively categorizing Tutsis as victims and Hutus as gènocidaires (Eltringham, 2004; Waldorf, 2011). Corresponding, recent qualitative research has shown, that ethnic groups continue to be clearly distinguished by Rwandans (Hilker, 2009; Moss & Vollhardt, 2016). For the first time, **study III** aims to collect objective data on the ethnic perception of Tutsis in Rwanda. Therefore, a computer-based priming experiment was applied to a sample of non-persecuted persons ($N = 46$). As stimulus material, photos of Rwandans, who conformed to stereotypes of Tutsi and Hutu appearance, respectively, were combined with pictures of symbols, representing privilege (e.g. cow, jewelry) and with pictures of symbols, representing victimization (e.g. burning hut, graveyard). Comparing respondents’ reaction rate to the Tutsi and Hutu privilege and -victimization combinations, respectively, the following hypotheses were tested: (1) Tutsis (compared to Hutus) continue to be associated with privilege. (2) Instead of the genocide and on the contrary to their official representation, Tutsis (compared to Hutus) are not associated with victimization by non-persecuted Rwandans. Though qualitative research shows that ethnic groups continue to be distinguished in Rwanda, several quantitative studies provide evidence, that reconciliation takes place in the post-genocide state (National Unity and Reconciliation Commission, 2010; Pham et. al., 2004; Schaal et. al., 2012; Staub, et al., 2005). Referring to these findings, it was further assumed, that (3) the association of Tutsis with privilege or victimization is independent of readiness to reconcile.
Study IV. Study IV was conducted in the subsample of confessed genocide perpetrators (TIGists, \(N = 200\)). The study had two goals. First, rates of PTSD were determined. It has been assumed, that participation in mass atrocities can be traumatizing (MacNair, 2002a; Staub, 2006). Corresponding, Schaal and colleagues (Schaal et al., 2012) found elevated rates of PTSD in Rwandan genocide perpetrators. This study aimed for the first time at the investigation of PTSD in the sample of TIGists.

The second goal was to determine levels of appetitive aggression in TIGists as well as to investigate correlates of appetitive aggression. Elbert et colleagues (2010) argue, that the experience of appetitive aggression while committing atrocities is a protective factor against the development of PTSD symptoms. By activating the hunting network, appetitive aggression is supposed to prevent the integration of a potentially traumatizing event into the competing trauma/fear network (Schauer, Neuner, & Elbert, 2011). This assumption is supported by previous research, which provides evidence for a negative association between PTSD symptom severity and appetitive aggression (Elbert et al., 2010; Weierstall, Schaal, Schalinski, Dusingizemungu, & Elbert, 2011). Corresponding, it was assumed, that (1) lower PTSD symptom severity is associated with higher levels of appetitive aggression.

Further factors found to be positively associated with appetitive aggression, are male gender (Hecker, Hermenau, Maedl, Elbert, & Schauer, 2012; Weierstall et al., 2011) and number of crimes committed (Elbert et al., 2010; Hecker et al., 2012; Weierstall et al., 2011). Therefore, (2) male gender and (3) a higher number of crimes committed during the genocide were expected to predict higher levels of appetitive aggression as well. According to Pargament (1997) religious coping mediates the relationship between a person’s general religious orientation and the outcomes of major life events. Consequently, it was supposed, that confessed genocide perpetrators use religious coping to deal with the genocide. Pargament and colleagues (Pargament, Smith, Koenig, & Perez, 1998) differentiate positive religious coping as “a belief that there is meaning to be found in life, and a sense of spiritual connectedness with others. [And negative religious coping as] a tenuous and ominous view of the word, and a religious struggle in the search for significance.” (Pargament et al., 1998, p. 712). With regard to appetitive aggression in confessed genocide perpetrators, it was supposed that (4) negative religious coping strengthens, while (5) positive religious coping restricts appetitive aggression.
Concluding, the four studies’ research topics are:

(1) The development, application, and validation of a reconciliation questionnaire and the examination of correlates of readiness to reconcile, including group-belonging (confessed genocide perpetrators vs. community residents), persecution during the genocide, PTSD symptom severity, and emotions towards God.

(2) The examination of mental stress (PTSD, syndromal anxiety, and syndromal depression) in a Rwandan community sample and also the examination of correlates of mental stress, including gender, persecution during the genocide, readiness to reconcile, and quantity and quality of religion.

(3) The investigation of the implicit perception of Tutsis in a sample of non-persecuted Rwandans and the exploration of the correlation between ethnic differentiation and readiness to reconcile.

(4) The determination of PTSD and levels of appetitive aggression in confessed genocide perpetrators as well as the investigation of correlates of appetitive aggression, including PTSD symptom severity, gender, number of crimes committed during the genocide, and religious coping.

The four studies are given below. They are followed by the general conclusion, including a summary of the study results and the deduction of practical study-implications.
2 Study I. Construction, application, and validation of a reconciliation questionnaire in a sample of Rwandans

2.1 Abstract

This research is an empirical contribution to the ongoing debate on the promotion of reconciliation and thus on sustainable peaceful coexistence in post-genocide Rwanda. For this purpose, we developed a reconciliation questionnaire and administered it to a sample of 400 Rwandans. Applying principal axis factor analysis, we extracted the 15-item Readiness to Reconcile Inventory (RRI), consisting of the “equity and equality” and the “trust and cohesion” factors. This factor structure was validated in a sample of community residents and in a sample of confessed perpetrators. Across these two groups, the factor structure was validated in persons who were persecuted during the genocide and in persons, who were not persecuted during the genocide. The RRI significantly correlated with the reconciliation-related constructs of institutional and interpersonal trust, independent judiciary, and forgiveness. Group comparisons (community residents vs. confessed perpetrators; individuals, who were persecuted during the genocide vs. individuals, who were not persecuted during the genocide) revealed group differences in the readiness to reconcile. Multiple linear regression analysis showed that being a confessed perpetrator (compared to being a community resident), belonging to the group, which was persecuted during the genocide (compared to belonging to the group, which was not persecuted), displaying lower levels of posttraumatic stress disorder (PTSD) symptom severity, and displaying higher levels of positive emotions towards God were positively associated with readiness to reconcile. Higher levels of negative emotions towards God were associated with lower levels of readiness to reconcile. The implications of these findings for reconciliation in Rwanda are discussed.

2.2 Introduction

In April 1994, following the assassination of Rwanda’s then-president Habyarimana and in a context of war against the Tutsi-dominated Rwandan Patriotic Front (RPF), Hutu hardliners succeeded in mobilizing a great part of the Hutu population to commit the Rwandan genocide. According to Straus (2006) 14% to 17% of the Rwandan male Hutu population joined the
Study I. Construction, application, and validation of a reconciliation questionnaire in a sample of Rwandans

killings. About half a million Tutsis and 10,000 moderate Hutus were killed by June 1994 (De Forges, 1999; Straus, 2006).

Until today, reconciliation remains a great challenge in Rwanda, whose current one-party government is led by the RPF. The RPF national unity and reconciliation policy is based on the *RPF healing truth* (Zorbas, 2009). According to this healing truth, the genocide is a result of the ethnic policy of the Belgian colonial authorities and of the bad leadership of Rwanda’s pre-genocide president Habyarimana. Future Rwanda is designed to become a united middle-income country with economic strength and developed public sectors. Since today development in Rwanda has actually significantly improved (Human Rights Watch, 2014; The World Bank, 2013). However, this progress is accompanied by an array of critical points. For example, freedom of expression and assembly are severely restricted by a large interpretation of the 2001 *Ethnic Divisionism Law* and the 2008/2013 *Genocide Ideology Law*, which prohibit ethnic classification and the use of ethnic labels in Rwanda. Blamed for promoting genocide ideology, arrests, disappearances, and assassinations of voices who criticize the PRF’s ethnic policy are numerous in Rwanda (Human Rights Watch, 2010; Human Rights Watch, 2014; Reyntjens 2006; Waldorf, 2009); in the traditional Rwandan courts (*Gacaca*), which had been reinstalled from 2002 to 2012 in order to investigate genocide related crimes, testifiers were punished for proclaiming genocide ideologies, if they had witnessed RPF crimes or had named Hutu victims (Human Rights Watch, 2011); and instead of the unity and reconciliation policy, the official terminology was set to *genocide of Tutsis* in 2008, ignoring the Hutu victims and finding the entire Hutu population implicitly guilty (Waldorf, 2009).

Focusing on reconciliation in post-conflict states, there is consensus that reconciliation has multiple dimensions and takes place between various actors (Gibson, 2004; Massey & Abu Baker, 2009; Philpott, 2010; Staub, 1999). Gibson (2004) differentiates single individuals on the micro level (e.g., victim and perpetrator), groups on the meso level (e.g., Hutus and Tutsis), and institutions on the macro level. Based on his research in South Africa Gibson names four conditions for reconciliation in a post-conflict society with a democratic institutional framework: (1) interracial reconciliation, (2) political tolerance, (3) support for human rights principles, and (4) recognition of the legitimacy of the political institutions. Comparable to the South African Truth and Reconciliation Commission (TRC), perpetrators, victims, and the public were brought together in the Rwandan Gacaca courts as part of a restorative justice process and in order to foster reconciliation (National Unity and
Reconciliation Commission, 2010). However, as outlined above, trials were biased and Gibson’s characteristics for reconciliation are largely contradicted in today Rwanda. Against this backdrop, this study aims to investigate the readiness to reconcile in Rwanda.

To date, few reconciliation questionnaires for Rwanda exist (National Unity and Reconciliation Commission, 2010; Pham, Weinstein, & Longman, 2004; Schaal, Weierstall, Dusingizemungu, & Elbert, 2012; Staub, Pearlman, Gubin, & Hagengimana, 2005). The most extensive attempt to capture reconciliation in Rwanda was the application of the Rwandan Reconciliation Barometer (National Unity and Reconciliation Commission, 2010), which was administered to 2,969 respondents by the Rwandan National Unity and Reconciliation Commission (NURC). However, though reconciliation involves different actors and is described as a reciprocal, interpersonal, and mutual process (Enright, Freedman, & Rique, 1998; Staub et al., 2005), the validity of this and the other instruments has not been examined across different Rwandan subpopulations. Further, most instruments focus on the micro and meso levels of reconciliation and do not comprise items, which address the macro level of reconciliation. Therefore, the first objective of this study was to develop a reconciliation instrument, which is validated in different societal groups (community residents, confessed perpetrators, persons who were persecuted during the genocide, and persons who were not persecuted during the genocide) and which captures reconciliation on the macro, meso, and micro levels.

The second objective was to investigate group-differences in the readiness to reconcile (community residents vs. confessed perpetrators; persons, who were persecuted during the genocide vs. persons, who were not persecuted during the genocide) as well as to investigate correlates and thus potential predictors of the readiness to reconcile. Controlling for demographic variables (gender, age, education) and socially desirable responses, we examined the following variables as potential predictors of the readiness to reconcile: affiliation to a certain societal group, PTSD symptom severity, and emotions towards God.

Confessed perpetrators acknowledged their genocide related crimes and had acknowledged their guilt. Therefore, we expected confessed perpetrators to be more open towards reconciliation compared to community residents, who had witnessed and survived the atrocities of the genocide in Rwanda. This hypothesis was already tested and confirmed by Schaal et al. (2012). As outlined before, the RPF’s ethnic policy is at disadvantage of individuals, who were not persecuted during the genocide (Hutus), which manifests itself for example in a suppression of political opposition, a biased judicial system, and in a unilateral...
memory culture. Therefore, we expected, that - across the samples of community residents and confessed perpetrators - persons, who were not persecuted during the genocide would display lower levels of readiness to reconcile compared to persons who were persecuted during the genocide (mainly Tutsis). With regard to potential predictors of the readiness to reconcile it was accordingly assumed, that being a confessed perpetrator (compared to being a community resident) and belonging to the group of persons, which was persecuted during the period of genocide (compared to belonging to the group of persons, which was not persecuted) was associated with higher levels of readiness to reconcile.

Besides group membership, PTSD symptom severity and religious belief were investigated as correlates of the readiness to reconcile. The Rwandan population is marked by a high prevalence rate of PTSD (Brounéus, 2010; Neugebauer et al., 2009; Pham et al., 2004; Schaal et al., 2012). Previous research provided evidence, that PTSD symptomatology and openness to reconciliation are negatively associated (Bayer, Klasen, & Adam, 2007; Pham et al., 2004; Schaal et al., 2012). Therefore, it was hypothesized, that higher levels of PTSD symptom severity were associated with lower levels of readiness to reconcile.

The association between religious belief and readiness to reconcile was investigated as Rwanda is a highly religious country with about 96% of the population belonging to a Christian church (Sousa, 2017). Forgiveness is a central obligation for Christians and reconciliation is the ultimate goal of forgiveness (Boehnlein, 2007). According to Kirkpatrick (1992), God is an attachment figure for religious persons. Therefore, emotions towards God may change when evaluating one’s own fate (Huber & Richard, 2010). With regard to the Rwandan population, which has to deal with a past marked by severe interpersonal violations, it was expected that negative emotions towards God were predictive for a lower readiness to reconcile, and that positive emotions towards God were predictive for a higher readiness to reconcile. In summary, it was hypothesized, that higher levels of readiness to reconcile were associated with:

1. Being a confessed perpetrator (compared to being a community-resident)
2. Belonging to the group of persons, which was persecuted during the genocide (compared to belonging to the group of persons, which was not persecuted)
3. Lower symptom severity of PTSD
4. Higher levels of positive emotions towards God
5. Lower levels of negative emotions towards God.
2.3 Method

2.3.1 Participants

Eligible participants were survivors and confessed perpetrators of the Rwandan genocide who were at least 30 years old at the time of the interview and who had experienced the Rwandan genocide in 1994. In total, 400 Rwandans participated in this study. The sample consisted of 179 women (45%) and 221 men (55%). The average age of participants was 47.81 years ($SD = 11.36$, range: 35-94 years). Half of the sample ($n = 200$) comprised a community sample of persons, who had never been accused of or sentenced for any genocide-related crimes. The other half of the sample ($n = 200$) included genocide perpetrators who had confessed their genocide-related crimes. At the time of the interview, they were serving community service (TIG, Travailler d'Intérêt Général) as part of their sentence. All participants were recruited from the capital of Kigali. Across the community sample and the sample of confessed perpetrators, 118 persons (30%) belonged to the group which was persecuted during the genocide and 282 persons (70%) belonged to the group which was not persecuted. Further characteristics of the sample can be drawn from Table 2.1.

Comparisons between the community sample and the sample of confessed perpetrators revealed significant group differences for gender, $\chi^2 (1, N = 400) = 20.43, p < .001, \Phi = .23$; age, $U = 9,471.50$, $p < .001, \Phi = -.46$; years of school completed, $U = 13,489.00$, $p < .001, \Phi = -.29$; and the highest school degree obtained, $U = 15,921.50$, $p < .001, \Phi = -.25$. With regard to the groups of persecuted and non-persecuted individuals, significant between-group differences were found in gender, $\chi^2 (1, N = 400) = 33.36, p < .001, \Phi = .29$; age, $U = 11,183.50$, $p < .001, \Phi = -.26$; years of school completed, $U = 11,524.50$, $p < .001, \Phi = -.25$; and the highest school degree obtained, $U = 12,693.00$, $p < .001, \Phi = -.22$. 
Table 2.1  **Characteristics of the sample.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total (N = 400)</th>
<th>Community (n = 200)</th>
<th>Confessed perpetrators (n = 200)</th>
<th>Persecuted (n = 118)</th>
<th>Non-persecuted (n = 282)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex %, n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>45 (179)</td>
<td>56 (112)</td>
<td>33 (67)</td>
<td>67 (79)</td>
<td>35 (100)</td>
</tr>
<tr>
<td>Male</td>
<td>55 (221)</td>
<td>44 (88)</td>
<td>67 (133)</td>
<td>39 (39)</td>
<td>65 (182)</td>
</tr>
<tr>
<td>Age M, SD</td>
<td>47.81 (11.36)</td>
<td>43.50 (10.67)</td>
<td>52.13 (10.37)</td>
<td>44.00 (12.08)</td>
<td>49.20 (10.77)</td>
</tr>
<tr>
<td>Years of school completed M, SD</td>
<td>3.99 (3.68)</td>
<td>5.12 (4.11)</td>
<td>2.86 (2.79)</td>
<td>5.55 (4.31)</td>
<td>3.33 (3.17)</td>
</tr>
<tr>
<td>Highest school degree obtained %, n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No degree</td>
<td>60 (239)</td>
<td>48 (96)</td>
<td>71 (143)</td>
<td>45 (53)</td>
<td>66 (186)</td>
</tr>
<tr>
<td>Primary school</td>
<td>34 (136)</td>
<td>41 (83)</td>
<td>27 (53)</td>
<td>41 (49)</td>
<td>31 (87)</td>
</tr>
<tr>
<td>Secondary school</td>
<td>2 (10)</td>
<td>5 (10)</td>
<td>—</td>
<td>8 (9)</td>
<td>—</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>3 (11)</td>
<td>4 (7)</td>
<td>2 (4)</td>
<td>4 (5)</td>
<td>2 (6)</td>
</tr>
<tr>
<td>University</td>
<td>1 (4)</td>
<td>2 (4)</td>
<td>—</td>
<td>2 (2)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>Marital status %, n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>9 (38)</td>
<td>16 (33)</td>
<td>2 (5)</td>
<td>19 (22)</td>
<td>6 (16)</td>
</tr>
<tr>
<td>Married</td>
<td>65 (258)</td>
<td>51 (102)</td>
<td>78 (156)</td>
<td>47 (55)</td>
<td>72 (203)</td>
</tr>
<tr>
<td>Partnership</td>
<td>4 (17)</td>
<td>7 (14)</td>
<td>2 (3)</td>
<td>3 (4)</td>
<td>5 (13)</td>
</tr>
<tr>
<td>Separated</td>
<td>4 (14)</td>
<td>—</td>
<td>—</td>
<td>1 (1)</td>
<td>2 (7)</td>
</tr>
<tr>
<td>Divorced</td>
<td>—</td>
<td>1 (6)</td>
<td>11 (23)</td>
<td>6 (7)</td>
<td>—</td>
</tr>
<tr>
<td>Widowed</td>
<td>18 (72)</td>
<td>20 (40)</td>
<td>16 (32)</td>
<td>25 (30)</td>
<td>15 (42)</td>
</tr>
<tr>
<td>Religion %, n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No religion</td>
<td>1 (4)</td>
<td>1 (3)</td>
<td>—</td>
<td>1 (2)</td>
<td>—</td>
</tr>
<tr>
<td>Catholicism</td>
<td>53 (213)</td>
<td>46 (91)</td>
<td>61 (122)</td>
<td>45 (53)</td>
<td>57 (160)</td>
</tr>
<tr>
<td>Protestantism</td>
<td>25 (99)</td>
<td>24 (49)</td>
<td>25 (50)</td>
<td>25 (29)</td>
<td>25 (70)</td>
</tr>
<tr>
<td>Islam</td>
<td>5 (21)</td>
<td>9 (18)</td>
<td>2 (3)</td>
<td>8 (9)</td>
<td>4 (12)</td>
</tr>
<tr>
<td>Adventist</td>
<td>11 (45)</td>
<td>12 (24)</td>
<td>10 (21)</td>
<td>12 (14)</td>
<td>11 (31)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (18)</td>
<td>8 (16)</td>
<td>15 (30)</td>
<td>8 (10)</td>
<td>3 (8)</td>
</tr>
<tr>
<td>Importance of religion %, n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all important</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Not very important</td>
<td>3 (13)</td>
<td>5 (10)</td>
<td>1 (3)</td>
<td>3 (3)</td>
<td>3 (10)</td>
</tr>
<tr>
<td>Important</td>
<td>19 (76)</td>
<td>21 (43)</td>
<td>17 (33)</td>
<td>15 (18)</td>
<td>21 (58)</td>
</tr>
<tr>
<td>Very important</td>
<td>78 (310)</td>
<td>74 (147)</td>
<td>82 (163)</td>
<td>82 (97)</td>
<td>76 (213)</td>
</tr>
</tbody>
</table>

**2.3.2 Procedure**

The study was conducted in Kigali, Rwanda, in January/February 2011. It was approved by the University of Konstanz Ethical Review Board, the Rwandan Ministry of Science and Technology, and the Ministry of Internal Security/Rwanda Prisons Service. All participants were fully informed of the study’s procedure and aims and provided the researchers with their written informed consent. They were assured that no one except the researchers would have access to the collected data. Diagnostic interviews were carried out by ten local Master level psychologists.

The recruitment of the community sample was conceived as a house-to-house survey in the following five randomly selected districts of Kigali: Muhima, Kimisigara, Ndera, Nyamirambo, and Remera. Interviewers went house-to-house, starting at a convenient location within their assigned quarter. Each subsequent house was then approached until the required number of interviews was achieved. The interviewer clarified if inclusion criteria
were met by the dwellers. Houses were re-approached at a later time if nobody was found to
be home or to be available upon the first visit. If more than one person in the same household
met inclusion criteria, one person was randomly chosen for participation. Interviews with the
community sample were carried out at the home of the respondents. Following the interview,
interviewees received 1,000 Rwandan Francs (about 1.20 Euro) for their participation.
Interviews with the perpetrators were carried out in one of the five TIG camps in and around
Kigali: Kayanga, Kinyinya, Mont Kigali, Nduba, and Rusororo. Researchers informed the
TIG staff about the aforementioned inclusion criteria and perpetrators were randomly selected
from a complete list of inmates. All interviews were individually carried out in private rooms
at the camps. The questionnaires which in previous investigations (Schaal and Elbert, 2006;
Schaal, Jacob, Dusingizemungu, & Elbert, 2010; Schaal et al., 2012) had not yet been
translated into Kinyarwanda, were translated into Kinyarwanda in a blind reverse manner by
two independent Rwandans before the start of the survey.
Before data collection, the local psychologists who conducted the interviews participated in
an intensive one-day training, in which they were introduced into the aims of the study and to
the basic theoretical concepts. As part of earlier studies, all local raters had already received
extensive training in conducting structured diagnostic interviews. Each interviewer carried out
20 interviews in the community and 20 interviews in the TIG camps. Interviewers were
regularly supervised during the period of data collection. For both study samples, interviews
lasted about two hours. Eleven subjects (5%) from the community and six subjects (3%) from
the TIG camps rejected participation in the trial.

2.3.3 Measures

The collected sociodemographic data included gender, age, educational background, marital
status, religious affiliation, and importance of religious belief. As the 2001 Ethnic Divisionism
Law prohibits naming of ethnic classification in Rwanda, interviewees were asked whether
they belonged to the group, which had been or to the group which had not been persecuted
during the genocide in order to gather information about their ethnic background. Despite that
there was a spectrum of responses to genocide among Hutus (Fujii, 2009) and that those who
resisted participation in the killings or rescued Tutsis were persecuted as well, the official
terminology in Rwanda was set to “genocide of Tutsis” in 2008. Thus, by formulating the
question in a dichotomous way it was assumed that participants understood the reference to
the ethnic groups and allocated themselves respectively. For the development of the
reconciliation instrument, 17 items were generated based on non-structured interviews with Rwandans (conducted in 2009) and on existing research on reconciliation and its measurement in Rwanda (Pham et al., 2004; Schaal et al., 2012; Staub et al., 2005). We defined four item-categories, which refer to the macro, meso, and micro levels of reconciliation: (a) institutional trust (macro level; seven items; e.g., “In this country all humans are treated equally.”), (b) shared national identity (macro and meso levels; two items; e.g., “Only few people in this country identify with their Rwandan nationality.”), (c) interpersonal trust (meso and micro levels, six items; e.g., “I am cautious towards Rwandans, whom I don’t know.”), and (d) perspective taking (meso and micro levels, two items; e.g., “There are only few offenders who regret their acts during the Genocide.”). All items were answered on a 5-point scale ranging from 0 (totally disagree) to 4 (totally agree). To avoid response bias of acquiescence, eight of the 17 items had a reversed polarity.

Three scales were applied in order to examine the developed reconciliation instrument’s evidence of validity based on the relationship with external variables. Of these three scales, two derived from the Interpersonal Trust Scale (IPT; Rotter, 1967), which measures mistrust and has a 5-point response format reaching from 1 (strongly agree) to 5 (strongly disagree). Referring to the results of the IPT factor analysis of Hunt and colleagues (Hunt, Kohn, & Mallozzi, 1983), the first scale applied was labeled *institutional trust scale* (possible scores range from 5 to 25) and corresponded to the *institutional trust factor*. The institutional trust scale contains five items which capture mistrust in justice, media, and politics. In this study, the participants average value on the scale was $M = 17.63$ ($SD = 3.29$, range: 8-25). Cronbach’s alpha coefficient was 0.56. The second scale, which we labeled the *interpersonal trust scale* (possible scores range from 6 to 30) included five items of the *exploitation factor* and captures mistrust in strangers, egoism, crookedness, and a lack of solidarity in the society. Further, the interpersonal trust scale included one single IPT item capturing hypocrisy. On average, study participants ($n = 399$) reported a mean score of $M = 24.48$ ($SD = 3.67$, range: 13-30) on this scale. Cronbach’s alpha coefficient was 0.58. Whereas the institutional trust scale referred to the macro level, the interpersonal trust scale referred to the meso and micro levels of reconciliation.

The reconciliation questionnaire developed in this study did not include items to capture forgiveness, as, contrarily to reconciliation, forgiveness is described as an intra-individual process (McCullough, Pargament, & Thoresen, 2000), which can be detached from the willingness of an individual to reconcile (Hawk, as cited in Kleiter, 2003). Correspondingly,
Zorbas (2009) observed in her qualitative research in Rwanda, that forgiveness was not evaluated to be integral of reconciliation: Participants were asked to choose the three most important preconditions for reconciliation, which did not include forgiveness. Still, the willingness to forgive promotes a conciliatory relationship with the aggressor and therefore these concepts are clearly linked (Staub et al., 2005). Hence, to examine the evidence of validity based on external variables on the meso and micro levels of reconciliation we also assessed the subscale forgiveness from the Multidimensional Inventory for Religious/Spiritual Well-Being (MI-RSB 48; Unterrainer, Huber, Ladenhauf, Wallner-Liebmann, & Liebmann, 2010). Participants rated the eight forgiveness-items on a six-point scale ranging from 1 (doesn’t apply at all) to 6 (strongly applies). Possible scores of this scale range from 8 to 48. In this study, the average score was $M = 41.12$ ($SD = 8.28$, range: 8-48). The Cronbach’s alpha coefficient was 0.85. The PTSD Symptom Scale-Interview (PSS-I; Foa & Tolin, 2000) was applied in order to assess symptom severity of PTSD. The PSS-I contains a 4-stage response format reaching from 0 (not at all/only one time) to 3 (5 or more times per week/almost always). Possible PSS-I scores range from 0 to 51. On average, the study participants ($n = 398$) reported a PTSD symptom severity score of $M = 4.16$ ($SD = 6.88$, range: 0-38). The Cronbach’s alpha coefficient was 0.92. Emotions towards God were measured using five items of positive emotions towards God (respect, protection, gratitude, hope, release from guilt) and five items of negative emotions towards God (rage, guilt, failure, shame, anxiety) from the Inventory of Emotions towards God (EtG; Huber & Richard, 2010). Respondents rated on a 5-point Likert scale from 1 (never) to 5 (very often) how often they experienced situations in which they had the respective emotions towards God. Possible scores of both subscales range from 5 to 25. The average positive emotions towards God score in the study-sample was $M = 21.91$ ($SD = 3.35$, range: 5-25). The Cronbach’s alpha coefficient was 0.87. With regard to negative emotions towards God, participants average score was $M = 12.51$ ($SD = 5.16$, range: 5-25). The Cronbach’s alpha coefficient was 0.80. To control for socially desired response behavior, we applied the dichotomous lie scale openness from the revised Freiburger Personality Interview (FPI-R; Fahrenberg, Hampel, & Selg, 2001). The FPI-R has a possible score range from 0 to 12. In the sample of this study ($n = 388$), the average-score on the FPI-R was $M = 6.66$ ($SD = 2.79$, range: 0-12). The reliability (Kuder-Richardson formula) of the FPI-R was 0.61. All diagnostic instruments (including the self-rating scales) were administered as clinical interviews.
2.3.4 Data analysis

To develop an instrument for measuring the readiness to reconcile, we applied an explorative factor analysis to the total sample ($N = 400$). As we expected the resulting factors to be correlated, we chose principal axis factor analysis (PAF) with oblique rotation. According to the proposals of Gorsuch (1983) and Tataryn and colleagues (Tataryn, Wood, & Gorsuch, 1999) promax rotation with a kappa value of 4 was applied. To identify the goodness of fit of the extracted factors and the detected items of this factor analysis, we performed a second PAF in the total sample. As the factor structure could be confirmed, we applied confirmatory factor analyses with maximum likelihood estimation to assess the instrument’s measurement and scalar invariance across the community residents and the confessed perpetrators as well as across the groups of persecuted and non-persecuted individuals. Reconciliation scales were computed on the basis of the validated factors. Their reliability was determined by computing Cronbach’s alpha coefficient and performing item analyses. To investigate evidence of validity based on external variables, we conducted correlations between the reconciliation scales and the reconciliation-related scales of institutional trust, interpersonal trust, and forgiveness. Independent Mann-Whitney $U$ tests were applied to analyze between-group differences in attitudes towards reconciliation (confessed perpetrators vs. community, non-persecuted vs. persecuted). Finally, a multiple linear regression analysis was conducted. In this analysis, the following variables were entered as independent variables: Group-belonging (confessed perpetrators vs. community residents), persecution (having not been persecuted vs. having been persecuted), PTSD symptom severity, positive emotions towards God, negative emotions towards God, gender, age, years of school completed, and openness. Readiness to reconcile was entered as dependent variable. All reported statically tests were two-tailed. Version 21 of the IBM SPSS Statistics and IBM SPSS AMOS software were used to analyze the data.

2.4 Results

2.4.1 Development of the Readiness to Reconcile Inventory (RRI)

An exploratory principal axis factor analysis was applied to the 17 reconciliation items in the total sample. The Kaiser-Meyer-Olkin measure of sampling adequacy was good ($KMO = .81$), and Bartlett’s test of sphericity was significant, $\chi^2(136, N = 400) = 1,164.03, p < .001$. According to the results of the Velicer’s Minimum-Average-Partial-Test (MAP)
version 2000 (O’Connor, 2000), we rotated two factors. Rotation sums of squared loadings were 2.95 and 2.04. Two items demonstrating very low loadings on both factors (< .20) were excluded from the following principal axis factor analysis in the total sample \((KMO = .82)\), Bartlett’s test of sphericity: \(\chi^2(136, N = 400) = 1,164.03, p < .001\). Rotation sums of squared loadings were 2.93 and 2.05. Loadings of the extracted factor I ranged from .45 to .77 and loadings of factor II from .29 to .53. All factor loadings of the principal axis factor analysis can be drawn from Table 2.2.

Table 2.2  Rotated factor loadings of the 15 items in the total sample.

<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rwanda has a well-functioning democracy.</td>
<td>.77</td>
</tr>
<tr>
<td>All Rwandans can engage successfully in politics.</td>
<td>.75</td>
</tr>
<tr>
<td>I can express my opinion openly.</td>
<td>.62</td>
</tr>
<tr>
<td>In this country, all humans are treated equally.</td>
<td>.51</td>
</tr>
<tr>
<td>The majority of the Rwandans is proud of their country.</td>
<td>.49</td>
</tr>
<tr>
<td>The crimes of the Rwandans are fairly reappraised.</td>
<td>.48</td>
</tr>
<tr>
<td>Also, Rwandans who don’t know each other can celebrate well together.</td>
<td>.45</td>
</tr>
<tr>
<td>There are only few offenders who regret their acts during the genocide.</td>
<td>-.22</td>
</tr>
<tr>
<td>There are many Rwandans who don’t tell the truth.</td>
<td>.00</td>
</tr>
<tr>
<td>Only few people in this country identify with their Rwandan nationality.</td>
<td>-.01</td>
</tr>
<tr>
<td>In Rwandan marriages group membership plays an important role.</td>
<td>.08</td>
</tr>
<tr>
<td>There are Rwandans who believe that there will be another genocide.</td>
<td>.17</td>
</tr>
<tr>
<td>In Rwandan families people don’t speak openly.</td>
<td>.16</td>
</tr>
<tr>
<td>I am cautious towards Rwandans, whom I don’t know.</td>
<td>-.12</td>
</tr>
<tr>
<td>In the memorials of the genocide not all victims are considered in equal measure.</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note. \(N = 400\). Negative coded items are italicized.

The found two-factor model was tested for invariance across the community residents and the confessed perpetrators as well as across persecuted individuals and non-persecuted individuals. Testing the two-factor baseline model (see Figure 2.1) in the community sample and in the sample of confessed perpetrators, in both groups a large correlated error covariance was found between items 8 and 10. As proposed by Byrne (2004), this correlation was included into the baseline model, which was tested in both independent groups. In community residents and in confessed perpetrators the model fit was acceptable (all model statistics are summarized in Table 2.3). Being tested in both groups simultaneously, the model fit of the configural model and the
model fit of the model with constrained factor loadings were good. Comparing the configural model with the model with constrained factor loadings across both groups, we found a significant chi-square difference value of $\Delta \chi^2 = 28.718$, $\Delta df = 13$, $p = .007$. Following sequences of model tests with increasing factor constraints revealed that factor loadings of item 6 and item 10 were non-invariant across the community residents and the confessed perpetrators. Allowing deviant loadings for item 6 and item 10 in the following model test with equality constraints for factor loadings and intercepts, the model had a good fit, indicating scalar invariance. Thus, given scalar invariance and a set of multiple indicators with only two non-invariant factor loadings, despite partial measurement invariance latent mean comparisons across both groups are possible (Baumgartner & Steenkamp, 1998; Byrne, Shavelson, & Muthén, 1989).

![Diagram of baseline model](image.png)

**Figure 2.1** Baseline model.

Testing the two-factor baseline model in persecuted individuals and in non-persecuted individuals, in both groups large correlated error variances were found between item 2 and item 8 and between item 8 and item 10. These correlations were included as free parameters in the model, which had an acceptable fit in persecuted persons and a good fit in non-persecuted persons. Data provided evidence for a good model fit when testing the configural model for factor
loadings across the two groups simultaneously; and an acceptable model fit, when testing the model with equality constraints for factor loadings across the two groups simultaneously. Comparison of the constrained model with the configural model yielded a chi-square difference value which was not statistically significant and indicates measurement invariance across persecuted and non-persecuted persons, $\Delta \chi^2 = 17.899$, $\Delta df = 13$, $p = .161$. Additionally, the model with constrained intercepts showed an acceptable fit, providing evidence for scalar invariance. Thus, latent mean comparisons across both groups are possible and the two-factor structure is valid in the community sample and in the sample of confessed perpetrators, as well as in persecuted persons and in non-persecuted persons.

<table>
<thead>
<tr>
<th>Model</th>
<th>Group(s)</th>
<th>$\chi^2_{M}$</th>
<th>$df_{M}$</th>
<th>$p$</th>
<th>RMSEA</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline*</td>
<td>Community</td>
<td>166.549</td>
<td>88</td>
<td>.000</td>
<td>.07</td>
<td>.07</td>
</tr>
<tr>
<td>Baseline*</td>
<td>TIG</td>
<td>166.451</td>
<td>88</td>
<td>.000</td>
<td>.07</td>
<td>.07</td>
</tr>
<tr>
<td>Configural</td>
<td>Community, TIG</td>
<td>333.001</td>
<td>176</td>
<td>.000</td>
<td>.05</td>
<td>.07</td>
</tr>
<tr>
<td>Constrained weightsb</td>
<td>Community, TIG</td>
<td>361.719</td>
<td>189</td>
<td>.000</td>
<td>.05</td>
<td>.08</td>
</tr>
<tr>
<td>Constrained interceptsc</td>
<td>Community, TIG</td>
<td>397.878</td>
<td>201</td>
<td>.000</td>
<td>.05</td>
<td>.08</td>
</tr>
<tr>
<td>Baseline*</td>
<td>Persecuted</td>
<td>136.881</td>
<td>87</td>
<td>.001</td>
<td>.07</td>
<td>.08</td>
</tr>
<tr>
<td>Baseline*</td>
<td>Non-pers.</td>
<td>139.792</td>
<td>87</td>
<td>.000</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Configural</td>
<td>Persecuted, non-pers.</td>
<td>276.949</td>
<td>174</td>
<td>.000</td>
<td>.04</td>
<td>.08</td>
</tr>
<tr>
<td>Constrained weightsb</td>
<td>Persecuted, non-pers.</td>
<td>294.848</td>
<td>187</td>
<td>.000</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>Constrained interceptsc</td>
<td>Persecuted, non-pers.</td>
<td>349.720</td>
<td>200</td>
<td>.000</td>
<td>.04</td>
<td>.09</td>
</tr>
</tbody>
</table>

Note. $n_{Community} = 200$. $n_{TIG} = 200$. $n_{Persecuted} = 118$. $n_{Non-persecuted} = 282$.
TIG = confessed genocide perpetrators; Non-pers. = non-persecuted individuals.

* Baseline model with error covariance(s).

b Configural model with constrained factor loadings.

c Configural model with constrained factor loadings and constrained intercepts.

The newly developed instrument was labeled Readiness to Reconcile Inventory (RRI). Factor I contains five items of institutional trust and two items of bounded national identity (thus reconciliation items at the macro and meso levels) and was labeled equity and equality. Factor II contains four items of interpersonal trust, two items of institutional trust, one item of perspective taking, and one item of bounded national identity (thus items at the macro, meso, and micro levels) and was labeled trust and cohesion. By adding the items of the respective factors, we constructed the equity and equality scale (possible scores range from 0 to 28) and the trust and cohesion scale (possible scores range from 0 to 32). In the total study sample, the average score on the equity and equality scale was $M = 19.76$
(SD = 5.39, range = 1-28) and the Cronbach’s alpha coefficient was 0.78. The average score of the trust and cohesion scale was M = 13.92 (SD = 5.46, range = 0-27). The Cronbach’s alpha coefficient was 0.64. By adding all 15 reconciliation items the total reconciliation scale was generated, which has a possible score range from 0 to 60. The average score in the study-sample was M = 33.68 (SD = 8.96, range = 3-52), and Cronbach’s alpha coefficient was 0.77. Item analyses were conducted in order to examine the statistical reliability of the RRI. The results of these analyses are presented in Table 2.4.

<table>
<thead>
<tr>
<th>Item</th>
<th>M(SD)</th>
<th>r_it</th>
<th>α if deleted</th>
<th>r_it</th>
<th>α if deleted</th>
<th>r_it</th>
<th>α if deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.00</td>
<td>.60</td>
<td>.73</td>
<td>.67</td>
<td>.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.85</td>
<td>.41</td>
<td>.75</td>
<td>.55</td>
<td>.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.14</td>
<td>.51</td>
<td>.74</td>
<td>.57</td>
<td>.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2.47</td>
<td>.48</td>
<td>.74</td>
<td>.51</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3.08</td>
<td>.44</td>
<td>.75</td>
<td>.48</td>
<td>.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2.89</td>
<td>.38</td>
<td>.75</td>
<td>.44</td>
<td>.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>3.34</td>
<td>.22</td>
<td>.76</td>
<td>.31</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1.73</td>
<td>.19</td>
<td>.77</td>
<td></td>
<td></td>
<td>.31</td>
<td>.61</td>
</tr>
<tr>
<td>9</td>
<td>1.09</td>
<td>.37</td>
<td>.75</td>
<td></td>
<td>.40</td>
<td>.31</td>
<td>.61</td>
</tr>
<tr>
<td>10</td>
<td>1.77</td>
<td>.31</td>
<td>.76</td>
<td></td>
<td>.34</td>
<td>.31</td>
<td>.61</td>
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<tr>
<td>11</td>
<td>2.11</td>
<td>.36</td>
<td>.75</td>
<td></td>
<td>.39</td>
<td>.31</td>
<td>.61</td>
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<tr>
<td>12</td>
<td>2.96</td>
<td>.42</td>
<td>.75</td>
<td></td>
<td>.37</td>
<td>.31</td>
<td>.61</td>
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<tr>
<td>13</td>
<td>1.19</td>
<td>.37</td>
<td>.75</td>
<td></td>
<td>.32</td>
<td>.31</td>
<td>.61</td>
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<tr>
<td>14</td>
<td>0.99</td>
<td>.14</td>
<td>.77</td>
<td></td>
<td>.20</td>
<td>.31</td>
<td>.61</td>
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<tr>
<td>15</td>
<td>2.09</td>
<td>.34</td>
<td>.76</td>
<td></td>
<td>.20</td>
<td>.31</td>
<td>.61</td>
</tr>
</tbody>
</table>

Note. N = 400.

Three items of the total reconciliation scale and one item of the trust and cohesion scale were found to have a low item-total-correlation (r_it < .30). The deletion of one of these items would not have changed or even reduced the Cronbach’s alpha coefficient of the reconciliation scale or of the subscales. Therefore, it was decided to keep all items in the questionnaire.

Before examining correlations between the RRI and external variables, item analyses were
conducted for the two trust scales, as these scales had low reliabilities (Cronbach’s $\alpha < .60$; see section 2.3.3). By removing one item (“The judiciary is a place where we can all get unbiased treatment.”) with a negative item-total-correlation ($r_{it} = -.07$) from the institutional trust scale, the internal consistency could be improved. The possible score range of the modified institutional trust scale was 4-20. In the study-sample, the average score on the scale was $M = 15.59$ ($SD = 3.13$, range: 7-20). Cronbach’s alpha coefficient was 0.73. As the removed item captures the important aspect of independent judiciary, it was included as single item into the correlation analyses. Possible scores on this item range from 1 to 5. In the study-sample the average score was $M = 2.04$ ($SD = 1.25$, range: 1-5).

With regard to the interpersonal trust scale, three items had low item-total-correlations ($r_{it} < .30$). However, as removing these items would have reduced the internal consistency of the scale, all items were kept. As can be drawn from Table 2.5, the reconciliation scale and the trust and cohesion scale correlated significantly with all external variables. No significant correlation was found between the equity and equality scale and the interpersonal trust scale.

### Table 2.5 Correlations of the reconciliation scales with external variables.

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reconciliation scale</td>
<td>.82**</td>
<td>.83**</td>
<td>-.26**</td>
<td>-.36**</td>
<td>-.31**</td>
<td>.35**</td>
</tr>
<tr>
<td>2. Equity and equality scale</td>
<td>.36**</td>
<td>-.11*</td>
<td>-.45**</td>
<td>-.06</td>
<td>.13**</td>
<td></td>
</tr>
<tr>
<td>3. Trust and cohesion scale</td>
<td>-.32**</td>
<td>-.15**</td>
<td>-.45**</td>
<td>.44**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Institutional trust scale$^a$</td>
<td></td>
<td>-.07</td>
<td>.59**</td>
<td>-.26**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Independent judiciary$^b$</td>
<td></td>
<td></td>
<td>-.11*</td>
<td>-.20**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Interpersonal trust scale$^c$</td>
<td></td>
<td></td>
<td></td>
<td>-.29**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$n = 399$

*Note. $N = 400$ if not specified otherwise. $^a$High scores indicate institutional mistrust. $^b$High scores indicate belief in a non-independent judiciary. $^c$High scores indicate interpersonal mistrust. $^p < .05$, $^{**}p < .01$.*

#### 2.4.2 Group differences in the readiness to reconcile

Compared to community residents, the confessed perpetrators had higher scores on the total reconciliation scale ($Md_n = 37$ vs. $Md_n = 33$), $U = 17,330.00$, $p < .021$, $\Phi = -.12$; and higher scores on the trust and cohesion scale ($Md_n = 16$ vs. $Md_n = 13$), $U = 37,430.00$, $p < .001$, $\Phi = \ldots$
.25. On the equity and equality scale, confessed genocide perpetrators had lower scores than community residents (Md = 20 vs. Md = 22); U = 17,660.50, p < .043, Φ = -.10. Across the total sample, non-persecuted individuals (compared to persecuted individuals), had higher scores on the trust and cohesion scale (Md = 16 vs. Md = 13), U = 13,206.00, p < .001, Φ = -.16; and lower scores on the equity and equality scale (Md = 21 vs. Md = 22), U = 13,656.00, p < .005, Φ = -.14.

2.4.3 Predictors of the readiness to reconcile

The results of the multiple linear regression analysis can be drawn from Table 2.6. Respondents with the highest levels of readiness to reconcile were confessed perpetrators (compared to the community residents), persecuted persons (compared to non-persecuted persons), those who had a lower PTSD symptom severity, and those, who had higher levels of positive emotions towards God and lower levels of negative emotions towards God, respectively. The explained variance of the model was $R^2 = .23$.

<table>
<thead>
<tr>
<th></th>
<th>b</th>
<th>b SE</th>
<th>β</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groupa</td>
<td>1.98</td>
<td>1.09</td>
<td>.11</td>
<td>.072</td>
<td>[.18, 4.13]</td>
</tr>
<tr>
<td>Persecutionb</td>
<td>3.63</td>
<td>1.18</td>
<td>.19</td>
<td>.002</td>
<td>[1.32, 5.94]</td>
</tr>
<tr>
<td>PTSD symptom severity</td>
<td>-.31</td>
<td>.07</td>
<td>-.24</td>
<td>.000</td>
<td>[-.44, -.18]</td>
</tr>
<tr>
<td>Positive emotions towards God</td>
<td>.45</td>
<td>.13</td>
<td>.17</td>
<td>.000</td>
<td>[.20, .69]</td>
</tr>
<tr>
<td>Negative emotions towards God</td>
<td>-.22</td>
<td>.09</td>
<td>-.13</td>
<td>.010</td>
<td>[-.39, -.05]</td>
</tr>
<tr>
<td>Genderc</td>
<td>1.43</td>
<td>.87</td>
<td>.08</td>
<td>.100</td>
<td>[-.28, 3.14]</td>
</tr>
<tr>
<td>Age</td>
<td>-.03</td>
<td>.04</td>
<td>-.04</td>
<td>.401</td>
<td>[-.11, .05]</td>
</tr>
<tr>
<td>Education (years of school completed)</td>
<td>-.43</td>
<td>.12</td>
<td>-.18</td>
<td>.000</td>
<td>[-.67, -.19]</td>
</tr>
<tr>
<td>Openness</td>
<td>-.57</td>
<td>.16</td>
<td>-.18</td>
<td>.001</td>
<td>[-.88, -.25]</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = 387. CI = confidence interval. TIG = sample of confessed perpetrators. PTSD = posttraumatic stress disorder. a: Community coded as 0, confessed perpetrators coded as 1. b: Non-persecuted individuals coded as 0, persecuted individuals coded as 1. c: female coded as 0, male coded as 1.
2.5 Discussion

The first purpose of the present study was to construct and to apply a questionnaire called the Readiness to Reconcile Inventory (RRI), which captures the readiness to reconcile on the macro, meso, and micro levels and is validated in different Rwandan societal groups. By applying principal axis factor analysis to the total sample, the items of the RRI loaded on two distinct factors, which were labeled the equity and equality factor and the trust and cohesion factor. Partial measurement invariance of this two-factor model was found across community residents and confessed perpetrators. An invariant measurement structure was found across persecuted individuals and non-persecuted individuals. In both group comparisons, scalar invariance was given. Consequently, the RRI is a valid instrument for measuring reconciliation in these societal groups.

The reconciliation scale correlated moderately but highly significant with all reconciliation-related scales, which referred either to the macro level (institutional trust scale) or to the meso and micro levels (interpersonal trust scale and forgiveness scale) of reconciliation. Further, the reconciliation scale correlated significantly with the single item of independent judiciary, which refers to the macro level of reconciliation. Significant correlations were also found between the trust and cohesion scale and the three reconciliation-related scales as well as with the single item independent judiciary. The correlations between the equity and equality scale and the institutional trust scale, the forgiveness scale, and the single item of independent judiciary were significant, too. However, no correlation was found between the equity and equality scale and the interpersonal trust scale. These results can be explained by the item composition of the RRI scales. The reconciliation scale and the trust and cohesion scale capture the readiness to reconcile at the macro, meso, and micro levels. In contrast, the equity and equality scale particularly captures the readiness to reconcile at the macro level. This fits with the finding, that the equity and equality scale does not correlate with the interpersonal trust scale. Consequently, the correlations found suggest an external validity of the RRI and its subscales.

The results of the multiple regression analysis confirm the outlined hypotheses that group membership, PTSD symptom severity, and the quality of emotions towards God are associated with the readiness to reconcile. With regard to group membership, being a confessed perpetrator (opposed to being a community resident) and having been persecuted during the genocide (opposed to not having been persecuted) was associated with a higher readiness to reconcile. The results of the group comparisons help to understand these outcomes. Confessed perpetrators (compared to community residents) and non-persecuted
individuals (compared to persecuted individuals) had lower scores on the equity and equality scale, which particularly refers to the macro level of reconciliation. This could be explained by feelings of injustice, elicited by sociopolitical measures which are at disadvantage for persons, who were not persecuted during the genocide. As outlined in the introduction respective sociopolitical measures include the contempt of democratic principles by the Rwandan government, a biased justice, and a unilateral memory culture (see section 2.2).

As non-persecuted persons, and thus Hutus, still constitute the vast majority of Rwanda’s population, feelings of injustice in this societal group hold the risk of fragmenting the population and thus - in the long run - of aligning the country’s trajectory towards new bouts of violence (Reyntjens, 2004). In order to avoid this and in order to foster reconciliation, equity and equality should be guaranteed to all Rwandans. A first step into this direction could be the abolition of the imposed denial of ethnic classification. In this way, confessed perpetrators and in general individuals who were not persecuted during the genocide could openly express their concerns. This would facilitate a societal exchange about the origins of and the coming to terms with the Rwandan genocide. Such a societal dialogue can foster understanding and reconciliation - a process, which by definition takes place between two former opponents and is a premise for the development of a common history and a shared future vision (Kohen, Zanchelli, & Drake 2011; Staub, 2006).

Respective societal dialogue is also appropriate to strengthen trust and cohesion in the Rwandan society. The group-comparisons show, that community residents (compared to confessed perpetrators) and individuals, who were persecuted during the genocide (compared to individuals who were not persecuted) have lower scores on the trust and cohesion scale. This is understandable, as many of them, and especially those who were persecuted during the genocide, still have to cope with severe personal losses caused by the Rwandan genocide. These losses frequently include the death of family members, the loss of property, and in many cases also the loss of proper mental health through the traumatizing events of 1994. These circumstances render societal reconciliation a great emotional challenge for survivors. Corresponding, study-findings revealed a negative association between readiness to reconcile and PTSD symptom severity. This is in line with previous research (Pham et al., 2004; Schaal et al., 2012), which provided evidence that higher PTSD symptom severity is associated with lower levels of readiness to reconcile. According to this finding, healing from trauma is a prerequisite to promote reconciliation in Rwanda. Against the backdrop of highly elevated prevalence rates of PTSD in Rwanda (Pham et al., 2004; Schaal et al., 2012), it is such
important to improve the access to diagnosis and treatment of PTSD in the post-genocide state. Evidence-based interventions for the treatment of trauma in Rwanda exist (Schaal, Elbert, & Neuner, 2009; Staub et al., 2005) and can serve as a basis for corresponding measures.

Rwanda is a highly religious country. Corresponding, 78% of all study participants indicated that religion was very important to them. With regard to the association between religion and reconciliation, the study-results confirm that negative emotions towards God restrain the readiness to reconcile, whereas positive emotions towards God have the opposite effect. After the genocide, many Rwandans might have developed negative emotions towards God. Feelings may range from anger on behalf of the victims to guilt on behalf of the perpetrators. Given the high relevance of religious belief in Rwanda, understanding these negative emotions towards God and helping the individuals concerned to redevelop positive emotions towards God might foster the readiness to reconcile. For example, emotions towards God and the readiness to reconcile could be addressed in the context of therapy or church attendance.

2.5.1 Limitations

This study has several limitations. All collected data are based on self-reporting. The cross-sectional data do not allow for the determination of causality, and most instruments used were developed in Western cultures. Furthermore, the sample was drawn from the capital Kigali, though about 71% of Rwanda’s population lives in rural areas (Central Intelligence Agency, 2017). However, participants in the present study were recruited from both urban and rural areas of Kigali. Finally, socially desirable response behavior can never be completely ruled out, especially when questioning sensitive issues such as reconciliation in Rwanda. Yet, research took place in an explicit research context and a lie scale was applied in order to control social desirability.

2.5.2 Conclusion

In this study, we developed a reconciliation instrument which displays a stable factor structure, is validated in different societal groups in Rwanda, has a reasonable length, a satisfying reliability, and captures reconciliation on the macro, meso, and micro levels. The structure of the questionnaire shows that equity and equality and trust and cohesion are crucial components of reconciliation in Rwanda. Further, results provide empirical evidence that the readiness to reconcile in Rwanda differs between confessed perpetrators
and community residents; and between persons, who were persecuted during the genocide and persons, who were not persecuted during the genocide. Additionally, it was found that PTSD symptom severity and the quality of emotions towards God are associated with the readiness to reconcile. The study findings suggest, that political openness and democratization on the macro (institutional) level, acknowledgment of ethnic identities, and recognition of the concerns and needs of all societal groups on the meso (group) level, as well as improvements in trauma treatment and the consideration of religious belief on the micro (individual) level can contribute to reconciliation in Rwanda. Research avenues emerging from this study include the further investigation of group differences in the readiness to reconcile, the further investigation of correlates of the readiness to reconcile, and the application and the validation of the RRI in a rural sample in Rwanda, as well as the RRI’s application and validation in other post-genocide countries.
Study II. Rates and predictors of mental stress in Rwanda: Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model

3.1 Abstract

Background. As a consequence of the 1994 Rwandan genocide, prevalences of mental disorders are elevated in Rwanda. More knowledge about determinants of mental stress can help to improve mental health services and treatment in the east-central African country. The present study aimed to investigate actual rates of mental stress (posttraumatic stress disorder, syndromal depression, syndromal anxiety) in Rwanda and to examine if gender, persecution during the genocide, readiness to reconcile, importance given to religiosity, and quality of religiosity are associated with mental stress.

Method. The study comprised a community sample of $N = 200$ Rwandans from Rwanda’s capital Kigali, who experienced the Rwandan genocide. By conducting structured interviews, ten local Master level psychologists examined socio-demographic characteristics, types of potentially lifetime traumatic events, symptoms of posttraumatic stress disorder (PTSD), symptoms of depression, symptoms of anxiety, readiness to reconcile, and religiosity. Applying non-recursive structural equation modeling (SEM), the associations between gender, persecution, readiness to reconcile, religiosity, and mental stress were investigated.

Results. Respondents had experienced an average number of 11.38 types of potentially lifetime traumatic events. Of the total sample, 11% met diagnostic criteria for PTSD, 19% presented with syndromal depression, and 23% presented with syndromal anxiety. Female gender, persecution during the genocide, and readiness to reconcile were significant predictors of mental stress. A twofold association was found between the centrality of religion (which determines the importance given to religiosity) and mental stress: Higher levels of mental stress were associated with higher centrality and a higher centrality was associated with lower levels of mental stress. The variables positive and negative religious functioning (which determine the quality of religiosity) had an indirect negative and positive effect on mental stress, respectively.
Conclusions. Study results provide evidence that rates of mental stress are still elevated in Rwanda and that female gender, persecution during the genocide, readiness to reconcile, centrality, and religious functioning are predictors of mental stress. Seventeen years after the genocide, there remains a large gap between the need for and the provision of mental health services in Rwanda. Results underline the importance of improving the respective infrastructure, with a focus on the requirements of women and persons, who were persecuted during the genocide. They further highlight that the consideration of readiness to reconcile, centrality, and religious functioning in therapeutic interventions can support mental health in Rwanda.

3.2 Introduction

In the 1994 Rwandan genocide in one hundred days about 800,000 Tutsis and moderate Hutus were killed and the emotional integrity of millions of Rwandans was destroyed. The perpetrators were not only paid soldiers, but to a great extent ordinary citizens. About 25% of the complete Hutu population, including women and children, joined in the killing (Scherrer, 1997). As a consequence of the genocide, prevalence rates of mental disorders are elevated in Rwanda. In community samples rates of PTSD range from 25% (Pham, Weinstein, & Longman, 2004) to 46% (Schaal, Weierstall, Dusingizemungu, & Elbert, 2012). Prevalence rates of depression range from 15% (Bolton, Neugebauer, & Ndogoni, 2002) to 46% (Schaal et al., 2012), and the prevalence of anxiety symptoms adds up to 59% (Schaal et al., 2012). Across all mentioned studies, women were found to be more affected by mental disorders than men. Pham et al. (2004) revealed that persons who identified themselves as Tutsis - and such belonged to the ethnic group that was mainly persecuted during the genocide - had a higher probability of fulfilling symptom criteria for PTSD (compared to persons, who identified themselves as Hutus).

Seventeen years after the genocide, the first objective of this study was to investigate actual rates of PTSD, syndromal depression, and syndromal anxiety in a Rwandan community sample. The second goal was to investigate correlates and thus potential predictors of mental stress (operationalized as anxiety, depression, and PTSD symptom severity). Based on the results of the above-mentioned studies we expected female gender and persecution during the genocide to be directly associated with mental stress. As Rwanda is marked by post-conflict conditions and a high religiosity, we further investigated readiness to reconcile and religiosity as correlates of mental stress.
Against the background of the severe interpersonal violations during the genocide, reconciliation remains a great challenge in Rwanda. Defined as an interpersonal and reciprocal process (Bockers, Stammel, & Knaevelsrud, 2011; Enright, Freedman, & Rique, 1998) that guides the formerly hostile partners to mutual acceptance (Staub, Pearlman, Gubin, & Hagengimana, 2005), reconciliation can be impeded by the traumatization of one of the parties. Research in Rwanda has demonstrated that PTSD symptom severity (Heim & Schaal, 2015; Pham et al., 2004; Schaal et al., 2012), depression (Schaal et al., 2012), and anxiety as part of poor mental health (Mukashema & Mullet, 2010) are negatively correlated with reconciliation. Corresponding it was expected, that higher levels of readiness to reconcile were associated with lower levels of mental stress.

In stressful periods of life people tend to refer to religion (Pargament, 1997), which offers explanation for human suffering and meaning for loss (Boehnlein, 2007). Despite the involvement of the Church in the genocide (Longman, 2001), 96% of the Rwandans are belonging to a Christian church (Sousa, 2017) and religion plays an essential role in the Rwandan daily life. In order to investigate the relation between religiosity and mental stress, the importance given to religiosity was differentiated from the quality of religiosity. The importance given to religiosity refers to the extent of an individual’s religious practice (e.g. church attendance) and to the extent of an individual’s religious ideology, religious experience, and religious interest. With reference to Huber (2004) the importance given to religiosity was labeled centrality, reflecting the centrality of an individual’s religious construct system in daily life. Research in Rwanda provided evidence, that importance given to religious/spiritual belief is protective for the development of prolonged grief reactions in genocide survivors (Schaal, Jacob, Dusingizemungu, & Elbert, 2010). It was further found, that members of healing groups with a religious focus presented with fewer trauma symptoms than those of secular healing groups (Staub et al., 2005). It was therefore expected, that a higher centrality was associated with lower levels of mental stress. As people tend to intensify their religious praxis when confronted with problems (Boehnlein, 2007; Pargament, 1997), it was supposed at the same time, that higher mental stress was associated with a higher centrality of religion.

The quality of religiosity refers to the content of religious belief, which can be either positive or negative. Corresponding, positive religious functioning has been distinguished from negative religious functioning in this study. Positive religious functioning describes a constructive use of religion in order to resolve problems and contains positive religious
emotions as for example protection and hope. Negative religious functioning means a dysfunctional use of religion in dealing with problems, paired with negative religious feelings like guilt or shame. A meta-analytic review (Ano & Vasconcelles, 2005) revealed, that positive religious coping is associated with better psychological adjustment and that negative religious coping is associated with less psychological adjustment. Corresponding, negative emotions towards God were found to be positively correlated with mental health (Murken, 1998). Accordingly, positive religious functioning was expected to be associated with lower levels of mental stress and negative religious functioning was expected to be associated with higher levels of mental stress. In addition, religious functioning was supposed to exert an indirect influence on mental stress. The association between religious coping and psychological adjustment was found to be stronger in more religious persons (Pargament, Tarakeshwar, Ellison, & Wulff, 2001). Corresponding it was hypothesized, that the association between religious functioning and mental stress was partly mediated by centrality. Lawler-Row (2010) reported that the relationship between religious coping and depression was partly mediated by self-forgiveness and other-forgiveness. As the concept of reconciliation is closely linked to forgiveness (Philpott, 2010) and as forgiveness is an integral part of Christianity it was further expected, that the relationship between religious functioning and mental stress was partly mediated by readiness to reconcile.

3.3 Method

3.3.1 Study design and procedure

The study was conducted in January and February of 2011 in Kigali, Rwanda. It was approved by the University of Konstanz Ethical Review Board and the Rwandan Ministry of Science and Technology. All instruments, which had not yet been translated as part of previous studies (Schaal & Elbert, 2006; Schaal et al. 2010; Schaal et al. 2012), were translated into Kinyarwanda and back by two independent Rwandans.

A total of 200 persons were interviewed in this study. Eligible participants were residents of five randomly selected quarters of Rwanda’s capital Kigali (Muhima, Ndera, Nyamirambo, Kimisigara, Remera). Interviewees were at least 30 years old at the time of the interview and had stayed in Rwanda during the 1994 genocide. Data were collected using a house-to-house survey. Interviewers started at a convenient point in the respective quarter and approached each subsequent house until the required number of interviews was achieved. Houses were re-
approached at a later time if nobody was encountered or available upon the first try. Interviews were carried out individually in a private room in the house. If more than one of the dwellers fulfilled inclusion criteria, one participant was randomly chosen. Prior to the interview, all subjects were fully informed about the study’s aim and procedure as well as about voluntary participation. Participants signed a respective written informed consent and were rewarded with 1,000 Rwandan Francs (about 1.20 Euro) at the end of the interview. A team of ten local Master level psychologists carried out the interviews. Each of them conducted 20 interviews and was regularly supervised during the period of data collection. Before data collection, the interviewers had been introduced to the aims and the procedure of this study in an intensive one-day training session. All interviewers had already received extensive training in conducting structured diagnostic interviews and had already conducted interviews as part of previous studies in Rwanda. The interviews lasted about two hours. Six subjects who were approached refused to participate in the trial.

3.3.2 Measures

Socio-demographic data collected included age, gender, marital status, education, and religious affiliation. As it is prohibited to directly name ethnic classifications in Rwanda, it was additionally asked if a respondent belonged to the group of persons that had been persecuted during the genocide (Tutsis and moderate Hutus) or to the group that had not been persecuted (Hutus). The modified Event Scale (Schaal & Elbert, 2006; Schaal et al., 2012) was used to assess exposure to types of potentially lifetime traumatic events. This instrument includes 26 items and has a dichotomous response format. PTSD diagnostic status and symptom severity were assessed with the PTSD Symptom Scale-Interview (PSS-I; Foa & Tolin, 2000). The PTSD Symptom Scale-Interview contains a four-stage response format ranging from 0 (not at all/only once) to 3 (five or more times per week/almost always); possible scores of the PSS-I range from 0-51. On average, participants of this study ($n = 199$) reported a PTSD symptom severity score of $M = 5.66$ ($SD = 7.79$, range: 0-38). Cronbach’s alpha coefficient was 0.93. Symptoms of depression and symptoms of anxiety were determined using the Hopkins Symptom Checklist-25 (HSCL-25; Degoratis, Lipman, Rickels, Uhlenhut, & Covi, 1974). Participants rated 15 depression items and ten anxiety items on a four-point scale ranging from 1 (not at all bothered) to 4 (extremely bothered). Possible scores for depression range from 15 to 60. For anxiety, possible scores range from 10 to 40. With regard to depression, study participants ($n = 197$) had an average score of $M =$
21.32 ($SD = 7.66$, range: 15-46). Cronbach’s alpha coefficient was 0.90. The average score of anxiety was $M = 15.07$ ($n = 198$, $SD = 6.44$, range: 10-40). Cronbach’s alpha coefficient was 0.92. Referring to Mollica and colleagues (Mollica, Wyshak, de Marneffe, Khuon, & Lavelle, 1987), a mean score of 1.75 was defined as the cut-off point for syndromal depression and syndromal anxiety.

The 15-item Readiness to Reconcile Inventory (RRI; Heim & Schaal, 2015) was used to measure reconciliation. Items of the RRI are answered on a five-point scale ranging from 0 (totally disagree) to 4 (totally agree) and capture reconciliation on the macro level (political/institutional; e.g. “In this country, all humans are treated equally.”), the meso level (group; e.g. “In Rwandan marriages, group membership plays an important role.”), and the micro level (individual; e.g. “I am careful towards Rwandans who I don’t know.”). Possible scores of the RRI range from 0 to 60. In the study sample, the average RRI-score was $M = 32.40$ ($SD = 10.28$, range: 3-52). Cronbach’s alpha coefficient was 0.81.

To measure centrality, we applied the ten-item version of the Centrality of Religiosity Scale (CRS; Huber, 2004). The CRS captures centrality on five dimensions (ideology, experience, private practice, public practice, intellect) and items are answered on a five-point scale with a range from 1 to 5 (higher scores indicate higher centrality; possible scores range from 10 to 50). Depending on their total sum score, respondents can be divided into non-religious (sum score ≤ 20), religious (21 ≤ sum score ≤ 39), or highly religious (sum score ≥ 40) (Huber, 2004; Huber, 2008). The study participants mean CRS-score was $M = 40.87$ ($SD = 7.88$, range: 13-50). Cronbach’s alpha coefficient was 0.90.

The 14 items Brief Religious Coping Scale (Brief RCOPE; Pargament, Smith, Koenig, & Perez, 1998) was used to capture different ways of religious coping. Respondents rate on a four-point scale ranging from 0 (not at all) to 3 (to a great deal), the extent to which they apply the respective way of religious coping. The positive religious coping score (possible scores range from 0 to 21) is the sum of seven items that assess positive means of religious coping (e.g. “Sought help from God in letting go of my anger.”). In the study sample ($n = 196$), the average positive religious coping score was $M = 15.84$ ($SD = 4.59$, range: 0-21). Cronbach’s alpha coefficient was 0.85. The negative religious coping score (possible scores range from 0 to 21), is the sum of seven items that assess negative means of religious coping (e.g. “Wondered whether God had abandoned me.”). Study participants ($n = 199$) had an average negative religious coping score of $M = 8.13$ ($SD = 5.74$, range: 0-21). Cronbach’s alpha coefficient was 0.82.
Emotions towards God were measured with ten items of the Inventory of Emotions towards God (EtG; Huber & Richard, 2010). Five items captured positive emotions towards God (reverence, protection, gratitude, hope, release from guilt) and five items captured negative emotions towards God (rage, guilt, failure, shame, anxiety). Respondents were asked the following question: “How often do you experience situations in which you feel the following emotions towards God?” and rated the items on a five-point scale ranging from 1 (never) to 5 (very often). By adding up the positive and the negative items, a positive emotions towards God score and a negative emotions towards God score were respectively obtained. Both possible sum scores range from 5-25. With regard to positive emotions towards God, study participants had an average score of $M = 21.54$ ($SD = 3.61$, range: 5-25). Cronbach’s alpha coefficient was 0.88. The average negative emotions towards God score was $M = 12.49$ ($SD = 5.27$, range: 5-25). Cronbach’s alpha coefficient was 0.81. To control for socially desirable response behavior, the dichotomous lie scale openness from the revised Freiburger Personality Inventory was applied (FPI-R; Fahrenberg, Hampel, & Selg, 2001) The FPI-R has a possible score range from 0 to 12. In this study, participants ($n = 192$) had a FPI-R mean score of $M = 6.85$ ($SD = 2.85$; range: 0-12). The reliability (Kuder-Richardson formula) was 0.76. All diagnostic instruments were administered as clinical interviews.

### 3.3.3 Data analysis

Data were analyzed with version 20 of the IBM SPSS Statistics and the IBM SPSS AMOS software. The descriptive data are expressed as frequencies (%), mean scores, and standard deviations. Chi-square test and $t$-tests were used to investigate group differences. All reported statistical tests were two-tailed. Non-recursive structural equation modeling with maximum likelihood ($ML$) was applied to analyze the relationships between the exogenous variables (gender, persecution, positive religious functioning, and negative religious functioning plus the control variables age, education, socially desirable response behavior, gender, and persecution) and the endogenous variables of readiness to reconcile, centrality of religion, and mental stress. The measurement model of positive religious functioning included positive religious coping and positive emotions towards God. The measurement model of negative religious functioning included negative religious coping and negative emotions towards God. Anxiety, depression, and PTSD symptom severity constituted the reflective indicator variables for mental stress. The lie scale openness functioned as a reflective single indicator for the latent control variable of social desirability. In order to obtain an economic model, we
trimmed the initial structural equation model (see Figure 3.1) by deleting paths with non-significant regression weights (\( p > .10 \)) between exogenous and endogenous variables in a stepwise manner. Coefficients and significances of indirect effects of the final structural equation model (see Figure 3.2) were examined by applying bootstrapping. For bootstrapping we imputed the data set via regression imputation.

![Figure 3.1](image)

**Figure 3.1**  Initial structural equation model.
Gender, persecution, and control variables are summarized in one square.

### 3.4 Results

#### 3.4.1 Demographic characteristics

The sample consisted of 112 women (56%) and 88 men (44%) with an average age of 43.50 years (SD = 10.67, range: 35-94 years). Of the total sample, 113 (56%) respondents indicated that they belonged to the group that had been persecuted during the genocide; 87 individuals (44%) indicated that they belonged to the group that had not been persecuted during the genocide. In the group of persecuted persons, 77 individuals (68%) were female and 36 individuals (32%) were male. In the group of non-persecuted persons, 35 individuals (40%) were female and 52 persons (60%) were male. The gender difference between both groups was significant, \( \chi^2(1, N = 200) = 15.54, p < .001 \). With regard to education, 96 persons (48%) had no school degree. Of the other participants, 83 persons (42%) had completed primary school, ten persons (5%) had completed secondary school, and seven persons (3%) had completed an apprenticeship. Four persons (2%) obtained a university degree. The average years of school attended was 5.12 years (SD = 4.11, range: 0-18 years). Participants were Catholic (\( n = 91, \))
Study II. Rates and predictors of mental stress in Rwanda: Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model

46%), Protestant (n = 49, 24%), Adventist (n = 24, 12%), Muslim (n = 18, 9%), belonged to another faith community (n = 15, 8%), or indicated that they did not practice any religion (n = 3, 1%). According to the centrality scale (see section 3.3.2), 127 participants (63%) of the total sample were highly religious. Sixty-eight participants (34%) were religious, and five participants (3%) were non-religious.

3.4.2 Trauma exposure and rates of mental stress

Participants (n = 197) were exposed to an average of 11.38 (SD = 4.53, range: 1-22) types of potentially lifetime traumatic events. Women had experienced significantly more types of potentially lifetime traumatic events than men (M = 12.13, SD = 4.55 vs. M = 10.44, SD = 4.33), t(195) = 2.64, p = .009. Persons, who had been persecuted during the genocide had experienced significantly more potentially lifetime traumatic events compared to persons, who had not been persecuted (M = 13.17, SD = 3.99 vs. M = 9.07, SD = 4.13), t(195) = -7.05, p < .001. Of the total sample, 22 persons (11%) met diagnostic criteria for PTSD, 37 individuals (19%) met clinically significant rates of depression, and 46 persons (23%) presented with syndromal anxiety. Diagnostic criteria for all three conditions (PTSD, syndromal depression, and syndromal anxiety) were met by 16 participants (8%).

3.4.3 Structural equation model

Correlations between all manifest variables of the initial structural equation model can be drawn from Table 3.1. The final structural equation model fitted the data, χ² = 41.34, df = 43, p = .544; CMIN/DF = .96; RMSEA = .00; PCLOSE = .97. The stability index of the final structural equation model was 0.06 for the endogenous variables of centrality and mental stress. The proportions of variance explained were R² = .34 for mental stress, R² = .68 for centrality, and R² = .38 for readiness to reconcile. Female gender, persecution, and readiness to reconcile were significant predictors of mental stress. Mental stress had a significant positive effect on centrality and centrality had a significant negative effect on mental stress. Positive religious functioning had a direct positive effect on centrality and on readiness to reconcile, and an indirect negative effect on mental stress, β = -.19, p = .003. Negative religious functioning had a direct negative effect on readiness to reconcile and an indirect positive effect on mental stress, β = 11, p = .002. Coefficients of the final structural equation model are presented in Table 3.2.
Table 3.1  Correlations of the manifest variables of the structural equation model (SEM).

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<td>Pos. religious coping</td>
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<td>-0.13</td>
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<td>Persecution</td>
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<td>0.01</td>
<td>-0.28**</td>
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<tr>
<td>Anxiety</td>
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<td>0.04</td>
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<td>0.15*</td>
<td>-0.34**</td>
<td>0.22**</td>
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<tr>
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<td>0.27**</td>
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<tr>
<td>PTSD</td>
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<td>0.16*</td>
<td>0.18*</td>
<td>-0.32**</td>
<td>0.26**</td>
<td>0.68**</td>
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<tr>
<td>Centrality</td>
<td>0.58**</td>
<td>0.61**</td>
<td>0.11</td>
<td>-0.03</td>
<td>-0.20**</td>
<td>0.26**</td>
<td>0.06</td>
<td>0.08</td>
<td>0.13</td>
<td>1</td>
<td></td>
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<tr>
<td>Readiness to reconcile</td>
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<td>0.01</td>
<td>-0.41**</td>
<td>-0.38**</td>
<td>0.11</td>
<td>0.05</td>
<td>-0.23**</td>
<td>-0.29**</td>
<td>-0.29**</td>
<td>0.01</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Openness</td>
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<td>0.07</td>
<td>0.46**</td>
<td>0.42**</td>
<td>-0.01</td>
<td>0.03</td>
<td>0.27**</td>
<td>0.27**</td>
<td>0.28**</td>
<td>-0.07</td>
<td>-0.34**</td>
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<td>Education</td>
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<td>0.05</td>
<td>-0.10</td>
<td>0.13</td>
<td>0.05</td>
<td>0.03</td>
<td>0.06</td>
<td>0.21**</td>
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<td>-0.23**</td>
<td>0.03</td>
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<td>-0.13</td>
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<td>0.12</td>
<td>-0.32**</td>
<td>-0.20**</td>
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</table>

Note. N = 200. Pos./Neg. EtG = Positive/Negative emotions towards God. Pos./Neg. religious coping = Positive/Negative religious coping. *p < .05, **p < .01.
Study II. Rates and predictors of mental stress in Rwanda: Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model

Table 3.2  **Coefficients of the final structural equation model (SEM).**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>$\beta$</th>
<th>$b$ (SE)</th>
<th>C.R.</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental stress</td>
<td>gender$^a$</td>
<td>-.31</td>
<td>-3.80 (.85)</td>
<td>-4.48</td>
<td>***</td>
</tr>
<tr>
<td>Mental stress</td>
<td>persecution$^b$</td>
<td>.30</td>
<td>3.67 (.86)</td>
<td>4.26</td>
<td>***</td>
</tr>
<tr>
<td>Mental stress</td>
<td>social desirability</td>
<td>.27</td>
<td>.66 (.20)</td>
<td>3.27</td>
<td>**</td>
</tr>
<tr>
<td>Mental stress</td>
<td>readiness to reconcile</td>
<td>-.20</td>
<td>-.12 (.04)</td>
<td>-2.88</td>
<td>**</td>
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<tr>
<td>Mental stress</td>
<td>centrality</td>
<td>-.20</td>
<td>-.16 (.07)</td>
<td>-2.31</td>
<td>*</td>
</tr>
<tr>
<td>Centrality</td>
<td>mental stress</td>
<td>.28</td>
<td>.35 (.10)</td>
<td>3.58</td>
<td>***</td>
</tr>
<tr>
<td>Centrality</td>
<td>positive RF</td>
<td>.83</td>
<td>2.46 (.26)</td>
<td>9.59</td>
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<tr>
<td>Centrality</td>
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<td>-.48 (.22)</td>
<td>-2.16</td>
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<td>Readiness to reconcile</td>
<td>negative RF</td>
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<td>-1.43 (.22)</td>
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<tr>
<td>Readiness to reconcile</td>
<td>positive RF</td>
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<td>.75 (.28)</td>
<td>2.70</td>
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<td>education</td>
<td>-.24</td>
<td>-.60 (.16)</td>
<td>-3.77</td>
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</table>

**Note.** $N = 200$. $^a$: female coded as 0, male coded as 1. $^b$: individuals who were not persecuted during the genocide coded as 0, individuals, who were persecuted during the genocide coded as 1. RF = religious functioning. $^*p < .05$, $^**p < .01$, $^***p < .001$.

**Figure 3.2**  Final structural equation model with standardized path coefficients ($N = 200$).
3.5 Discussion

The first objective of the present study was to investigate rates of mental stress in Rwanda. Seventeen years after the genocide, results provide evidence that rates of PTSD, syndromal depression, and syndromal anxiety are still elevated in the post-genocide state. Of the total sample, 11% met diagnostic criteria for PTSD, 19% presented with syndromal depression, and 23% presented with syndromal anxiety. The second objective was to investigate predictors for mental stress. Female gender, persecution during the genocide, and readiness to reconcile were found to be associated with mental stress. Data further revealed a twofold relationship between centrality and mental stress. Positive religious functioning had an indirect negative effect on mental stress, and negative religious functioning had an indirect positive effect on mental stress.

Despite the high prevalence of mental disorders, access to qualified mental health services and treatment is limited in Rwanda. In 2011, the year in which data collection took place, Rwanda counted just five psychiatrists and only one neuropsychiatric hospital (Palmer & Firmin, 2011). Results provide evidence, that women and persons, who were persecuted during the genocide, are risk groups for higher levels of mental stress. Zraly and colleagues (Zraly, Rubin-Smith, & Betancourt, 2011) have proposed to facilitate the psychiatric supply of women, who became victims of collective sexual violence during the genocide by an improved access to qualified mental health services and by more qualified staff in rural health centers. Against the backdrop of constantly elevated rates of mental stress in Rwanda, respective measures would not only benefit the vulnerable societal groups of women and persons, who were persecuted during the genocide, but the Rwandan population in general.

According to our results, lower levels of readiness to reconcile are associated with higher levels of mental stress. Measures to promote reconciliation are retributive and restorative justice, reparations, sites and practices of remembrance, as well as educational and therapeutic measures (Bockers et al., 2011). Justice, reparations, and memorials are measures, which primarily refer to the macro (institutional) level of reconciliation and might thus contribute to a societal climate, which supports a general reduction of mental stress in Rwanda. Educational and therapeutic measures refer to the meso (group) level of reconciliation and to the micro (individual) level of reconciliation and might thereby contribute to a reduction of mental stress in smaller groups of persons and in individuals. Interventions, which include education on genocide and on trauma, which facilitate perspective taking and support healing, and which are adapted to the Rwandan context, have been developed and successfully applied.
Study II. Rates and predictors of mental stress in Rwanda: Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model

by Staub (2006). A widespread supply of respective reconciliation-sensitive interventions could contribute to a reduction of mental stress on the group level and on the individual level. The final SEM confirmed the expected twofold association between centrality and mental stress, indicating, that higher mental stress provokes a higher centrality (and thus importance given to religion) and that a higher centrality is associated with less mental stress. Pargament (1997) argues, that religion is an alternative resource that offers orientation and stability in face of disturbing experiences for those who have less access to secular resources and power. Contrarily to the deficient psychiatric infrastructure, churches, missionaries, and church-linked nongovernmental organizations are numerous in developing Rwanda (Bureau of Democracy, Human Rights, and Labor, 2007). Especially smaller Christian fellowships are nearby and low-threshold in offering therapeutic spiritual support (Kubai, 2005). The finding that mental stress leads to higher centrality might be related to this high availability of churches and church-related offers in Rwanda. The sense of control and meaning, offered to believers by religion (Trepper, Rogers, Coleman, & Malony, 2001) and religious social support, which was found to be positively associated with recovery from mental illness (Webb, Charbonneau, McCann, & Gayle, 2011), may explain the negative association between centrality and mental stress. However, church practices in Rwanda are not only positive. Though very poor, believers are frequently asked to pay high financial contributions. Additionally, church-staff is not usually trained in mental health care and can fail to respond adequately to the therapeutic needs of their followers. Given the importance of religion and thus of churches in Rwanda, legal control of church practices and training of church staff in mental health issues may contribute to improve mental health care in Rwanda.

Regarding the quality of religious belief, neither positive nor negative religious functioning exerted a direct influence on mental stress. Yet, mediated by centrality and readiness to reconcile, positive religious functioning was indirectly associated with lower mental stress and, mediated by readiness to reconcile, negative religious functioning was indirectly associated with higher mental stress. Attachment theory and notion of God can help to explain these findings. Positive religious functioning contains positive religious coping and thus a secure relationship with God and a feeling of spiritual bond with others, including readiness for religious forgiveness (Pargament et. al., 1998). It is also based on positive emotions towards God - among others, the release of guilt (Huber & Richard, 2010). Contrarily, negative religious functioning is marked by an insecure relationship with God and a precarious worldview, including punitive religious reappraisals (Pargament et. al., 1998). It
further contains negative emotions towards God, including feelings of guilt (Huber & Richard, 2010). Against this backdrop, it is apparent that positive religious functioning stimulates, while negative religious functioning decelerates readiness to reconcile. It is thereby also comprehensible that positive religious functioning reinforces centrality, as religion is experienced as comfortable. On the contrary, negative religious functioning goes along with negative religious feelings. This might explain, why negative religious functioning does not strengthen, nor - given the belief in a strict and punishing God, who might not accept a reduced religious practice - weaken centrality. Thus, on the one hand positive religious functioning can help to reduce mental stress by strengthening centrality and the readiness to reconcile. On the other hand, negative religious functioning can foster mental stress by hampering the readiness to reconcile. Implications of these findings concern religious, as well as secular professionals. On the one hand, religious practitioners should be sensitized to the indirect effect of religious functioning on mental stress and avoid destabilizing believers by proclaiming the image of a strict and punishing God. They should further use their power to foster the readiness to reconcile; many Rwandans might consider religious figures to be legitimate to talk about reconciliation (Assefa, as cited in Sampson, 1997), as core concepts of reconciliation (e.g. mercy) are drawn from religious traditions (Philpott, 2010). On the other hand, secular professionals should be encouraged to unfurl religious topics and to address religious functioning together with centrality and/or readiness to reconcile in therapy and counseling.

3.5.1 Limitations

Limitations of this study include, that data were self-reported and cross-sectional, therefore not allowing determination of causality. Measures were developed in Western cultures and the study sample was drawn from Kigali, though only about 11% of Rwanda’s population reside in the country’s capital (National Institute of Statistics of Rwanda, 2014). However, we included respondents from rural and urban neighborhoods of Kigali in our study. Though data collection took place in an explicit research context and all participants were informed about anonymity, socially desirable response behavior can never be fully prevented. Hence, we controlled for social desirability by integrating a lie scale into our questionnaire.
3.5.2 Conclusion

The outcomes of our study show, that rates of PTSD, syndromal depression, and syndromal anxiety are elevated in Rwanda. They further reveal that female gender, persecution during the genocide, readiness to reconcile, centrality, and religious functioning are important factors for mental stress in the east-central African country. The study results imply, that mental health services in Rwanda should be strengthened to meet the need of the population. In particular, respective services should enhance their offers and their availability to persons who are most affected by mental stress, identified in our study as women and persons, who were persecuted during the genocide. The finding, that centrality and mental stress are closely connected implies, that the concerted consideration of religious institutions and actors may be beneficial in the development of mental health services. As religious functioning directly impacts centrality and readiness to reconcile, and thereby is indirectly associated with mental stress it is further suggested, to address the contents of individual religious belief in secular and religious therapy and counseling.
4 Study III. Still not one people: Implicit ethnic perception of Tutsis in Rwanda

4.1 Abstract

Since the 2003 official abolishment of ethnic specification in Rwanda, it is prohibited to classify individuals into ethnic groups in the post-genocide country. Yet, ethnic discrimination is still practiced in the population, as qualitative studies show (Hiker, 2009; Moss & Vollhardt, 2016). For the first time, this study compiles objective data on ethnic perception in Rwanda. Investigating the inter-ethnic bias, it is hypothesized, that Rwandans, who were not persecuted during the genocide still associate the ethnic group of Tutsis with privilege and not with victimization, instead of their persecution during the genocide. In a sample of 46 non-persecuted Rwandans, this hypothesis was tested with a computer-based priming task, in which photos of persons who conformed to stereotypes of Tutsi and Hutu appearance, respectively, were combined with pictures of symbols representing privilege and victimization. Confirming the Tutsi-privilege-bias, results showed that responsiveness to the Tutsi-privilege combinations was higher compared to the Hutu-privilege combinations. No differences were found in the responsiveness to the Tutsi- and Hutu-victimization combinations. Perception of Tutsis was independent of readiness to reconcile.

4.2 Introduction

This study aims to investigate the implicit perception of Tutsis by Rwandans who were not persecuted during the genocide (non-persecuted). The following brief history of the ethnic conflict in Rwanda succeeds the deduction of the study hypotheses.

History of the ethnic conflict in Rwanda. In April 1994, the Rwandan genocide took place, claiming about half a million lives of Tutsis and approximately 10.000 lives of resistant Hutus within three months (Des Forges, 1999; Straus, 2006). The genocide was the apex of an ancient conflict between Rwandan Hutus and Tutsis, rooted in pre-colonial times, when their negative social categorization was prevalent. Servants and later farmers, were labeled as Hutu, an originally degrading term, associated with “rural boorishness and loutish behavior” (Vasina, 2004, p.134). Tutsi was associated with wealth and leadership, characterizing herders and the political elite. The first Europeans in Rwanda intensified this subdivision, by
categorizing Hutus as Bantu Negroes, “short, stocky, dark-skinned, and wide-nosed [and Tutsis as Hamitic ruling class,] tall, elegant, light-skinned, and thin-nosed” (Straus, 2006, p. 21; Chrétien, 2003). Consequently, Belgian colonialists initially favored Tutsis by providing them with leading jobs, whereas Hutus were treated like secondary citizens. The Belgian colonialists also introduced identity cards, which permanently determined one’s ethnic group and thereby stopped the previous permeability of the Hutu and Tutsi categories (Straus, 2006). Social discrimination and disadvantage triggered the 1959 Rwandan revolution, which brought Hutus into power. Afterwards, negative ethnic differentiation and tensions continued, now at the disadvantage of Tutsis. They were blamed for having expropriated and subordinated Hutus, who were defined as the original inhabitants of Rwanda (Rutayisire, 2009). The following repression of Tutsis caused the flight of many into neighboring countries. In 1991, the Rwandan Patriotic Front (RPF), an army of exile-Tutsis in Uganda, started an open conflict with the Rwandan army. With the 1993 Arusha Peace Accords the conflict was officially ended. However, extremist Hutu-politicians began preparations for the collective mass killing of Tutsis ending in the 1994 Rwandan genocide.

**Ethnic policy and social reconstruction in post-genocide Rwanda.** In July 1994, the genocide was stopped by the RPF, Rwanda’s governing party since 2000. The RPF’s ethnic policy was and continues to be guided by the *healing truth* (Zorbas, 2009), in which ethnic differentiation is considered as a detrimental colonial product, aiming to separate the Rwandan people. In order to foster national unity and reconciliation, Rwandans have been required to stop identifying with Hutu, Tutsi or Twa (a third minor group in Rwanda), and instead, to identify with the common, superordinate all-inclusive identity “Rwandan”. The 2001 *Ethnic Divisionism Law* and the 2008/2013 *Genocide Ideology Law* legally substantiate this regulation by prohibiting the differentiation or naming of ethnic groups. According to the Common Ingroup Identity Model (CIIM; Gaertner & Dovidio, 2000), single recategorization is a powerful strategy to reduce inter-race discrimination and to strengthen positive inter-race behavior. Single categorization is achieved by the liquidation of in- and out-groups by offering their members an alternative superior common identity. However, social recategorization of individuals with high subgroup identification was found to increase intergroup bias (Crisp, Stone, & Hall, 2006) and the model’s applicability to real, keen ethnic groups in conflict has been challenged (Hewstone, 1996). Therefore, it stands to question, if indeed the governments’ single recategorization policy (Moss & Vollhardt, 2016) is a promising approach to overcome ethnic conflict in Rwanda. Qualitative work provides
evidence that Rwandans continue to be conscious of their own and other’s ethnic background (Hilker, 2009; Moss & Vollhardt, 2016; Zorbas, 2009). Hence, the prohibition of ethnic specification may even be counterproductive, as it restricts an open exchange between the formerly hostile groups (Eltringham, 2011; Heim & Schaal, 2015; Hilker, 2009; Staub, 2006), while a negative differentiation continues in “the privacy of individual houses” (Kohen, Zanchelli, & Drake, 2011, p. 101). In addition, there are problematic inconsistencies in the RPF unity and reconciliation policy. For example, the official evaluation of the genocide unilaterally focuses on the victimization of Tutsis, though moderate Hutus were killed as well (Eltringham, 2011; Thomson, 2011). As a consequence, group-identification might be rather reinforced by creating alternative societal groups of victims (Tutsis) and génocidaires (Hutus) (Waldorf, 2011, p. 49). Because of inter-ethnic bias and contrary to the current unity policy in Rwanda the first study hypothesis is, that Tutsis are still associated with privilege and are not associated with victimization by Rwandans, who were not persecuted during the genocide.

Research found that readiness to reconcile in post-genocide Rwanda at the time of the studies was expressed from modest to well (Heim & Schaal, 2015; National Unity and Reconciliation Commission, 2010; Pham, Weinstein, & Longman, 2004; Schaal, Weierstall, Dusingizemungu, & Elbert, 2012; Staub, Pearlman, Gubin, & Hagengimana, 2005). These findings could imply, that group identities and ethnic prejudices are close to vanishing in Rwanda. Though, the readiness to reconcile can also be a pragmatic choice for individual Rwandans. On one hand, reconciliation facilitates Rwandans in performing their daily life, which includes the unavoidable contact with members of the other ethnic group. On the other hand, reconciliation is a non-debatable social task, expected of the entire population as part of the current unity and reconciliation policy. Indeed, if reconciliation was to occur it does not necessarily mean, that the roots of this historically bound conflict are eliminated. For example, the inter-personal process of reconciliation can be detached from the intra-personal process of forgiveness (McCullough, Pargament, & Thoresen, 2000). Nevertheless, forgiveness is supposed to be essential for the sustainable success of reconciliation and thus for long-term conflict resolution (Auerbach, 2005; Hartwell, 1999). With the Rwandan genocide in relative recent history and given, that ethnic prejudices are very hard to change (Eidelson & Eidelson, 2003), well-expressed levels of readiness to reconcile do not confirm that ethnic discrimination has come to an end in Rwanda. Therefore, the second study hypothesis proposes, that the unconscious process of intra-personal ethnic evaluation is independent of readiness to reconcile.
4.3 Method

Research was carried out in January and February of 2011 in Kigali, Rwanda. Prior to data collection, the study was approved by the University of Konstanz Ethical Review Board, the Rwandan Ministry of Science and Technology and the Ministry of Internal Security/Rwanda Prisons Service. All instruments, which had not yet been translated as part of previous studies (Schaal & Elbert, 2006; Schaal, Jacob, Dusingizemungu, & Elbert, 2010; Schaal et al. 2012), were translated into Kinyarwanda and back by two independent Rwandans. The study comprised an interview and a computer experiment.

4.3.1 Sampling procedure and survey data collection

Participants of the present study were selected from a sample of 200 community residents and 200 confessed genocide perpetrators, who took part in a survey on mental health, reconciliation, and religion, realized in January of 2011 in Kigali, Rwanda. Subsequently, survey sampling and procedure are described. Following, the sampling procedure for the computer experiment is explained.

Eligible respondents of the survey were residents of five randomly selected districts of Rwanda’s capital Kigali (Muhima, Ndera, Nyamirambo, Kimisigara, Remera) as well as perpetrators who had confessed their genocide-related crimes and whose lawsuits were terminated. The perpetrators were recruited from five camps in and around Kigali (Kayanga, Kinyinya, Mont Kigali, Nduba, Rutororo), where they were serving community service (TIG, Travail d'Intérêt Général) as part of their sentence. The TIG-program is considered as a measure of restorative justice, which has the goal to foster unity and reconciliation in Rwanda (Kayiggwa, 2008). Besides working, TIGists participate in Ingando. Ingando is a civic education program of the Rwandan National Unity and Reconciliation Commission (NURC), which was founded in 2010 in order to foster unity and reconciliation in Rwanda. In Ingando TIGists are reeducated in conformity with the official national unity and reconciliation doctrine. Contrary to prison inmates TIGists are integrated into society. While conducting community service, TIGists get in touch with community residents. They are sometimes allowed to visit their families and to spend a weekend at their homes.

All participants were at least 30 years old at the time of the interview and had stayed in Rwanda during the genocide. Interviews lasted about two hours and were carried out by a team of ten local Master level psychologists who had been briefed on the aims and the procedure of the study in an intensive one-day training session. All of them had already
received extensive training in conducting structured interviews and had conducted interviews as part of previous studies.

In the community, data were collected in a randomized house-to-house survey. In the TIG camps, subjects were randomly chosen from a complete list of all inmates (for a detailed description of data collection, see Heim & Schaal, 2015). Before participation in the survey all subjects were informed about the study’s aims, voluntary participation, and anonymity of data collection. They were further told that data collection was for research purpose only and that they could always discontinue participation without giving any explanation. After elucidation, informed consents were obtained from all participants. Having finished the interview, respondents were given the opportunity to ask questions concerning the study. In the community, participation was rewarded with 1,000 Rwandan Franc (about 1.20 €). Of the approached individuals, six persons refused to take part in the trail.

Selection criterion for participation in the computer experiment was the score on the applied Readiness to Reconcile Inventory (RRI; Heim & Schaal, 2015). In order to control for readiness to reconcile as a potential determinant of inter-ethnic perception, individuals with high and with low reconciliation-scores (referring to the median of the RRI) were selected in a descending and ascending manner, respectively, from the community (Mdn = 33) and from the TIG-camps (Mdn = 36). If respondents were not available, refused participation or did not show up (community: 20 persons; perpetrators: 17 persons), and if respondents were not capable to perform the computer experiment (community: 2 persons; perpetrators: 7 persons), we contacted the next subject who fulfilled the sampling criterions. Computer experiments were realized with 33 (52%) community residents and with 30 (48%) TIGists. At least half of the participants from the community and from the TIG-camps had high and low reconciliation-scores, respectively.

4.3.2 Socio-demographic characteristics and questionnaire measures

During the interviews, socio-demographic data were obtained from each respondent, including gender, age, education, and religious affiliation. Of the 63 participants, 32 (51%) were female and 31 (49%) were male. The average age was 46.75 years (SD = 10.52, range: 35-80 years). One person (2%) had a university degree, three persons (5%) had completed secondary school, 26 persons (41%) had completed primary school, and 33 persons (52%) did not obtain any school degree. The average time spent in school was 4.48 years (SD = 3.85, range: 0-15 years). Participants were Catholic (n = 29, 46%), Protestant (n = 17, 27%), Adventist (n = 8, 13%), Muslim (n = 6, 9%), or had another religious affiliation (n = 3, 5%).
The 2001 Ethnic Divisionism Law prohibits naming of ethnic relation in Rwanda. In order to gather information about the respondents’ likely ethnic background it had therefore been recorded, if a participant belonged to the group that had been or to the group that had not been persecuted during the genocide. Despite that there was a spectrum of responses to genocide among Hutus (Fujii, 2009) and that those, who resisted participation in the killings or rescued Tutsis, were persecuted as well, the official terminology in Rwanda was set to genocide of Tutsis in 2008. Thus, by formulating the question in a dichotomous way it was assumed, that participants understood the reference to the ethnic groups and would allocate themselves in a corresponding manner. Of the 63 selected individuals, 46 persons (73%) classified themselves as belonging to the group, which had not been persecuted during the genocide (non-persecuted persons). Seventeen persons (27%) classified themselves as belonging to the group, which had been persecuted during the genocide (persecuted persons). All persecuted persons were community residents. Eight of them (47%) had low and nine of them (53%) had high RRI-scores.

Readiness to reconcile was captured with the Readiness to Reconcile Inventory (RRI; Heim & Schaal, 2015). The RRI encompasses reconciliation with the 7-item equity and equality scale (e.g., “In this country all humans are treated equally.” or “The crimes of the genocide are fairly reappraised.”) and the 8-items trust and cohesion scale (e.g., “I am cautious towards Rwandans, whom I don’t know.” or “In Rwandan marriages group membership plays an important role.”). The 15 items of the RRI are rated on a five-point scale ranging from 0 (totally disagree) to 4 (totally agree) and has a possible score range from 0 to 60. In the study sample, the RRI mean score was $M = 31.13$ ($SD = 13.28$, range: 3-52). Cronbach’s alpha coefficient was 0.89.

Appetitive aggression is a form of aggression, which has been introduced and defined by Elbert and colleagues as the “perpetration of violence or the infliction of harm to a victim that is aimed to experience violence-related enjoyment by the exposure to violence cues” (Elbert, Weierstall, & Schauer, 2010, p. 104). Substantial rates of appetitive aggression have been found in Rwandan genocide prisoners (Weierstall, Schaal, Schalinski, Dusingizemungu, & Elbert, 2011). As described in the following section, the victimization symbols used in the computer experiment included cues associated with violence. In order to control for appetitive aggression as a potential confounding variable for these victimization symbols, we captured appetitive aggression using the Appetitive Aggression Scale (AAS; Weierstall & Elbert, 2011). This scale captures the appetitive perception of violence with 15 items (e.g., “It is exciting to you if you make an opponent really suffer” or “Once you got used to being cruel,
did you want to be crueler and crueler”), which are rated on a 5-point scale ranging from 0 (totally disagree) to 4 (totally agree). Possible scores on the AAS range from 0-60. On average, study participants had reported a sum score of \( M = 10.87 (SD = 11.91, \text{ range } = 0-53) \). Cronbach’s alpha coefficient was 0.92. All instruments were administered as interviews.

An explorative analysis was conducted in the total sample. The study hypotheses were tested in the group of non-persecuted individuals. Socio-demographic data and mean scores of readiness to reconcile and of appetitive aggression in non-persecuted persons are presented in Table 4.1. In this group of persons, Cronbach’s alpha coefficient for the RRI-scale was 0.90; Cronbach’s alpha coefficient for the AAS was 0.92.

Table 4.1  

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
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<tr>
<td>Female</td>
<td>19</td>
<td>41.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>58.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>36</td>
<td>80</td>
<td>48.13</td>
<td>10.40</td>
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<table>
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<tr>
<th>Highest school degree obtained</th>
<th>n</th>
<th>%</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>No degree</td>
<td>29</td>
<td>63.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>16</td>
<td>34.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apprenticeship</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>1</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of school years completed</td>
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<td></td>
<td>0</td>
<td>15</td>
<td>3.70</td>
<td>3.24</td>
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<th>Religion</th>
<th>n</th>
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<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
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</thead>
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<tr>
<td>Catholic</td>
<td>23</td>
<td>50.0</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Protestant</td>
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<td>23.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islamic</td>
<td>3</td>
<td>6.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adventist</td>
<td>7</td>
<td>15.2</td>
<td></td>
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<tr>
<td>Other</td>
<td>2</td>
<td>4.3</td>
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<td></td>
<td></td>
<td></td>
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</table>

<table>
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<th>Civil status</th>
<th>n</th>
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<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
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<tr>
<td>Married</td>
<td>37</td>
<td>80.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>6</td>
<td>13.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (single, separated, divorced)</td>
<td>3</td>
<td>6.5</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>RRI</th>
<th>n</th>
<th>%</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
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<tr>
<td>AAS</td>
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<td></td>
<td>3</td>
<td>47</td>
<td>31.17</td>
<td>13.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>53</td>
<td>12.74</td>
<td>12.76</td>
</tr>
</tbody>
</table>
4.3.3 Computer-based priming experiment: Stimulus material

The design of the computer experiment was adopted from Fazio, Jackson, Dunton, and Williams (1995). The stimulus material included 24 color photos of non-Rwandan black African persons stemming from southern or northern Africa and, for the priming task, 54 color photos of Rwandans. All photos were obtained from an Internet research. Photos were used for research purposes only and the backgrounds of all photos were neutralized before use. Of the photos of Rwandans, 21 photos showed persons who fulfilled the stereotype of a Tutsi appearance (Tutsi photos), 21 showed persons who fulfilled the stereotype of a Hutu appearance (Hutu photos), and 12 photos showed persons who fulfilled the stereotype of a Twa appearance (Twa photos). To validate group affiliation, two independent Rwandans judged the ethnic classification of the persons on the photos.

Following, it is described how the photos were allocated to distinct categories, whose meaning and usage will be explained in the next section (see 4.3.4). Six randomly chosen female and six randomly chosen male Tutsi and Hutu photos, respectively, were used as primes. Six randomly chosen female and six randomly chosen male Tutsi and Hutu photos, respectively, and the Twa photos served as filler material. The remaining Tutsi and Hutu photos were used as exercise material. Further, 30 symbols were designed for the experiment. Of those, 15 were representing privilege (e.g., car, cow, jewelry) and 15 were representing victimization (e.g., traditional cottage in flames, graveyard, injury). 12 privilege symbols and 12 victimization symbols were randomly chosen as target symbols and the others as exercise symbols.

4.3.4 Computer-based priming experiment: Procedure

The software PsyScope (Cohen, MacWhinney, Flatt, & Provost, 1993), Version PsyScope X Build 57, was used to collect the data of the computer-based experiment. The experiments were applied by the principal investigator (L. H.) and a Rwandan translator. Prior to the start of the study, the translator attended an intensive training session to become familiar with the procedure of the computer experiment.

Experiments took place in a private room in Kigali or in private rooms at the TIG camps. Before the trail, participants were informed, that the collected data were used for research purposes only and that data collection was anonymous. They were further informed, that participation was voluntary and could be disrupted at any point in the course of the experiment. As cover story they were told, that the experiment’s goals were to measure
responsiveness to the meaning of pictures and memory. Following the standardized, individual introduction, participants performed training trials, as most had never operated a computer before. Each training trial consisted of a randomized presentation of the six exercise symbols, followed by a randomized presentation of the 24 target symbols. According to privilege (positive) or victimization (negative) meaning of the presented symbol, subjects were instructed to press the plus or the minus button, marked on the keyboard. A row of asterisks preceded each symbol as a warning signal. Symbols remained on the screen until the subject’s response or for a maximum of 1.75 s. The symbol presentations were separated by a 2.5 s interval. During the training trials, the principal investigator and the translator were sitting beside the participants to intervene and to re-explain the procedure if necessary as well as to validate, that participants correctly evaluated the symbols (privilege vs. victimization). Once a participant had completed one entire trial without errors, the principal investigator stopped the training session and started the computer experiment. Training duration varied from 3 min to 67 min. The actual experiment consisted of four phases, which were labeled baseline block, priming task, recollection block, and attractiveness rating.

(1) Baseline block. This block was built of the same symbol-meaning task as the one used in the training trials. However, this block only consisted of two trials and respondents were instructed to react as quickly and accurately as possible to the meaning of the symbols. The average reaction rate for each of the twice-presented symbols served as the participant’s baseline reaction rate for that symbol.

(2) Priming task. The second phase of the experiment was the actual priming task, in which prime photos preceded the symbols. The priming task contained a training block and four priming blocks. For the training block, six exercise photo-symbol-combinations were composed and presented in a randomized manner. For the priming task, we generated twelve pairs of prime photos, each comprising a Tutsi photo and a same-sex Hutu photo as well as twelve pairs of filler photos, combining Twa photos and same-sex Tutsi or Hutu photos. Two privilege and two victimization target symbols were associated each with one female and with one male pair of prime photos and with one female and one male pair of filler photos. In each priming block, the 48 photos were presented in a randomized manner combined each with one of the associated four symbols (see Figure 4.1). Each prime photo-symbol combination consisted of a 2.5 s interval, followed by a 315 ms presentation of the priming photo, a 135 ms interval, and the presentation of the symbol. Symbols remained on the screen until a
button was pressed, or for a maximum of 1.75 s. Participants were asked to memorize the photos in order to recall them at a later point and to continue to react as quickly and accurately as possible to the symbols. Their reaction rate was recorded for each symbol.

Figure 4.1  Design of the priming task.
In each of the four priming blocks (PB), each paralleled pair of a female Tutsi and a female Hutu priming photo and of a male Tutsi and a male Hutu priming photo (in this figure represented as sketches) was presented once. In each case the priming photo was combined with one of the two associated symbols of privilege and victimization, respectively.

(3) Recollection block. The third block comprised a randomized presentation of the 24 photos of non-Rwandan African persons as well as of 24 randomly chosen prime and filler photos. Participants were instructed to press the plus or the minus button, depending on their recalling of the presented photo. Photos were preceded by a 2.5 s interval and presented until a button was pressed or for a maximum of 5 s.

(4) Attractiveness rating. To control for attractiveness, the 48 prime and filler photos were randomly presented in the fourth block of the experiment and rated on a scale ranging from 1 (not at all attractive) to 9 (very attractive). Before starting the attractiveness rating, the principal investigator explained the functioning of the 9-point scale and completed the instruction with examples. Subsequently, participants were asked if they had understood the instruction as well to repeat the instruction with their own words. In the attractiveness rating,
photos were preceded by a 2.5 s interval and remained on the screen until the person pressed a button.

Having finished the computer experiment, participants were clarified that its target was a better understanding of group-coherence in Rwanda by comparing reaction latencies to positive and negative symbols associated with photos of in- and outgroup members. After debriefing, subjects from the community were reimbursed their transport fees and rewarded with 1,500 Rwandan Francs (about 1.70 €) for their participation.

4.3.5 Data analysis

Version 21 of IBM SPSS Statistics software was used to perform data transformation and analysis. Reaction rates of all photo-symbol presentations, to which participants reacted incorrectly (2%), were discarded in all calculations, which are described subsequently.

Facilitation scores. To account for differences between the reaction rates due to valence of the symbol we determined facilitation scores. Facilitation scores were obtained by subtracting reaction rates for any prime-symbol combination presented in the priming block from the mean reaction rate for the respective symbol presented in the baseline block (baseline reaction rate). Next, we determined mean facilitation scores (MFS) for the two privilege target symbols and for the two victimization target symbols of each prime photo. In a final step, MFS for stimuli of privilege and stimuli of victimization were determined for each participant according to the ethnic appearance of the prime photos (Tutsi vs. Hutu).

Comparing descriptive statistics of average baseline reaction rates (Table 4.2) and average priming reaction rates (Table 4.3) it stands out, that respondents speeded up their reaction to the target symbols in the course of the experiment. This is ascribed to a training effect. Consequently, facilitation scores were positive. Higher facilitation scores indicate a higher facilitation and thus a higher reaction rate to a prime-symbol combination.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privilege</td>
<td>63</td>
<td>518.83</td>
<td>1217.92</td>
<td>828.71 (144.93)</td>
</tr>
<tr>
<td>Victimization</td>
<td>63</td>
<td>547.83</td>
<td>1144.13</td>
<td>825.96 (130.17)</td>
</tr>
</tbody>
</table>
Table 4.3  Descriptive statistics of average reaction rates to the prime-symbol combinations in the priming block.

<table>
<thead>
<tr>
<th>Prime-symbol combination</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutsi privilege</td>
<td>63</td>
<td>439.57</td>
<td>1179.13</td>
<td>762.93 (163.06)</td>
</tr>
<tr>
<td>Hutu privilege</td>
<td>63</td>
<td>489.59</td>
<td>1248.29</td>
<td>769.28 (164.22)</td>
</tr>
<tr>
<td>Tutsi victimization</td>
<td>63</td>
<td>537.50</td>
<td>1120.45</td>
<td>777.64 (156.27)</td>
</tr>
<tr>
<td>Hutu victimization</td>
<td>63</td>
<td>514.05</td>
<td>1182.46</td>
<td>783.27 (156.47)</td>
</tr>
</tbody>
</table>

Privilege index and victimization index. In order to test our hypotheses, a privilege index (PI) and a victimized index (VI) were required, that reflect the participants’ implicit perception of Tutsis as privileged and as victimized, respectively. The privilege index (PI) was defined as the difference of the MFS for the Tutsi-privilege combinations (MFS$_{TP}$) and the MFS for the Hutu-privilege combinations (MFS$_{HP}$):

\[ PI = MFS_{TP} - MFS_{HP} \]

Higher PI scores indicate a stronger association between Tutsis and privilege compared to the Hutu-privilege association. Analogously, the VI was defined as the difference of the MFS for the Tutsi-victimization combinations (MFS$_{TV}$) and the MFS for the Hutu-victimization combinations (MFS$_{HV}$):

\[ VI = MFS_{TV} - MFS_{HV} \]

Higher VI scores indicate a stronger association between Tutsis and victimization compared to the Hutu-victimization association.

The study-hypotheses were tested in the sample of 46 non-persecuted persons. Before conducting analyses, one unacceptably influential case was identified in the group of non-persecuted individuals and excluded (Cook’s $D_i > 0.6$; Bollen & Jackman, 1990). In order to investigate the perception of Tutsis, two one-sample t-Tests were conducted involving the PI and the VI as dependent variable, respectively. Multiple linear regressions were used to analyze the effect of readiness to reconcile on the perception of Tutsis. In the regression analyses attractiveness was included as control variable. As attractiveness index, the difference of the mean of Tutsi-photos attractiveness ratings and the mean of Hutu-photos attractiveness ratings was used. Positive values of the attractiveness index indicate that Tutsis
were judged as more attractive. Negative values indicate, that Hutus were judged as more attractive. All reported statistical tests were two-tailed.

4.4 Results

Before testing the study hypotheses, a mixed analysis of variance was applied in the total sample of 62 non-persecuted and persecuted persons in order to explore, if group belonging (persecuted vs. non-persecuted) had an effect on ethnic perception. The analysis involved one between-subject variable (persecution), three within-subjects variables (ethnic classification, gender of the prime photo, valence of the symbol), and one covariate (attractiveness). A significant two-way interaction effects emerged between ethnic appearance of photo and persecution, $F(1, 59) = 4.22, p = .044$. A significant two-way interaction effect was also found between valence of symbol and persecution, $F(1, 59) = 9.71, p = .003$. These interaction effects were qualified by a three-way interaction effect of ethnic appearance of photo x valence of symbol x persecution, $F(1, 60) = 6.25, p = .015$. The three-way-interaction is presented in Figure 4.2.

![Figure 4.2](image)

**Figure 4.2** Mean facilitation scores for symbols of privilege and victimization preceded by Hutu and by Tutsi prime photos in non-persecuted ($n = 45$) and in persecuted ($n = 17$) individuals.

4.4.1 Implicit perception of Tutsis

In the group of non-persecuted individuals ($n = 45$), the result of the one-sample t-test that involved the PI as dependent variable provided evidence, that responsiveness to the Tutsi-privilege combination was higher compared to the responsiveness to the Hutu-privilege combination ($M = 31.37$, $SD = 59.36$), $t(44) = 3.55$, $p = .001$, $d = .53$. The subsequently conducted one-sample t-test with the VI as dependent variable was not significant ($M = 7.39$, $SD = 12.94$), $t(44)$ = 1.15, $p = .25$. The analysis revealed a significant three-way interaction effect, $F(1, 60) = 6.25, p = .015$. This indicates that the effect of the prime photo on the facilitation scores depended on the valence of the symbol and the level of persecution.
This finding shows that Tutsis are not associated with victimization (compared to Hutus).

### 4.4.2 Implicit perception of Tutsis and readiness to reconcile

In order to investigate the association between readiness to reconcile and perception of Tutsis, multiple linear regression analyses were applied. The analyses involved the PI and the VI, respectively, as dependent variables. Readiness to reconcile was entered as independent variable. Further, group belonging (community resident vs. TIGist) and attractiveness were entered as control variables. In the regression analysis involving the VI as dependent variable, appetitive aggression was additionally included as control variable. Correlations of all dependent and independent variables can be drawn from Table 4.4. The results of both multiple linear regression analyses are presented in Table 4.5. As expected, readiness to reconcile was not predictive for the PI and the VI.

<table>
<thead>
<tr>
<th>Table 4.4</th>
<th>Correlation matrix of the privilege index (PI), the victimization index (VI), and the independent variables.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PI</td>
</tr>
<tr>
<td>PI</td>
<td>—</td>
</tr>
<tr>
<td>VI</td>
<td></td>
</tr>
<tr>
<td>Readiness to reconcile</td>
<td></td>
</tr>
<tr>
<td>Group&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Attractiveness</td>
<td></td>
</tr>
<tr>
<td>Appetitive aggression</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 45. <sup>a</sup>: Community residents coded as 0, TIGists coded as 1.
Table 4.5  
Simultaneous multiple regression analyses with the privilege index (PI) and the victimization index (VI) as dependent variables.

<table>
<thead>
<tr>
<th></th>
<th>PI</th>
<th>VI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE(B)</td>
</tr>
<tr>
<td>Readiness to reconcile</td>
<td>.24</td>
<td>.71</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>-5.17</td>
<td>8.64</td>
</tr>
<tr>
<td>Aggression</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

R²               | —    | —     | —    | —    | —               | .24  | .06   | .00  | .646 | .634 |

Note. N = 45. CI = Confidence interval. a: Community residents coded as 0, TIGists coded as 1.
4.5 Discussion

This study provides rare data on ethnic perception in a context in which it is illegal to use ethnic labels. Results provide first empiric evidence that individuals who were not persecuted during the genocide continue to distinguish Hutus and Tutsis and to evaluate them differently in today Rwanda. Tutsis appear to be implicitly associated with privilege and not with victimization. The implicit ethnic perception of Tutsis was found to be independent of readiness to reconcile.

In post-genocide Rwanda, ethnic equality is the official policy, but not yet established. As described in the edited volume of Straus & Waldorf (2011), ethnic discrimination at disadvantage of non-persecuted persons manifests itself in memory culture, distribution of land, freedom of opinion and assembly, and transitional justice. Simultaneously there is also injustice at the cost of persecuted persons. Tutsis who survived the genocide first hand in Rwanda are mainly living in severe poverty. In addition, victims whose cases were heard at traditional Rwandan courts (Gacaca) did not receive the promised reparation from the state and only little restitution from confessed or convicted genocide perpetrators (Human Rights Watch, 2014).

Injustice is a key belief domain for group conflict (Deutsch, 2000; Eidelson & Eidelson, 2003; Staub, 1989). It implies that group members perceive their own group as being hampered in achieving goals and outcomes by another group, which is considered as more powerful and privileged. Non-persecuted persons, who were brought up in pre-genocide Rwanda had been briefed on the stereotype of Tutsi-privilege. Therefore, they may have a biased view on social justice in today Rwanda, focusing on their own group and on proper discrimination. This might be the reason that non-persecuted individuals continue to associate Tutsis with privilege and not with victimization after genocide.

In the government’s ideology, ethnic unity and reconciliation are inseparably linked. As listed in the introduction (see section 4.2), various studies have provided evidence that readiness to reconcile is prevalent in Rwanda. Yet, study results show, that readiness to reconcile and implicit ethnic perception are independent from one another, providing evidence, that readiness to reconcile does not interfere with ethnic perception. This finding contests the effectiveness and thus the necessity of the one-identity-policy for the Rwandan peace process. Instead of being related to ethnic differentiation, readiness to reconcile may be rather motivated by social needs and political pressure, or ascribed to mental health and ways of religious coping as recently found by Heim and Schaal (2014, 2015).
Group members constantly validate collective beliefs by sharing them with other group members, wherefore respective beliefs are more resistant to change (Bar-Tal, 2000b). As a consequence, the change of a collective mind-set as found in this study is difficult, especially when socio-economic conditions do not dissent but - considered from the perspective of non-persecuted persons - may rather support it. However, as experiences of injustice and relative deprivation are important triggers for violence against other groups, the change of a biased collective mid-set is an essential premise for sustainable peace in post-conflict settings (Eidelson & Eidelson, 2003). For that purpose, it seems recommendable to open-up the intercourse of ethnic groups in Rwanda. In this way, persisting ethnic stereotypes and ethnic injustice could be openly addressed and worked on through community-based interventions. Doing this, education would certainly play a key role. Before genocide Rwandans were taught that Hutus had been oppressed and exploited by Tutsis (Rutayisire, 2009). In post-genocide Rwanda, Rwandans are reeducated in line with the RPF healing truth (Zorbas, 2009, see section 4.2). However, as outlined in the introduction, there are significant inconsistencies in the implementation of the corresponding RPF unity and reconciliation policy, which are for the most part at disadvantage for non-persecuted persons. This holds the risk to strengthen feelings of injustice in this group of persons and thereby to keep ethnic prejudices alive. Instead, intercourse of ethnic groups should be accompanied by positive education, for example by applying democratic teaching (Freedman, Weinstein, Murphy, & Longman, 2011) in Rwandan history lessons. In this approach, students are invited to critically explore existing sources, to consider different points of views, to exchange, and in this way, to construct their own understanding of the past. In a comparable approach with adults, Rwandans of both ethnic groups are brought together in so-called integrated groups (Staub, 2006). In these moderated groups, participants share their experiences during the genocide, receive information about the universal roots of genocide, and are encouraged to apply this knowledge to the current Rwandan context. The intervention has been proven to promote a positive orientation toward the other group (Staub, 2006). Also, the broadcast of an educational radio program, explaining the evolution of genocide and encouraging people, to speak out their opinion and to engage for peace was found to strengthen positive inter-group action in the post-genocide country (Staub, 2014).

In her qualitative work on the single recategorization policy in Rwanda, Moss and Vollhardt (2016) succeeded in discussing ethnicity in a sample of 56 Rwandan. Results show, that participants evaluate the government’s one-identity-ideology and its implementation in a differentiated way. Most participants considered arguments for and against the government’s
approach and developed creative and well-thought alternative avenues in order to foster unity in Rwanda. Ideas are reaching from a temporary maintenance of the single recategorization approach, its application in a less restricting way, to the point of its abolishment. In contrast, interviewed political leaders focus on the pro-arguments and support its strict implementation (Moss, 2014). Changes in Rwanda are traditionally imposed in a top-down manner. However, the most innovative and sustainable proposals to foster unity and reconciliation will probably derive from the Rwandan population itself, given that they have the opportunity to actively get involved in a democratic reprocessing of their past and into the reengineering of post-genocide Rwanda.

4.5.1 Limitations

This study has several limitations. Though recruited from urban and rural areas of the Rwandan capital respondents were only coming from Kigali which implies, that generalization of the study-results to society at large may not be correct. Group membership was based on self-identification. With regard to the applied questionnaires, social desired response behavior can never be fully ruled out. However, data was collected anonymously, participants derived from a large randomized sample, and interviews were conducted in an explicit research context. Finally, instruments were based on concepts developed from findings in OECD countries. Although some of these have been validated in East African contexts, it is possible that they overlook important elements that are less obvious in European studies.

4.5.2 Conclusion

In this study priming techniques have been applied for the first time in order to collect data on ethnic perception in a post-genocide country in which it is illegal to label ethnic groups. Results show, that this is a promising design to capture collective mind-sets in settings, where direct approaches are problematic. Study findings suggest, that ethnic thinking is still present in Rwanda. Independently of readiness to reconcile, non-persecuted individuals continue to associate Tutsis with privilege and do not associate them with victimization. Equal ethnic treatment, a cautious opening up of the inter-ethnic dialogue, and community-based interventions are discussed as measures to diminish inter-ethnic bias in Rwanda. Research avenues emerging from this work include a further investigation of the underlying psychological mechanisms for ethnic perception in Rwanda, the replication of the study in a
larger sample, and its repetition at a later date in order to investigate the development of implicit ethnic perception in Rwanda.
5 Study IV. Posttraumatic stress disorder and appetitive aggression in Rwandan genocide perpetrators

5.1 Abstract

The objectives of this study were to investigate rates of posttraumatic stress disorder (PTSD), levels of appetitive aggression, and potential risk factors for appetitive aggression in a sample of 200 Rwandan genocide perpetrators. Five percent of the perpetrators presented with PTSD and high levels of appetitive aggression were common. High levels of appetitive aggression were associated with male gender, a high number of past committed offenses, and low levels of positive and elevated levels of negative religious coping. Considering the substantial extent of appetitive aggression, the reintegration of these individuals into the community should consider the inclusion of programs that restrain appetitive aggression and restore psychological functioning to facilitate a peaceful coexistence.

5.2 Introduction

During the genocide in Rwanda in 1994, it is estimated that nearly one million people were murdered over the course of three months. Fighting erupted between two artificially divided “ethnic” groups, the Hutu majority and the Tutsi minority. The main goal of the perpetrators of the genocide was to eliminate the Tutsi minority and the Hutu opponents. Many people, including ordinary citizens, either willingly joined the slaughter or did so under coercion. The perpetrator group carried out extreme violence, encouraged by impunity. In fact, there were even negative consequences for refusing the order to kill. According to Scherrer (1997), 25% of the Hutu population (including children and women) directly participated in the perpetration of the Rwandan genocide. A period of norm shifts preceded the killings. It was propagated that the Tutsi would be a dangerous threat to the Hutu and the conclusion that the killings of the Tutsi were necessary and justifiable acts of perceived revenge was generated. This collective shift in perceptions altered the consciousness to acceptance of killings (Dutton, 2007). Moreover, because of the impunity, violence became “normalized”. According to Moshman (2011) the mass killings during the genocide were crimes of group violence, which involved a dichotomization of social identities. The dehumanization of the outgroup (Tutsi) turned the killing acceptable and less bad. Conformity was reinforced
through extreme social pressure. Moreover, the phenomenon of groupthink - a mode of thinking that can be found in people who deeply belong to a cohesive group - further enhanced participation in killings. According to Dutton (2007), killers engaging in groupthink have an illusion of invulnerability and moral righteousness, which might result in extreme risk taking and negative stereotypes of outgroups. They strive for unanimity that renders them blind to realistically evaluate alternative courses of action. A feeling of perceived threat could enhance this phenomenon.

In recent years, research into the mental health consequences of the Rwandan genocide has increased. Several surveys have demonstrated that symptoms of posttraumatic stress disorder (PTSD; Brounéus, 2010; Pham, Weinstein, & Longman, 2004; Schaal & Elbert, 2006; Sezibera, Van Broeck, & Philippot, 2009) and depression (Brounéus, 2010; Schaal, Jacob, Dusingizemungu, & Elbert, 2011) are common among Rwandan genocide survivors. Research on the mental health of the Rwandan perpetrators is scarce. Some have argued that participation in mass violence and the infliction of harm on others could be considered a potentially traumatizing event that could also cause trauma-related symptoms (MacNair, 2002a; Staub, 2006). Indeed, the results of a recent study showed that imprisoned perpetrators of the Rwandan genocide exhibit a considerable degree of psychiatric morbidity (Schaal, Weierstall, Dusingizemungu, & Elbert, 2012). Following the genocide, the judicial system in Rwanda was completely destroyed. Trials proceeded only slowly and, over the years, the suspects were still detained in overcrowded jails. All those who participated could not possibly be imprisoned. Thus, a traditional Rwandan community-based conflict resolution system called Gacaca was initiated. People who confessed their crimes during the Gacaca trials and who were found guilty of participating in the genocide received a reduction of their sentences and serve all or part of their sentence doing community service. Travail d’Intérêt Général (TIG) is the French acronym that refers to community service, which is meant to help confessed perpetrators return to Rwandan society. During the week, the so-called TIGists live in camps (comparable to prisons); however, they have more rights in comparison to prisoners, as they are sometimes allowed to visit their families for the weekend. The first goal of this study was to examine rates of PTSD in Rwandan genocide perpetrators who do community service as part of their punishment (TIGists).

Whereas some authors have argued that the commitment of violence might be traumatizing (MacNair, 2002a; Staub, 2006), other researchers have noted that the commitment of violence can even be appealing and fascinating (Elbert, Weierstall, & Schauer, 2010; Nell, 2006; Silva,
Derecho, Leong, Weinstock, & Ferrari, 2001). Elbert and colleagues (2010) defined appetitive aggression as the “perpetration of violence or the infliction of harm to a victim that is aimed to experience violence-related enjoyment by the exposure to violence cues” (p. 104). Thus, it is not solely the instrumental gain that drives aggression, but aiming for an intrinsic reward. A number of recent studies have investigated appetitive aggression in Rwandan genocide prisoners (Weierstall, Schaal, Schalinski, Dusingizemungu, & Elbert, 2011), former Congolese combatants (Hecker, Hermenau, Maedl, Elbert, & Schauer, 2012), and child soldiers from Uganda (Weierstall, Schalinski, Crombach, Hecker, & Elbert, 2012b). “We became more and more cruel, more and more calm, more and more bloody” (Hatzfeld, 2005/2006, p. 50) is one of numerous statements of Rwandan genocide perpetrators describing appetitive aggression.

Several studies have shown that appetitive aggression might be a protective factor for the development of PTSD symptoms (Elbert et al., 2010; Weierstall et al., 2011). Elbert and coauthors (2010) found fewer symptoms of PTSD in those who reported higher levels of appetitive violence. The authors explained a resilience mechanism on the basis of the competition between two associative memory networks, the trauma/fear network (e.g., Schauer, Neuner, & Elbert, 2011) and the hunting network, and suggested that appetitive aggression might prevent the integration of traumatic events into the fear network (Elbert et al., 2010). We therefore examined whether those perpetrators with a higher PTSD symptom severity would display lower levels of appetitive aggression compared with those who showed less severe symptoms of PTSD.

In terms of demographic variables, male gender constitutes one reported risk factor in the development of appetitive aggression. Several studies have found that males show a higher degree of appetitive aggression than female participants (Hecker et al., 2012; Weierstall et al., 2011). Violence might therefore be more fascinating and appealing for men than for women (Elbert et al., 2010). We explored whether male genocide perpetrators would display higher levels of appetitive aggression compared to female perpetrators.

Several researchers have found appetitive aggression to be a predictor of the number of committed crimes in different African conflict regions. They reported that appetitive aggression was positively associated with perpetrated violent acts in Ugandan child soldiers (Elbert et al., 2010), Congolese ex-combatants (Hecker et al., 2012), and Rwandan genocide perpetrators (Weierstall et al., 2011). This study investigated the association between the number of committed offenses and appetitive aggression.
It has often been argued that religiosity might be considered a control system that prescribes socially acceptable behavior and cultural norms. Hence, adherence to religious principles might be expected to be negatively related to aggression and violent behavior. A large number of studies have found that religiosity might inhibit aggressive behavior (Hardy, Walker, Rackham, & Olsen, 2012; Landau, Björkqvist, Lagerspetz, Österman, & Gideon, 2002; Leach, Berman, & Eubanks, 2008). However, the association between appetitive aggression and religiosity has received no attention to date. We examined the relationship between religious coping and appetitive aggression and assumed, that high levels of positive religious coping would restrict appetitive aggression and that low levels of negative religious coping would boost this characteristic.

The second goal of this study was to examine levels of appetitive aggression and explore variables associated with appetitive aggression in perpetrators. We investigated the following correlates and thus potential predictors of levels of appetitive aggression: PTSD symptom severity, gender, number of committed types of crimes, and religious coping. In accordance with previous research, we hypothesized that appetitive aggression would be predicted by lower levels of PTSD symptom severity, male gender, higher levels of reported crimes, and higher levels of negative but lower levels of positive religious coping.

5.3 Method

5.3.1 Participants and procedure

Eligible participants were perpetrators of the Rwandan genocide who were at least 18 years old during the genocide in 1994 and who had experienced the genocide. They had all confessed genocide-related crimes and were all performing community service as part of their punishment in one of the following TIG camps in Kigali: Mont-Kigali (n = 53, 27%; total number of inmates, N = 300), Nduba (n = 60, 30%; total number of inmates, N = 235), Kinyinya (n = 56, 28%; total number of inmates, N = 145), Kayanga (n = 18; 9%; total number of inmates, N = 361), or Rusororo (n = 13, 6%; total number of inmates, N = 256). A total of 200 genocide perpetrators were interviewed for this study. Six individuals who were approached refused to participate in the trial. The sample consisted of 67 women (34%) and 133 men (66%); the mean age was 52.13 years (SD = 10.37; range = 35-80). As more men committed serious offenses during the genocide, more men than women have been convicted.
The random selection reflects this gender imbalance. Further characteristics of the sample can be drawn from Table 5.1.

Table 5.1  
Demographic characteristics in Rwandan genocide perpetrators.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>133</td>
<td>66.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Female</td>
<td>67</td>
<td>33.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Age</td>
<td>—</td>
<td>—</td>
<td>52.13</td>
<td>10.37</td>
</tr>
<tr>
<td>Highest school degree obtained</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No degree</td>
<td>143</td>
<td>71.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Primary school</td>
<td>53</td>
<td>26.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Secondary school</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>4</td>
<td>2.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>University</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Number of school years completed</td>
<td>—</td>
<td>—</td>
<td>2.86</td>
<td>2.79</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>122</td>
<td>61.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Protestant</td>
<td>50</td>
<td>25.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Islamic</td>
<td>3</td>
<td>1.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Adventist</td>
<td>21</td>
<td>10.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>No religion</td>
<td>1</td>
<td>0.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>156</td>
<td>78.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Widowed</td>
<td>32</td>
<td>16.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Other (single, separated, divorced)</td>
<td>12</td>
<td>6.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>TIG-Camp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nduba</td>
<td>58</td>
<td>29.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Kininya</td>
<td>56</td>
<td>28.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Mont Kigali</td>
<td>55</td>
<td>27.5</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Kayanga</td>
<td>18</td>
<td>9.0</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Rusororo</td>
<td>13</td>
<td>6.5</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. N = 200. TIG = Travail d'Intérêt Général.

The study was conducted in Kigali, Rwanda, in January and February 2011. It was approved by the University of Konstanz Ethical Review Board, the Rwandan Ministry of Science and Technology, and the Ministry of Internal Security/Rwanda Prisons Service. All participants were fully informed of the study’s procedure and aims, including voluntary participation, and provided us their signed, written informed consent. Participants were informed that the interviewers operated independently of the TIG system and that the information given would be kept strictly confidential. The diagnostic interviews were carried out by ten local psychologists. Participants were randomly assigned to the interviewers. All local raters had
already received extensive training in conducting structured diagnostic interviews and the various questionnaires had already been translated into Kinyarwanda as part of previous studies (Schaal, Jacob, Dusingizemungu, & Elbert, 2010, 2011). The Brief Religious Coping Scale (Brief RCOPE; Pargament, Smith, Koenig, & Perez, 1998) was translated into Kinyarwanda and blind-reverse translated by Rwandans. The interviews were individually carried out in private rooms at the TIG camps. Researchers informed TIG staff about the aforementioned inclusion criteria and perpetrators were randomly selected from a complete list of inmates. The interviews lasted about two hours. Participants received no financial compensation.

5.3.2 Measures

Interviewers obtained sociodemographic data from each respondent. Ethnicity was not directly asked, as it is illegal to collect this type of information in Rwanda. However, to assign the participants to a probable ethnic group, interviewers asked the following question: During the genocide, did you belong to the group, which had been persecuted? During the genocide, the Tutsi minority was the group that had been persecuted. Almost all participants \( n = 194, 97\% \) indicated that they did not belong to the group that had been persecuted during the genocide. The respective TIG personnel provided objective information on criminological characteristics (e.g., the crime for which interviewees had been convicted, the amount of time spent in prison, and in the TIG camp) on the basis of official documents. The interviewers measured potentially traumatic events using the modified Event Scale of Schaal and Elbert (2006), which assessed the lifetime exposure to 26 different potentially traumatic event types. Interviewers asked if the person had ever committed any of 16 different types of crimes (Offense Scale) in the past. This list has already been used in a previous study (Schaal et al., 2012). Participants were asked to indicate the most frightening event ever experienced (from the Event Scale or the Offense Scale) to which the rating of PTSD symptoms referred. Appetitive aggression was assessed using the Appetitive Aggression Scale (AAS; Weierstall & Elbert, 2011). The AAS is a 15-item scale carried out as a semistructured interview, which has also been successfully used and validated in East Africa (Hecker et al., 2012; Weierstall et al., 2011). Respondents rate each of the statements according to a 5-point scale ranging from 0 (totally disagree) to 4 (totally agree), representing increasing levels of agreement. The AAS refers to the appetitive perception of violence (e.g., “Is it exciting for you if you make an opponent really suffer,” “Once you got used to being cruel, did you want to be crueler and
crueler”). The appetitive aggression score was the sum of all 15 items (possible scores range from 0 to 60; Cronbach’s α = .88). We assessed current diagnostic status and symptom severity of PTSD using the PTSD Symptom Scale-Interview (PSS-I), in which possible scores of the PTSD sum score range from 0 to 51 (Cronbach’s α = .93; Foa & Tolin, 2000). Religious coping was assessed using the Brief Religious Coping Scale (Brief RCOPE; Pargament et al., 1998). The Brief RCOPE measures current positive (seven items) and negative (seven items) patterns of religious coping methods (“Wondered what I did for God to punish me” or “Tried to see how God might be trying to strengthen me in this situation” are examples of negative and positive religious coping items). Participants indicate the extent to which they currently use the particular religious method of coping on a 4-point Likert scale ranging from 0 (not at all) to 3 (a great deal). The positive religious coping score (Cronbach’s α = .84) and the negative religious coping score (Cronbach’s α = .77) was the sum of the respective seven items (possible scores range from 0 to 21). All diagnostic instruments were administered as clinical interviews.

5.3.3 Data analysis

The presented descriptive data are expressed as frequencies (%), mean scores, and standard deviations. As the appetitive aggression sum score is a count variable and is not normally distributed and heteroscedatic (Breusch Pagan Test, $\chi^2 = 30.21$, $p < .001$), multiple linear aggression was not appropriate. The association between appetitive aggression and different predictor variables was therefore investigated through negative binomial regression analysis. The following independent variables were simultaneously entered into the analysis: Gender, PTSD sum score, number of committed offenses, positive religious coping score, and negative religious coping score. The number of types of lifetime traumatic events was entered as a control variable to regulate confounding effects. Data analysis was conducted using version 20 of the IBM SPSS Statistics software. The reported statistical tests were one-tailed.

5.4 Results

5.4.1 Trauma exposure and posttraumatic stress disorder

Perpetrators were exposed to a wide range of potentially traumatic events. The mean number of reported types of lifetime potentially traumatizing events was 8.16 ($SD = 3.36$, range = 1-19) from a possible 26 (Event Scale). From the total sample, the majority of those interviewed
Study IV. Posttraumatic stress disorder and appetitive aggression in Rwandan genocide perpetrators

\((n = 147, 74\%)\) indicated an event from the Event Scale as the most frightening event they had ever experienced; 28 persons (14\%) indicated an event where they themselves had perpetrated violent acts as their most frightening event (Offense Scale); and 25 individuals (12\%) indicated that none of these events were experienced as frightening.

The mean of the PTSD sum score was \(M = 2.66\) (\(SD = 5.45\), range = 0-27). Diagnostic criteria for PTSD were met by 10 individuals (5\%). Of those who fulfilled diagnostic criteria for PTSD, the majority indicated an event they had experienced themselves as an etiological event for their PTSD symptomatology (\(n = 7, 70\%\)); one third (\(n = 3, 30\%\)) indicated a crime that they had committed as the event to which their symptoms referred.

5.4.2 Criminological characteristics and committed offenses

All of the perpetrators had been convicted. On average, 4.02 years had passed since their conviction (\(SD = 0.64\), range = 1-6 years). According to the official documents, the main offenses for which the perpetrators had been convicted included murder (\(n = 24, 12\%\)) and assisted murder (\(n = 145, 72\%\)). At the time of their conviction, the sentences ranged from 10 to 336 months (28 years) with a mean of \(M = 136.94\) months (11 years; \(SD = 61.90\)). Before doing community service in the TIG camps, perpetrators had spent an average of 16.68 months in prison (\(SD = 33.07\), range = 0-156 months). At the time of the interview, they had already spent an average 28.34 months in the TIG camps (\(SD = 12.19\), range = 4-62 months).

The most frequently reported offenses for males and females included “assisted murder” (\(n = 120, 90\%\) vs. \(n = 47, 70\%\)) and “violation of goods” (\(n = 84, 63\%\) vs. \(n = 17, 25\%\)). Figure 5.1 summarizes the offenses of males and females. Gender comparisons on the different offenses committed found significant group differences for the offenses “assisted murder”, \(\chi^2(1, N = 200) = 13.03, p < .001\); “violations of goods”, \(\chi^2(1, N = 200) = 25.45, p < .001\); “attack with weapon”, \(\chi^2(1, N = 200) = 35.97, p < .001\); “participation in massacre”, \(\chi^2(1, N = 200) = 13.17, p < .001\); “physical assault”, \(\chi^2(1, N = 200) = 16.09, p < .001\); “forced person to flee”, \(\chi^2(1, N = 200) = 8.98, p = .002\); “serious injury”, \(\chi^2(1, N = 200) = 8.17, p = .003\); “killing someone”, \(\chi^2(1, N = 200) = 8.17, p = .003\); and “kidnapping/captivity”, \(\chi^2(1, N = 200) = 6.41, p = .009\). Men reported significantly more types of committed offenses (\(M = 3.33, SD = 2.24\)) than women (\(M = 1.35, SD = 0.85\)), \(U = 1,740.50, p < .001\).
5.4.3 Appetitive aggression and correlates of appetitive aggression

The mean of the AAS score in the total sample was 10.49 (SD = 10.46, range = 0-60). Negative binomial regression analysis was used to analyze the relationship between the independent variables of the PTSD sum score, gender, number of committed offenses, and religious coping. The number of experienced lifetime traumatic events was entered as a control variable. The results of the negative binomial regression analysis are presented in Table 5.2. Male perpetrators displayed significantly higher levels of appetitive aggression than female perpetrators, $M = 12.82$ (SD = 11.60) versus $M = 5.87$ (SD = 5.31), respectively. Perpetrators who reported a greater number of past committed crimes were more likely to show higher levels of appetitive aggression. There was a negative correlation between current positive religious coping and appetitive violence, demonstrating that respondents with more
positive religious coping displayed lower levels of appetitive violence. Negative religious coping, in turn, was positively related to appetitive aggression. A greater number of past potentially traumatic lifetime events was associated with a higher AAS score. PTSD symptom severity did not significantly contribute to the prediction of the AAS score.

Table 5.2  
Negative binomial regression analysis with the Appetitive Aggression Scale (AAS) score as the dependent variable in Rwandan genocide perpetrators.

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$B_{AAS}$</th>
<th>$b_{SE_{AAS}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>- 0.27*</td>
<td>0.16</td>
</tr>
<tr>
<td>PTSD sum score</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Number of committed offenses</td>
<td>0.17***</td>
<td>0.04</td>
</tr>
<tr>
<td>Positive religious coping score</td>
<td>- 0.04*</td>
<td>0.02</td>
</tr>
<tr>
<td>Negative religious coping score</td>
<td>0.03**</td>
<td>0.01</td>
</tr>
<tr>
<td>Number of traumatic events</td>
<td>0.03*</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. $N = 200$. PTSD = posttraumatic stress disorder. #: Female coded as 0, male coded as 1. *$p < .05$. **$p < .01$. ***$p < .001$. 

### 5.5 Discussion

The purpose of this study was to investigate rates of PTSD and levels of appetitive aggression among Rwandan genocide perpetrators who were doing community work as part of their punishment (so-called TIG). Moreover, we aimed at examining predictors of appetitive aggression. In Rwanda, perpetrators who confess at their trials and who are found guilty of participating in the genocide receive a reduction of their sentences and serve all or part of their sentence doing community service. Generally, participants reported low rates of PTSD and high levels of appetitive violence. Higher levels of appetitive aggression were associated with male gender, greater number of past committed offenses, lower levels of positive and higher levels of negative religious coping, and a higher number of lifetime traumatic events. PTSD symptom severity was unrelated to levels of appetite aggression.

Previous studies in Rwanda have consistently reported high rates of PTSD among adult survivors, 8 to 13 years following the genocide, ranging from 25% to 51% (Brounéus, 2010; Pham et al., 2004; Schaal et al., 2011). A recent study with imprisoned perpetrators found that 14% fulfilled diagnostic criteria for PTSD (Schaal et al., 2012). The study reported here demonstrates that diagnostic criteria for current PTSD were met by 5% of the perpetrators. There are several possible explanations for this difference in PTSD rates. One potential
explanation is that perpetrators in the TIG camps reported exposure to fewer potentially traumatic events compared to the Schaal et al. (2012) study with imprisoned perpetrators. Another plausible explanation is that the enduring marginalization and stigmatization that people constantly experience in the prisons might aggravate their mental health problems. In contrast to prisoners, perpetrators in the TIG camps are reintegrated into society, which might better help them come to terms with their past.

Whereas some researchers have noted that the participation in intense violence against others might be considered to be potentially traumatizing and might also cause symptoms of PTSD (MacNair, 2002a; Staub, 2006), the results of this study indicate that few perpetrators (14%) identified a crime that they had committed as their most distressing event. Some authors have argued that humans might even enjoy violence and that violence itself might be fascinating and appealing for the perpetrators (Elbert et al., 2010; Nell, 2006). This concept has been defined as appetitive aggression (Elbert et al., 2010). Results of this study indicate that even though levels of appetitive aggression were high in perpetrators serving community work, they were lower than those reported in a previous study with imprisoned perpetrators (Weierstall et al., 2011). Although perpetrators in our study reported a wide range of committed offenses, contrary to the Weierstall et al. (2011) study, there were no perpetrators who had committed sexual offenses in this study population. In Rwanda, sexual offenders receive life imprisonment and are therefore excluded from the TIG system. It could be that the inclusion of sexual offenders might explain the elevated levels of appetitive aggression in imprisoned perpetrators. Moreover, it could be that the gradual reintegration into the community contributes to a reduction in appetitive aggression. Indeed, it has been reported that perpetrators who had spent more time in society after the genocide had lower levels of appetitive aggression (Weierstall et al., 2011).

As our second goal, we examined correlates of appetitive aggression. Levels of appetitive aggression were significantly associated with male gender, a greater number of committed offenses, lower levels of positive and elevated levels of negative religious coping, and higher lifetime trauma exposure. In contrast, the variable of PTSD symptom severity did not impact levels of appetitive aggression.

Several researchers have reported that an appetitive perception of violence might reduce the likelihood that a perpetrator develops severe mental health problems, including symptoms of PTSD (Elbert et al., 2010; Nadelson, 1992; Weierstall et al., 2011). Other studies have documented that involvement in atrocities is related to PTSD symptom severity (Beckham,
Feldman, & Kirby, 1998; Breslau & Davis, 1987; MacNair, 2002b; Marx et al., 2010) and that participation in killing in particular can be a significant predictor of PTSD, even after controlling for combat exposure (MacNair, 2002b; Maguen et al., 2010). Contrary to our hypothesis, we found no relationship between appetitive aggression and symptom severity of PTSD. Others have also reported that there is no simple association between appetitive aggression and PTSD (Hecker et al., 2012). In general, studies have revealed that the inverse association between appetitive aggression and symptoms of PTSD was only present as long as the number of traumatic events did not exceed a certain threshold and that this resilience against mental illness wanes as the exposure to traumatic stressors exceeds this threshold (Weierstall et al., 2012b).

We found that the male gender is a significant predictor of appetitive aggression. Therefore, the results of this study confirm the findings of previous studies that men are more likely than women to perceive violence as fascinating and appealing (Elbert et al., 2010; Hecker et al., 2012; Weierstall et al., 2011). This is in line with Nell (2006), who proposed a strongly male-gendered human blood lust. Evolutionary perspective supports the assumption that men, especially, display an innate disposition of appetitive aggression (Elbert et al., 2010; Nell, 2006). It has been argued that perpetrating violence and being cruel offer an evolutionary advantage and are associated with gratification in perpetrators (Nell, 2006). According to O’Neil and Harway (1997), male violence could be viewed as socialized components of the gender norms, which promote success and power and often reflect a method to restore pride and balance. The state of manhood could be considered as a precarious social status that continuously needs to be maintained (Vandello & Bosson, 2013). The anxiety in males over their gender status and the uncertainty about their ability to demonstrate manhood status might motivate a variety of maladaptive behaviors, including aggression (Vandello & Bosson, 2013).

In this study, those perpetrators who reported a greater number of different types of committed offenses had higher levels of appetitive aggression than those who reported fewer types of perpetrated violence. This finding aligns with previous studies that showed that the types of perpetrated violence were a significant predictor of appetitive aggression (Hecker et al., 2012; Weierstall et al., 2011). According to Holowka et al. (2012), the association between aggression and participation in atrocities - defined as behavior that people would consider excessively violent or brutal - is fully mediated by combat exposure.
Religion has been described as an impulse control system that prescribes socially acceptable behavior and cultural norms. Positive and negative religious coping styles have been proposed as two independent methods (Pargament et al., 1998). As expected, our study found that positive religious coping was a protecting factor for appetitive aggression and negative religious coping reinforced appetitive perceptions of violence. The participants with the highest levels of appetitive aggression were those who had high scores of negative religious coping and low scores of positive religious coping. That religiosity has a positive impact on aggression was stressed by Landau et al. (2002), who reported that secular respondents scored higher on aggressive behavior than their religious counterparts. There are several possible explanations for this relationship. One potential explanation is that religiosity might foster moral development. There is evidence that moral identity might explain the association between religious commitment and aggression (Hardy et al., 2012). Although it could be possible that positive religious coping facilitates the formation of moral processes and therefore protects against aggression, another plausible (and causally opposite) explanation might be that appetitive aggression increases negative religious coping. Such a relationship between killing and changes in moral injury and spirituality or religiosity was reported by Fontana and Rosenheck (2004).

In line with existing research, trauma exposure was found to increase the risk for appetitive aggression: Those perpetrators who reported a greater number of types of experienced traumatic events reported higher levels of appetitive aggression than those who reported fewer trauma experiences. Evidence on this relationship between trauma exposure and appetitive aggression has been reported by other researchers (Elbert et al., 2010; Weierstall et al., 2011, 2012b). It is possible that negative feelings like hatred, anger, and the desire to take revenge resulting from self-experienced traumatic events play a role in this process. According to Holowka et al. (2012), exposure to heavy combat should be considered not only a risk factor for physical or mental illness, but also an important risk factor for the commitment of violent atrocities.

5.5.1 Limitations

This study has a number of limitations. Due to the cross-sectional and retrospective nature of the design, it is impossible to establish causal relationships between the different variables. Moreover, socially desirable responses can never be completely ruled out. However, the participation of respondents was anonymous and questioning took place in an explicit
research context, thereby reducing the likelihood of a strong bias. Finally, due to the retrospective self-reporting, response and memory biases are possible. Participants are not representative of all perpetrators. Therefore, findings should not be generalized to all Rwandan perpetrators, as the sample included perpetrators who all had confessed their crimes and did community work as part of their punishment. Moreover, the number of participants was not proportional to the total number of inmates in each camp. The sample did not include perpetrators who had committed sexual offenses.

5.5.2 Conclusion

In conclusion, this study shows that Rwandan genocide perpetrators who will be released into society after having served their community work display generally low rates of current PTSD but high levels of appetitive aggression. This finding suggests that there is a need for community-based interventions, which include treatment elements to reduce levels of appetitive aggression and to restore psychological functioning. A recent pilot study with former Congolese ex-combatants demonstrated that symptoms of PTSD and levels of appetitive aggression can be successfully treated in perpetrators of mass violence (Hermenau, Hecker, Schaal, Maedl, & Elbert, 2013). Such effective treatments should be part of reintegration programs of perpetrators to facilitate a peaceful coexistence.
6 General discussion

This thesis comprises four studies, which investigate reconciliation, ethnic discrimination, mental stress, appetitive aggression, and religion as variables for peaceful coexistence in post-genocide Rwanda. In conclusion, outcomes of study I are (1) a validated reconciliation questionnaire, (2) empirical data on the expression of readiness to reconcile in Rwanda, and (3) the finding, that group-belonging (confessed perpetrators vs. community residents), persecution during genocide (having vs. not having been persecuted), PTSD symptom severity, and positive and negative emotions towards God are predictors of the readiness to reconcile. Study II provides (1) prevalence rates of PTSD, syndromal depression, and syndromal anxiety in a Rwandan community sample and (2) a structural equation model, which highlights that gender, persecution during genocide, readiness to reconcile, and centrality of religion are correlates of mental stress. It was further found, that positive and negative religious functioning are indirectly associated with mental stress. Study III shows, that non-persecuted Rwandans implicitly associate Tutsis with privilege and not with victimization and that perception of Tutsis is independent of readiness to reconcile. Outcomes of study IV are (1) prevalence of PTSD and levels of appetitive aggression in confessed genocide perpetrators (TIGists) and (2) the finding, that gender, number of crimes committed, and religious coping are predictors of appetitive aggression. Subsequently, practical implications of the results are discussed.

6.1 Practical implications for reconciliation and ethnic discrimination in Rwanda

Reconciliation is a central requirement for sustainable peace building. As outlined in the general introduction (see section 1.2.1), the Rwandan government has undertaken numerous measures to foster reconciliation after the genocide. At the same time, ethnic discrimination is still part of political and societal realities. Study I shows, that readiness to reconcile is modestly expressed in Rwanda. It was further found, that social groups (confessed genocide perpetrators vs. community residents; persons, who were persecuted during the genocide vs. persons, who were not persecuted during the genocide) differ concerning their readiness to reconcile. These findings imply, that needs and criteria for reconciliation should be the issue of a broad societal dialogue, bringing members of the different groups together. It is advised to design respective societal dialogue as a neutrally moderated process, which is accompanied
by a general education on the development of genocide and a common investigation of the roots of the Rwandan genocide. This is different from Gacaca, which was primarily judicial and focusing on the happenings of 1994. The dialogue should foster empathy on both sides and address the identified key-elements of reconciliation “trust and cohesion” and “equity and equality”. Respective interventions which are adapted to the Rwandan context exist and have been found to strengthen a positive orientation towards the other group (Freedman, Weinstein, Murphy, & Longman, 2011; King & Sakamoto, 2015; Staub, 2006, 2014). However, the implementation of corresponding programs has become very restricted, almost impossible in the last years. Policy in Rwanda is significantly marked by the RPF’s one-identity-doctrine, in which unity and reconciliation are represented as inseparable components of peaceful coexistence in post-genocide Rwanda. Therefore, each kind of ethnic differentiation is legally prohibited, including even mentioning ethnic labels. The strict implementation of this policy undermines an open and controversial societal dialogue of the prevalent ethnic groups.

Results of study III provide empiric evidence that - despite the official abolishment of ethnic labels - inter-ethnic bias still exists in non-persecuted persons and, that inter-ethnic bias is independent of readiness to reconcile. These findings imply that openly discussing ethnic discrimination would not compromise reconciliation. Instead, respective discussions would allow to name ethnic stereotypes and - at best - to correct them. Contrary, a continuing suppression of inter-ethnic dialogue by a Tutsi-dominated government risks, that the stereotype of Tutsi-favoritism is maintained and even reinforced in non-persecuted persons (Reyntjens, 2004, 2006; Straus 2014). Each kind of ethnic deprivation will certainly increase inter-ethnic bias and thereby poses a risk for stable reconciliation and lasting peace in Rwanda.

### 6.2 Practical implications for mental stress in Rwanda

Results of study II show that elevated rates of PTSD, syndromal depression, and syndromal anxiety are still common in Rwandan community residents. Study IV provides evidence, that five percent of the confessed genocide perpetrators meet diagnostic criteria for PTSD. Untreated, psychological and psychiatric troubles can develop into increasingly complex structures making adequate diagnoses and treatment difficult (Hédon, 2016). It can hinder the individuals concerned in finding and performing work, in fulfilling their family commitments, and in participating in social live. Recent research in Rwanda shows, that parental psychopathology can also impact descendants’ mental health (Rieder & Elbert, 2013).
Corresponding and in line with previous research, it was found in study I and in study II, that mental stress is also negatively associated with the readiness to reconcile in Rwanda. As untreated mental stress can have a long-lasting negative effect for society and thereby impede peaceful coexistence, it is promising, that Rwanda’s psychiatric and psychosocial infrastructures have significantly improved since the end of the genocide (Ng & Harerimana, 2016). Evidence-based trauma therapy has been successfully evaluated in Rwanda and is available for the individual treatment of multiple and complex trauma (Schaal, Elbert, & Neuner, 2009; Jacob, Neuner, Maedl, Schaal, & Elbert, 2014). As a consequence of mass violence, society as a whole is shattered. Therefore, individual clinical approaches should get along with community-based interventions to promote healing (De Jong, 2002; Saul, 2014). Respective approaches have been developed and successfully evaluated in Rwanda, as well (Pearlman 2013; Staub, et al. 2005). However, as outlined in the general introduction (see section 1.2.2), psychiatric and psychosocial infrastructures remain insufficient in the post-genocide state. On the one hand, the number of mental health experts and clinics is not adequate. On the other hand, access to proper medical care, including mental health services, is often hampered by low education and limited resources. This is especially true for the most vulnerable groups of society, identified in study II as persons, who have been persecuted during the genocide and women.

It was hypothesized, that in Rwanda, with its highly religious culture, religion is used to cope with mental stress. Corresponding, it was found in study II, that higher levels of mental stress are associated with higher centrality (and thus religious practice) in Rwandan community residents. Results further show, that an intensified religious practice correlates with a reduced level of mental stress. In addition, findings of study II provide evidence that the quality of religious functioning (positive vs. negative) indirectly impacts mental stress. In the case of positive religious functioning, the association with mental stress is mediated by readiness to reconcile and by centrality. In the case of negative religious functioning, it is mediated by readiness to reconcile. These findings demonstrate (1) that Rwandans turn to religion in order to cope with psychological troubles and (2) that - depending on the quality of religious functioning - religion can unfold a positive as well as a negative indirect effect on recovering from mental stress.

There is a diverse religious landscape in Rwanda, including the Catholic church, various Protestant congregations, other forms of Christianity, and Islam. Many followers incorporate traditional elements of African folk belief into their religious practice. Only about two percent of the Rwandan population classify themselves as atheists or agnostics (Sousa, 2017). With
regard to mental health, the Church is an important player in African countries. For example, Rwanda’s first and best known Psychiatric Hospital Caraes-Ndera was founded and is managed by a Christian congregation. In the light of the found associations between the quantity and the quality of religion and mental stress, it is advised, to identify and to carefully monitor religious figures and spiritual leaders in the development of the Rwandan mental health system. On the one hand, interventions should include identification, education, and training of relevant religious persons in the diagnoses and treatment of mental disease. On the other hand, it is proposed to sensitize this group of persons on the impact of the quality of religious belief and thus of the contents of their teaching on mental stress. Fostering positive religious functioning may help their followers to reduce mental stress, whereas a focus on negative religious functioning might have the opposite effect.

In addition, it is recommended, to talk about the contents of individual religious belief - as well as about the associated topics of individual religious practice and readiness to reconcile - in therapy and counseling provided as part of the state-run mental health care. In this way, it would become possible to identify and - as the case may be - to work on dysfunctional religious functioning. In the same way, positive religious functioning could be used actively as support for recovering from mental stress. In Rwanda, traditional medicine based on the use of plants, accompanied with invocation and sorcery coexists with modern medicine (Republic of Rwanda Ministry of Health, 2011). Traditional medicine men are frequently consulted when mental health problems occur. In order to avoid, that traditional medicine competes with evidence-based therapeutic efforts it is suggested, to include invocation and sorcery in the therapeutic discussion as well.

6.3 Practical implications with regard to appetitive aggression in confessed genocide perpetrators

Genocide perpetrators, who are living in TIG-camps, have confessed their genocide related crimes, are serving community work, and are receiving civic education. However, in study IV, substantial levels of appetitive aggression were found in TIGists. Further, results provided evidence that five percent of the confessed genocide perpetrators met the diagnostic criteria for PTSD. Expressed levels of appetitive aggression suggest that released TIGists might be at risk to readopt violent behavior after their release; in the long term, mental stress in ex-combatants often goes along with unemployment, familial problems, delinquency, substance abuse, and homelessness (Multi-Country Demobilization and Reintegration Program, 2006). Against this backdrop, findings of study IV underline the necessity to accompany the release
of TIGists into society with specific reintegration programs, which are designed to restore psychological functioning. A recommendable approach for the work with TIGists is Narrative Exposure Therapy for Forensic Offenders Rehabilitation (FORNET, Elbert, Hermenau, Hecker, Weierstall, & Schauer, 2012; Hecker, Hermenau, Crombach, & Elbert, 2015). It was found, that FORNET reduced delinquency in former street children in Burundi (Crombach & Elbert, 2014) and PTSD symptoms in Congolese ex-combatants (Hermenau, Hecker, Schaal, Maedl, & Elbert, 2013; Köbach, Schaal, Hecker, & Elbert, 2017).

Reintegration training programs in Rwanda are primarily tailored for men. For example, vocational training focus on typical male professions like carpentry or mechanics. Topics which are relevant for female ex-combatants, like women’s health issues, money management, or family management are largely missing. In the development of reintegration programs, it is therefore recommended to take the special needs of female ex-combatants into account (Multi-Country Demobilization and Reintegration Program, 2008). In study IV it was found, that male gender is a risk factor for elevated rates of appetitive aggression. Therefore, it is advised to address appetitive aggression in training programs with male ex-combatants. However, in reintegration programs with their female counterparts the intensity and the extent to which this topic is treated should be diminished. As delinquency has been identified as another risk factor for appetitive aggression, it is further advised, to determine the length of individual participation in respective programs corresponding to the sentence of each individual.

Results of study IV show, that religious coping is a significant correlate of appetitive aggression. While negative religious coping is associated with elevated rates of appetitive aggression, positive religious coping is associated with lower levels of appetitive aggression. Therefore, it is suggested to address religion and religious coping in training programs provided while in detention, as well as in reintegration programs provided after release. In this way, dysfunctional religious convictions could be identified and worked on. At the same time, positive religious convictions could be strengthened and systematically used to reduce appetitive aggression.

Contrary to previous research (Hecker et al. 2013; Weierstall et al., 2011, 2012b, 2013; Weierstall, Huth, Knecht, Nandi, & Elbert, 2012a) no relation was found between PTSD symptom severity and appetitive aggression in study IV. Recent research suggests, that the relation between PTSD symptom severity and appetitive aggression depends on the number of traumatic events experienced (Weierstall et al., 2012b). Further research is needed to gain a
better understanding of associations between these variables, as well as of the role of other variables, which could mediate the relation between PTSD and appetitive aggression.

6.4 Practical implications with regard to religion in Rwanda

The results of the present research provide evidence, that religion is an important correlate of readiness to reconcile (study I and study II), mental stress (study II), and appetitive aggression in confessed genocide perpetrators (study IV). Therefore, the role of religion should be carefully taken into account when discussing peaceful coexistence in post-genocide Rwanda.

In order to understand how religion impacts the outlined variables, it is important to consider the quality of religious belief. In the psychology of religion, a positive and constructive use of religion has been differentiated from a negative and destructive use of religion (Bergin, 1983; Donahue, & Nielsen, 2005; Geyer & Baumeister, 2005; Pargament, et al. 1998; Seybold, & Hill, 2001). Corresponding it was found in study I and study II, that positive emotions towards God and positive religious functioning are associated with a higher readiness to reconcile. Contrary, negative emotions towards God and negative religious functioning were associated with a lower readiness to reconcile. Results of study II further show, that mediated by readiness to reconcile and centrality - positive religious functioning is associated with lower levels of mental stress, while mediated by readiness to reconcile - negative religious functioning is associated with elevated levels of mental stress. Study IV provides evidence, that positive religious coping predicts lower levels of appetitive aggression, while negative religious coping predicts higher levels of appetitive aggression in confessed genocide perpetrators.

In Rwanda, diverse and numerous religious denominations exist and are often the first address for believers, who search for orientation, advice, and help when struggling with life. Due to the powerful direct impact of the quality of religion on the readiness to reconcile, it is recommended to carefully monitor religious programs of the various denominations, as well as the activities of independent religious figures, such as healers or medicine men. A “collective false consciousness” (Williamson, 2014, Title) based on religious belief facilitated a societal climate which made genocide possible (see also section 1.2.4). Therefore, negative religious manipulation should be severely restricted. At the same time, religious leaders, who promote positive religious functioning, could play an active and relevant role in the Rwandan reconciliation process. An example for the involvement of religious leaders in a national
reconciliation process is found in South Africa, where the Truth and Reconciliation Commission was chaired by the priest Desmond Tutu.

With regard to public health, it is proposed to actively involve relevant religious persons as well. As previously discussed (see section 6.2) it is recommended, to identify and to train these persons in the diagnosis and treatment of mental disease. At the same time, mental health professionals should not hesitate to address religion and readiness to reconcile in therapy and counseling; for example, in order to detect dysfunctional religious doctrine and to use the potential of positive religious convictions. Furthermore, religion should be explicitly addressed in reintegration programs for genocide perpetrators. In this way, religious doctrine, which is used to justify ethnic discrimination and inter-ethnic violence (see section 1.2.4), could be detected, discussed, and corrected. On the other hand, positive religious functioning could be systematically used in order to reduce appetitive aggression (see also section 6.3).

6.5 General conclusion

This thesis aimed at the investigation of readiness to reconcile, ethnic discrimination, mental stress, appetitive aggression, and religion in Rwanda. This was done with the goal, to determine the expression of these variables in post-genocide Rwanda, as well as to understand interdependencies between them. Furthermore, correlations with other relevant variables, like gender or persecution during genocide were examined. The results provide evidence that the specified variables are relevant for peace building in the post-genocide state, and that many of them are closely connected. The findings, that readiness to reconcile is only modestly expressed, that an inter-ethnic bias persists in non-persecuted persons, that levels of mental stress remain very high, and that there are substantial levels of appetitive aggression in confessed genocide perpetrators show, that peace in Rwanda is fragile. Various measures to foster peaceful coexistence in the African country have been discussed. Thereby religion should receive special attention. Religious manipulation in the highly religious developing country Rwanda is simple. All the more, it is essential to assure, that the strong potential of religion is not misused to undermine peace efforts. Instead, religion in Rwanda could be used to positively strengthen readiness to reconcile and mental health, as well as to reduce appetitive aggression in the post-genocide state.
7 Record of achievement

In the following paragraph the four articles are listed with their authors, their current status of publication, and my own research contribution. Additional contributors, who actively supported this research, are named in the acknowledgments.

**Study I**  
Construction, application, and validation of a reconciliation questionnaire in a sample of Rwandans

Authors  
Lale Heim and Susanne Schaal

Status  

Own research contributions:
- Development of the original research questions
- Participation in the study design
- Participation in the study’s coordination
- Participation in the interviewer training
- Supervision of a substantial part of the clinical interviews
- Performance of the statistical analyses
- Drafting of the manuscript

**Study II**  
Rates and predictors of mental stress in Rwanda: Investigating the impact of gender, persecution, readiness to reconcile, and religiosity via a structural equation model

Authors  
Lale Heim and Susanne Schaal

Status  

Own research contributions:
- Development of the original research questions
- Participation in the study design
- Participation in the study’s coordination
- Participation in the interviewer training
- Supervision of a substantial part of the clinical interviews
- Performance of the statistical analyses
- Drafting of the manuscript

**Study III**  Still not one people: Implicit ethnic perception in Rwanda

Authors  Lale Heim, Thomas Elbert, Bernhard Baltes-Götz, and Susanne Schaal


Own research contributions:
- Participation in the development of the original research question
- Conduction of the study design
- Programming of the computer experiment
- Participation in the study’s coordination
- Participation in the interviewer and translator training
- Supervision of a substantial part of the interviews
- Conduction of the computer experiments
- Performance of the statistical analyses
- Drafting of the manuscript

**Study IV**  Posttraumatic stress disorder and appetitive aggression in Rwandan genocide perpetrators

Authors  Susanne Schaal, Lale Heim, and Thomas Elbert

Status  published 2014 in the *Journal of Aggression, Maltreatment & Trauma*, 23(9), 930-945, doi:10.1080/10926771.2014.956916

Own research contributions:
- Participation in the study’s coordination
- Participation in the interviewer training
- Supervision of a substantial part of the clinical interviews
- Comments on the manuscript
8 References


References


References


