

Patterns of Wildlife Value Orientations at
Ruhija Sector, Bwindi Impenetrable National
Park, Uganda: Implications for Mountain
Gorilla (*Gorilla beringei beringei*)
Conservation

Alexandra Lebron

Oxford Brookes University

September 2015

Dissertation Course Name: Module P20107	
Title: Patterns of Wildlife Value Orientations at Ruhija Sector, Bwindi Impenetrable National Park, Uganda: Implications for Mountain Gorilla (<i>Gorilla beringei beringei</i>) Conservation	
Student Number: 14000313	Surname: Lebron
	Other Names: Alexandra
Course for which acceptable: MSc Primate Conservation	
Date of Submission: 04 September 2015	

Word Count: 15,744

This dissertation is submitted in part fulfilment of the regulations for an MSc degree in Primate Conservation.

Oxford Brookes University

Statement of originality

Except for those parts in which it is explicitly stated to the contrary, this project is my own work. It has not been submitted for any degree at this or any other academic or professional institution.

.....
Signature

.....
Date

Regulations Governing the Deposit and Use of Oxford Brookes University Projects/ Dissertations

- 1.The “top” copies of projects/dissertations submitted in fulfilment of programme requirements shall normally be kept by the School.
- 2.The author shall sign a declaration agreeing that the project/ dissertation be available for reading and photocopying at the discretion of the Dean of School in accordance with 3 and 4 below.
- 3.The Dean of School shall safeguard the interests of the author by requiring persons who **consult** the project/dissertation to sign a declaration acknowledging the author’s copyright.
- 4.Permission for any one other than the author to reproduce or photocopy any part of the dissertation must be obtained from the Head of School who will give his/her permission for such reproduction on to an extent which he/she considers to be fair and reasonable.

I agree that this dissertation may be available for reading and photocopying at the discretion of my Dean of School in accordance with regulations 3 and 4 above.*

.....
Signature

.....
Date

*The underlined words may be deleted by the author if he/she so wishes.

ABSTRACT

The critically endangered mountain gorillas (*Gorilla beringei beringei*) of East Africa face significant anthropogenic threats as a result of their proximity to expanding human populations. Bwindi Impenetrable National Park (BINP), home to roughly half of the world's mountain gorillas, has seen much success in gorilla tourism as an economic driver of its conservation efforts. However, tense relations between Park management and local communities still exist in many areas around BINP, threatening to destabilise the conservation progress it has made over the last two decades. To determine the extent and possible causes of this at one of the Park's tourism sites, qualitative data were collected in the communities of Ruhija sector on the eastern edge of BINP. Data were also collected on the value local residents associate with mountain gorillas. There was much variation in responses based on level of knowledge and familiarity with the gorillas. Feedback from this group was compared with responses from Eco-tourists about their own wildlife value orientations to provide a framework for assessing the potential impacts of experiential learning on community-supported conservation. It was determined that greater exposure to and education about local wildlife positively influences the ideas, attitudes and value associations of community members living next to the National Park. The researcher explored opportunities for the practical application of these findings in conservation objectives at BINP.

ACKNOWLEDGEMENTS

This dissertation was made possible by the Institute for Tropical Forest Conservation (ITFC), which provided me with the guidance and tactical support necessary to conduct this MSc research. I would particularly like to thank ITFC director Dr. Robert Bitariho for collaborating with this project, as well as staff and researchers from ITFC, MPI and UWA who gave important contributions to the study, namely: Moses Akantorano, Peter Kabano, Emily Turinawe and James Busiku. I am greatly indebted to my translator in the field, Happy Kyoheirwe, for her local insights and facilitation of community interviews. I am also thankful to the managers of tourist accommodations in Ruhija-canteen, who permitted me access to their lodges to interview tourist participants; and especially to the visiting tourists and residents of Ruhija who graciously allowed me to interview them, temporarily interrupting their daily routines and vacations. I would also like to extend my gratitude to the Uganda Wildlife Authority and the Uganda National Council for Science and Technology for their approval of this study.

I am grateful to Oxford Brookes University for the opportunity to participate in this MSc and to the course staff for their eagerness to provide help when needed. Thank you to Magdalena Svensson and Prof. Anna Nekaris for their additional support and to Prof. Giuseppe Donati for his time and patient assistance with statistics. Special thanks goes to my supervisor, Prof. Catherine M. Hill, whose continued advice and support throughout the process was much appreciated. Lastly, I want to thank my family for their unending love and constant encouragement to pursue my dreams.

TABLE OF CONTENTS

ABSTRACT.....	i
ACKNOWLEDGEMENTS.....	ii
TABLE OF CONTENTS.....	iii
LIST OF FIGURES AND TABLES.....	v
Figures.....	v
Tables.....	v
ABBREVIATIONS.....	vi
CHAPTER 1. INTRODUCTION.....	1
1.1 The Influence of Ecotourism.....	2
1.1.1 Limitations of the Current Ecotourism Model.....	3
1.1.2 Wildlife Valuation.....	4
1.2 Improving Park-Community Relations.....	5
1.2.1 An Acrimonious History.....	5
1.2.2 Current System of Revenue-Sharing at BINP.....	7
1.2.3 Local Conservation Education.....	8
1.3 The Study Site.....	10
1.3.1 Biodiversity Hotspot.....	10
1.3.2 Gorilla Tourism.....	11
1.3.3 Site Selection.....	12
1.4 Overall Research Goal.....	12
1.5 Project Aims.....	12
CHAPTER 2. METHODOLOGY.....	13
2.1 Approach and Research Design.....	13
2.2 Data Collection.....	13
2.2.1 Local Resident Participants.....	14
2.2.2 Eco-tourist Participants.....	17
2.3 Ethics and Informed Consent.....	18
2.4 Data Analysis.....	19
2.4.1 Pearson's Chi-Square.....	22
2.4.2 Spearman's Rank Correlation.....	22
2.5 Limitations of the Study.....	23
CHAPTER 3. RESULTS.....	25
3.1 Characteristics of Study Participants.....	25
3.1.1 Age Group.....	26
3.1.2 Gender.....	27
3.1.3 Education Level.....	27
3.1.4 Occupation.....	27
3.1.5 Distance from Park Boundary.....	28
3.2 Local Residents' Attitudes Toward BINP.....	28
3.2.1 Current Perceptions of the Park by Demographic Factors.....	28

3.2.2 Suggestions for Future Improvement.....	34
3.3 Comparing Local and Tourist Ideas about Gorillas.....	39
3.3.1 Value Associations.....	39
3.3.2 Indication of Ideological Shift or Learned Information.....	46
3.3.3 Local Interest in Gorillas.....	46
CHAPTER 4. DISCUSSION.....	48
4.1 Relationship between Ruhija Communities and BINP.....	48
4.1.1 Current Local Attitudes toward the Park.....	48
4.1.2 Local Suggestions for Improvement.....	50
4.2 Community and Tourist Ideas about Gorillas.....	53
4.2.1 Value Associations.....	53
4.2.2 Valuation of Mountain Gorillas among Tourists.....	54
4.2.3 Valuation of Mountain Gorillas among Residents.....	56
4.2.4 Potential Conservation Impact of Experiential Learning.....	58
4.2.5 Capitalising on Local Curiosity and Interest in Gorillas.....	62
CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS.....	65
5.1 Conclusions.....	65
5.2 Recommendations for Future Planning.....	66
REFERENCES.....	68
Appendix 1: LR Interview Questions.....	75
Appendix 2: ET Interview Questions.....	76
Appendix 3: Daily Work Plan.....	77
Appendix 4: Monthly Work Plan.....	78
Appendix 5: LR Information Sheet.....	79
Appendix 6: ET Information Sheet.....	81
Appendix 7: Consent Form.....	83
Appendix 8: Ethics Approval Form.....	84

LIST OF FIGURES AND TABLES

Figures

Figure 1.1: The endemic range of <i>Gorilla beringei beringei</i>	1
Figure 2.1: Map of the local area where interviews were carried out.....	15
Figure 2.2: Photographs of the research team collecting demographic data from a local resident (left) and an Eco-tourist (right) during the pre-interview phase of the SSI.....	16
Figure 2.3: General procedure used for analysing this study's qualitative data.....	21
Figure 3.1: Local attitudes towards Bwindi Impenetrable NP according to age group.....	29
Figure 3.2: Local attitudes towards Bwindi Impenetrable NP according to gender.....	30
Figure 3.3: Local attitudes towards Bwindi Impenetrable NP according to level of education.....	31
Figure 3.4: Local attitudes towards Bwindi Impenetrable NP according to occupation.....	32
Figure 3.5: Local attitudes towards Bwindi Impenetrable NP according to village of residence.....	33
Figure 3.6: Local attitudes towards Bwindi Impenetrable NP based on proximity to the Park boundary.....	33
Figure 3.7: Types of Value Assigned to Mountain Gorillas According to User Group (N=87).....	43
Figure 3.8: Types of Value Residents Assign to Mountain Gorillas Based on Level of Familiarity (N=64).....	45

Tables

Table 3.1: Characteristics of LR study participants expressed in frequencies and percentages (N=64).....	26
Table 3.2: Community Responses for How the Park can Improve (N=64).....	34

ABBREVIATIONS

AWF: African Wildlife Foundation

BINP: Bwindi Impenetrable National Park

CCR: Community Conservation Ranger

DRC: Democratic Republic of Congo

ET: Eco-tourist

FNR: Foreign Non-Resident

IGCP: International Gorilla Conservation Programme

ITFC: Institute for Tropical Forest Conservation

IUCN: International Union for Conservation of Nature

LC: Local Council

LR: Local Resident

NP: National Park

PA: Protected Area

SPSS: Statistical Package for the Social Sciences

SSI: Semi-Structured Interviews

TRS: Tourism Revenue-Sharing

UGX: Ugandan Schilling

UNESCO: United Nations Educational Scientific and Cultural Organisation

USD: United States Dollar

UWA: Uganda Wildlife Authority

WWF: World Wildlife Foundation

CHAPTER 1. INTRODUCTION

The mountain gorillas of East-Central Africa (*Gorilla beringei beringei*), a subspecies of eastern gorillas (*Gorilla beringei*), have remained listed as Critically Endangered on the IUCN Red List since 1996. Current population estimates suggest there are 880 mountain gorillas remaining (IUCN, 2015). Endemic to Uganda, Rwanda and the Democratic Republic of Congo, wild and habituated mountain gorillas are exclusively found in: Virunga National Park (DRC); Volcanoes National Park (Rwanda); Mgahinga Gorilla National Park (Uganda); and Bwindi Impenetrable National Park (Uganda). All except BINP are included in the Virunga Conservation Area (see Figure 1.1).



Figure 1.1: The endemic range of *Gorilla beringei beringei* (adapted from <http://www.eva.mpg.de/primat/research-groups/gorillas/projects.html> and <http://www.uganda-safaris-tours.com/national-parks/bwindi-national-park.html#.VXJPn2RViko> on 01 June 2015)

Despite this endangered species' protected status within national parks, mountain gorillas face significant anthropogenic threats ranging from illegal poaching and mining activities to increased human encroachment (IUCN, 2015; Junker et al., 2012; Miles et al., 2005). Regrettably, the geographic region where these elusive animals occur has been historically prone to political instability and violence and, as a result, such pressures have been further exacerbated (Draulans & Van Krunkelsven, 2002; Hamilton et al., 2000; Plumptre et al., 1997).

1.1 The Influence of Ecotourism

To combat the challenges humans have long posed to the survival of this charismatic but imperilled great ape, economic returns from gorilla-related tourism were seen as the most promising solution. Over the last two decades, ecotourism has proven to be a generally effective strategy in garnering local support for the conservation of mountain gorillas and their natural habitat (Macfie & Williamson, 2010). Gorilla trekking programs in Rwanda and Uganda, in particular, have attracted high volumes of Western tourists who have provided invaluable foreign currency for the local and national economies of these countries.

These programs have been so successful, in part, for their ability to evoke empathy and feelings of moral responsibility among visitors. The unique experience can be described as experiential environmental learning, which allows for deeper understanding and appreciation of the natural world and its wildlife by experiencing it. This is contrasted with lectured conservation education strategies. Although the latter has its own merits, there have been significant contributions from the academic community to suggest the benefits of experiential learning for conservation progress (Sicotte & Uwengeli, 2002; Sowards, 2006). Russon and Susilo (2014), for example,

concluded that orang-utan rehabilitation centres in Borneo and Sumatra may do less for directly financing conservation, and more for environmental education and awareness for both local and foreign tourists. They indicate that the greatest significance of these centres may be creating an environment where visitors can be exposed and encouraged to appreciate the intrinsic value of the species.

1.1.1 Limitations of the Current Ecotourism Model

In the case of mountain gorillas, opportunities for experiential learning through ecotourism are typically only afforded to those able to pay the steep prices of gorilla trekking. The Uganda Wildlife Authority (UWA), who manages Bwindi Impenetrable National Park (Bwindi hereafter), periodically offers promotional discounted permits for tourists. However, the normal fees to trek Bwindi's mountain gorillas and spend one hour among them are as follows: 600 USD for foreign non-residents; 500 USD for foreign residents; and 250,000 UGX for citizens of East African member states (UWA, 2014), the equivalent of approximately 69 USD at the current international exchange rate. Many national residents of Uganda, particularly those living in rural communities near protected areas, face significant poverty and socioeconomic constraints, lacking the disposable income necessary for tourism. A report on household surveys in 2010 reported that Ugandan citizens, on average, earn less than \$3 per day, with a typical resident of rural western Uganda making slightly less than the national average (Uganda Bureau of Statistics, 2010).

With the exception of local guides, porters and perhaps those who have previously engaged in poaching, many residents of Bwindi's contiguous communities are unlikely to have ever seen a gorilla firsthand, unless due to chance encounter or within a negative context such as crop destruction. Preferential access to this luxury

tourism product has largely restricted the opportunity for awareness and sensitivity through gorilla trekking to the foreign market, effectively marginalising the people most impacted by the Park's conservation efforts. The centralised focus on the international market is evident in Ugandan marketing strategies, as well as in the diction residents employ to discuss tourism (Lepp & Harris, 2008). This traditional model of ecotourism as a Western construct can be seen in other developing African nations where rich biodiversity and unique tourism products abound, but recently it has been increasingly criticised for its limitations (Cater, 2006).

While gorilla-related tourism has provided important capital and development for the Ugandan national economy and rural communities around Bwindi, a precarious over-dependence on export markets has been generally cautioned against in global tourism models for developing countries (Khan, 1997; Stronza, 2008). Since its inception in the early 1990s, BINP has been forced to rely on the niche and unpredictable international market, making Uganda's continued economic and conservation progress particularly vulnerable when natural disaster or civil conflict strikes (Laudati, 2010a). Some members of the academic community have even accused ecotourism of being disguised neocolonialism, referencing its tendency to control the market and create dependency on international organisations (Dorsey et al., 2004).

1.1.2 Wildlife Valuation

Several researchers have also warned against the promotion of primate conservation solely on the basis of economic commodification and suggest that additional strategies highlighting species' intrinsic value be explored (Dorsey et al., 2004; Hill, 2002). Remis and Hardin (2009) discuss the transvaluation of wildlife, a

concept that they say builds upon the established contingent valuation method (Stevens et al., 1991; Whittington, 2002) by providing “ecological and cross-cultural nuance to debates about economic and ethical valuation of nature” (p. 1590). In their study at the Dzanga-Sangha Dense Forest Reserve in the Central African Republic, the authors found that the cultural ecologies at the site, where humans and wildlife effectively coexist, are informed by a complex and dynamic system of symbolic, ecological and economic value. Such research supports the diversification of traditional value associations among resource users. In the case of Bwindi’s mountain gorillas, if *Gorilla beringei beringei* is seen as more than a fiscal opportunity for the country, ensuing confusion and resentment may be better avoided during periods of economic downturn and low international visitation (Cater, 2006; Mazimhaka, 2007).

1.2 Improving Park-Community Relations

Strong local support for conservation is still lacking in some communities around BINP and the threats to gorillas and other wildlife remain high (IUCN, 2015; Olupot et al., 2009). Problems at the human-wildlife interface and negative associations with mountain gorilla conservation still persist in some areas around BINP and, for many, the economic benefits of tourism do not outweigh the costs. Crop damage from protected animals, inequitable distribution of funds from tourism, and feelings of general exclusion or dismissal by Park authorities are some of the grievances expressed by community members in the past (Aharikundira & Tweheyo, 2011; Baker et al. 2012; Blomley, 2003; Namara, 2006).

1.2.1 An Acrimonious History

Bwindi Impenetrable NP has had a difficult past with its neighbouring residents, which makes lasting conservation in the region a complicated undertaking. One of the most controversial issues Park management at BINP has had to address is the displacement and disruption to the lives of many local residents when the area was named as a reserve in the 1930s. With the official gazettement of both Bwindi Impenetrable NP and Mgahinga Gorilla NP in 1991, a Trust was established to compensate former hunter-gatherer communities who were effectively denied continued access to the protected areas' resources. Failure to address socio-cultural considerations prevented this solution from being effective long-term and inequitable access to the Parks' resources remains an unresolved and contentious issue, as it continues to threaten the forest-based economies and livelihoods of these communities (Laudati, 2010b). The region where Bwindi Impenetrable NP is located is home to several ethnic groups. It is estimated that the Batwa, a Central African forest people who probably have the most historic rights to the land, were previously the only ones to occupy it until about the mid-16th century (Zaninka, 2001). The Bafumbira and Bakiga are the other two major ethnic groups in the region, the latter of which is the current majority. They are both categorised as Bantu agriculturalists (Namara et al., 2000).

Today, most inhabitants of the Kabale, Kisoro and Kanungu districts where BINP is situated are subsistence farmers. Due to the diverse ecology of the landscape, they are able to produce a host of food and cash crops including tea, coffee, bananas, rice, irish potatoes, sweet potatoes, sorghum, beans and maize. However, land availability around the Park is a challenge, particularly due to an increasing local population. The national growth rate is approximately 3.3% (World Bank, 2013) and in 2006 the Population Reference Bureau released a report projecting that Uganda

will have the highest population growth in the world within the next few decades (PRB, 2006). The population density around BINP is as many as 500 people/km² in some places (ITFC, n.d.). An added pressure many farmers face is crop damage from local wildlife, which could devastate a season's crop yields. Regrettably, Bwindi's mountain gorillas and, to a greater extent, baboons and forest elephants have often drawn the ire of their farming neighbours (Biryahwaho, 2002; Madden, 1999; Seiler & Robbins, n.d.). The frequency of crop damage events presents a formidable obstacle to both agricultural productivity and conservation in the region (Hockings & Hulme, 2009; Aharikundira & Tweheyo, 2011).

1.2.2 Current System of Revenue-Sharing at BINP

To attenuate the negative impacts of wildlife conservation for affected communities, a national tourism revenue-sharing (TRS) policy for Ugandan parks was officially passed as an Act of Parliament in 1996 (Archabald & Naughton-Treves, 2001). The policy, which would be overseen thereafter by the newly established Uganda Wildlife Authority, awards 20% of gate entrance fees at national parks to "frontline" parishes (UWA, 2000). This has worked well for most Ugandan NPs, like Queen Elizabeth and Murchison Falls, as they do not require a maximum capacity on tourists. However, in order to preserve the fragile ecosystems and vulnerable wildlife at Bwindi Impenetrable and Mgahinga Gorilla NPs, these protected areas must have an upper limit on visitation. Reduced visitor capacity has made gorilla tourism more luxury, allowing these parks to charge more money for gorilla permits. However, of the 600 USD that FNR tourists currently pay to trek gorillas in Uganda, only 40 USD is for the gate entrance and it is 20% of this amount that goes to the communities (Adams & Infield, 2003; Ahebwa et al., 2012). This is significantly less than the 20% of gate entrance fees at other parks in Uganda and despite generating the most

revenue by far, BINP actually distributed less TRS funds than Queen Elizabeth and Murchison Falls until 2009. As such, a gorilla levy of 10 USD on every gorilla permit was introduced in 2010, which has helped to resolve this problem (Warden Ruhija sector, pers. comm., 23 July 2015).

TRS funds are determined at the end of the fiscal year and the process of distribution is through local government. Communities decide how to spend the money and the community conservation department of UWA advises them on how to make project proposals. These proposals travel through the levels of government to UWA headquarters who releases the funds, if approved. The money first travels to district leadership, then to the sub-counties, and finally down to the communities through local councils (LCs). Generally, the projects that communities choose to fund are based on a rotation system. However, in their proposals, they have the opportunity to identify individuals who are particularly suffering and would benefit most from TRS funds (Ahebwa et al., 2012). The Park warden for Ruhija sector indicated that the provision of goats, sheep, piglets and Irish potato seeds have been the projects most successful for these communities in the past (pers. comm., 23 July 2015).

1.2.3 Local Conservation Education

As another way to garner local support for conservation at Bwindi and sensitise residents to neighbouring wildlife, increased education and awareness has become a top priority for conservation interest groups. Such efforts in Ruhija have been spearheaded by the Bwindi Ape Conservation Education Partnership (BACEP), a collaboration between the Max Planck Institute for Evolutionary Anthropology (MPI), the Cleveland Metroparks Zoo and the U.N.I.T.E. program of the North Carolina Zoo.

Current objectives include: providing monthly environmental lessons and teacher trainings at local primary schools; implementing community outreach programs like nature walks or showing videos of gorillas; and holding local competitions, such as debates, between schools in the area (Turinawe et al., 2014; Director of U.N.I.T.E. for the Environment, pers. comm., 14 June 2015).

Videos about habitat loss, snaring, bushmeat, and gorilla behaviour are shown on a projector to children (once per term at schools) and adults (once per month at churches) and are followed by a discussion session. In 2014, screenings were shown at 16 locations, reaching nearly 2000 community members. The Conservation Education Coordinator for MPI says that while the project is contingent on funding, she felt that the video initiative has been one of the most impactful approaches to community sensitisation in the area (pers. comm., 23 July 2015). The more well-known Great Apes Film Initiative has screened their pedal-powered videos of gorillas around BINP as well, but lacks consistent presence in the region, given their involvement in many projects (Mauthoor, 2011).

It is now widely held that conservation progress cannot be achieved without the support of neighbouring communities (Hockings & Humle, 2009). To address current tensions between residents and protected animals, it has been suggested that conservation stakeholders explore opportunities to encourage, not only greater understanding and appreciation of local wildlife, but also national pride in unique domestic products (Lepp & Harris, 2008; Mazimhaka, 2007; Sicotte & Uwengeli, 2002). A conservation awareness strategy that concurrently focuses on the economic and non-utilitarian value of gorillas might be one of the most viable long-term solutions for achieving sustainable, community-supported conservation in the area.

1.3 The Study Site

1.3.1 Biodiversity Hotspot

Bwindi Impenetrable National Park is located in southwestern Uganda on the eastern edge of the Albertine Rift, with its coordinates to the nearest second recorded as 01°04'50"S and 29°39'41"E (UNESCO, 2014). Covering just over 32,000 hectares (approximately 330 km²), the Park lies in the Kigezi highlands and encompasses the districts of Kabale, Kisoro and Kanungu. The Albertine Rift, which runs through Uganda, Rwanda and the DRC, has been identified as one of the world's most important conservation and biodiversity hotspots, containing more than half of all African bird species and nearly 40% of the continent's mammalian species (ITFC, n.d.; UNESCO, 2014). Among the 38 protected and unprotected sites in the Rift, Bwindi Impenetrable National Park ranks among the highest in terms of density of endemic and globally threatened species. Listed as one of UNESCO's World Heritage Sites, BINP contains a significant portion of the earth's biodiversity as a result of its diverse ecology, with habitats ranging from 1,190 m. (lowland forest) to 2,607 m. (Afromontane forest). Such altitudinal ranges have given way to high species variation within the region. A report produced in 2007 named BINP as being home to 393 different species of trees and ferns, 381 bird species, 34 reptilian species, 29 species of amphibians, over 200 species of butterflies and 135 species of mammals, many of which are only found in the Albertine Rift and/or face a significant threat to their survival (Plumptre et al., 2007). As the rarest extant species of gorilla, the endangered mountain gorilla (*Gorilla beringei beringei*) qualifies as both.

1.3.2 Gorilla Tourism

To protect its unique and vulnerable plant and wildlife, BINP was officially gazetted as a national park in 1991 and has been overseen by the Uganda Wildlife Authority since 1996 (Archabald & Naughton-Treves, 2001). Although the site is an internationally recognised protected area, it is managed domestically in accordance with various national laws (UNESCO, 2014). The success of gorilla-related ecotourism that followed the Park's gazettelement proved to be an effective and important way to support the national and local economies, as well as the Park's conservation agendas, with gorilla population estimates increasing fairly steadily since the late 1990s (Butler, 2012). The most recent mountain gorilla census in 2011 reported that the subpopulation at BINP included approximately 400 individuals, an impressive increase from the 302 gorillas found in the Park during the 2006 census (McNeilage et al., 2006; Robbins et al., 2011). However, Robbins et al. (2011) partially attributes this to improved census techniques.

In addition to several wild families, Bwindi currently has 13 habituated groups of gorillas available for tourists to track at any of its four tourism sites (see Figure 1.1). Buhoma, where the Park's gorilla-related tourism was initiated in 1993, is the oldest and most popular site. It is home to the Mubare, Habinyanja and Rushegura groups. The Nkuringo site has only one gorilla family, which carries the village's namesake. Rushaga has the most habituated groups, including Nshongi, Mishaya, Kahungye, Bweza, Busingye and Nyakagezi (Great Lakes Safaris Ltd., 2015). Ruhija, the fourth and final major tourism site at Bwindi, is located 2,346 m. above sea level on the eastern side of the Park in the Kabale district (01°02'46"S and 29°46'20"E). The habituation of gorillas for tourism in Ruhija sector began in July 2007 and the site officially opened its doors for gorilla-trekking in October 2008 (ITFC, n.d.). The gorilla

groups in Ruhija are Bitukura, Oruzogo and Kyagurilo families, the latter of which has been studied by researchers since 1998 but was only recently designated as a tourism group (Great Lakes Safaris Ltd., 2015).

1.3.3 Site Selection

Ruhija's young history with tourism understandably makes it a more understudied area of the Park. Literature on the impacts of ecotourism and local attitudes toward conservation and wildlife in the area remains limited for this site. To explore the potential for a more diverse transvaluation of nature among Bwindi's adjacent communities, Ruhija sector was selected by the researcher to be the focus of this preliminary study.

1.4 Overall Research Goal

The purpose of the research presented in this dissertation is to compare community and tourist experiences and attitudes toward Bwindi Impenetrable National Park and its mountain gorillas, particularly by exploring current value associations, and contribute to a more holistic understanding of the complex network of relationships at this site.

1.5 Project Aims

1. Assess local ideas and attitudes toward BINP and its mountain gorillas.
2. Determine any trends in community and tourist responses about the value they associate with gorillas, if any.
3. Explore the potential for experiential learning to impact conservation sensibilities.

CHAPTER 2. METHODOLOGY

2.1 Approach and Research Design

During the months of June and July 2015, the principal research questions of this study were explored primarily through investigative, grounded theory research which aims to develop a theory based on the existing literature and explore that theory using qualitative data from a substantial number of participants (Charmaz, 2006; Creswell, 2007; Strauss & Corbin, 1990). During this time, the researcher conducted semi-structured interviews (SSIs) with two user groups of the Park, visiting Eco-tourists (ET) and local residents (LR). Willing participants were selected at random. In the case of local participants, a translator familiar with the area and local language of Rukiga was employed to assist the process. Participants from this user group were asked whether they felt more comfortable conducting the interview in English or Rukiga. The translator remained present in both cases to clear up any confusion that arose during the interview. SSIs, in which demographic data were collected and open-ended questions were explored, were chosen as the primary method of data collection for this study. Such a dialog allows for a flexible and intimate approach to learning valued information. In many cases, this interview method actually illuminated certain aspects of the research not previously considered by the researcher, facilitating a more holistic and thoughtful analysis of the study's results (Cohen & Crabtree, 2006; Fossey et al., 2002; Newing, 2010).

2.2 Data Collection

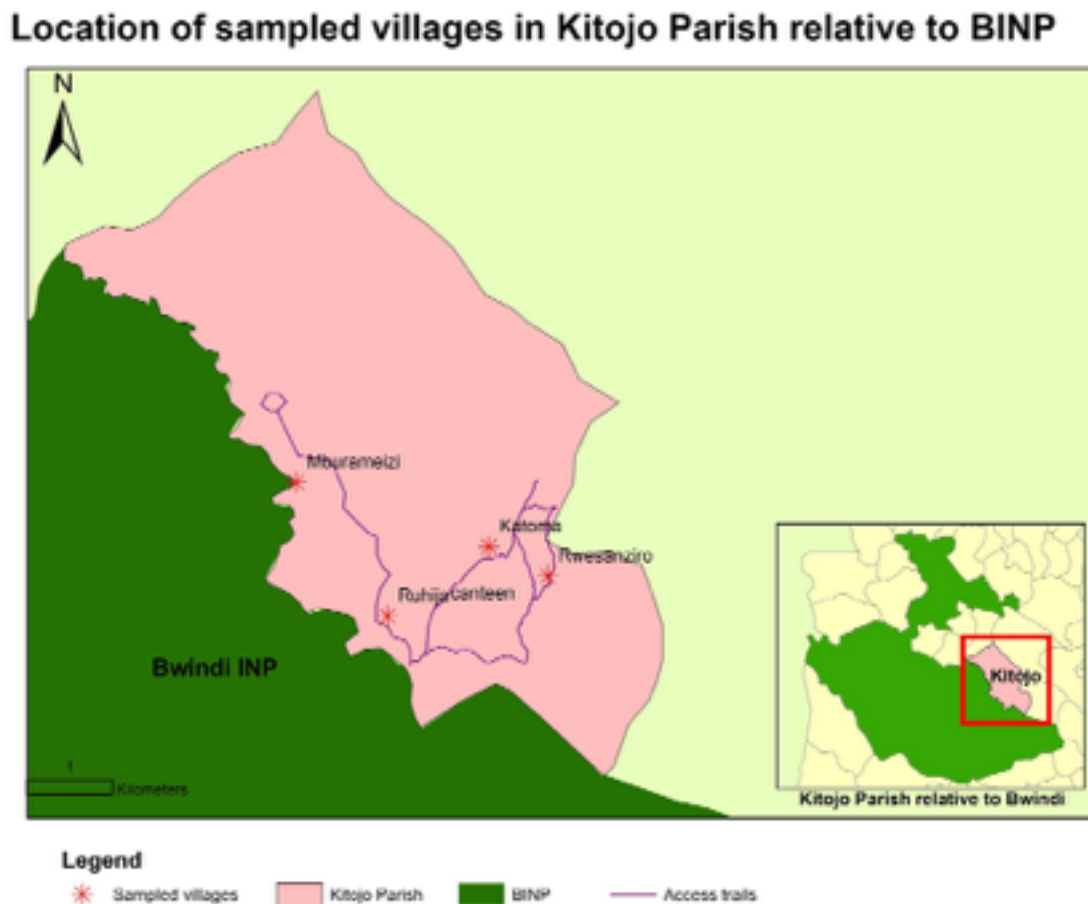
In addition to semi-structured interviews with LR and ET user groups, the researcher was also fortunate enough to be permitted access to several community meetings, as well as informal conversations with lodge/accommodation managers, shop

owners, visiting researchers and Park staff. This additional insight allowed for a more nuanced approach to the various complex factors at play within such a network of often competing interests.

2.2.1 Local Resident Participants

Before the start of community interviews, the researcher introduced herself and the intended study to village elders, so as to foster a transparent and cooperative relationship. Interviews with local residents were then collected from the four most populated villages in Kitojo Parish (see Figure 2.1), where the Ruhija tourism sector of the Park is located, using cluster and systematic sampling methods. Cluster sampling allowed the researcher to individually address each of the four main villages in Kitojo Parish. These include: Ruhija, also known as Canteen (370m. from Park boundary); Mburameizi (18m. from Park boundary); Katoma (1,604m. from Park boundary); and Rwesanziro (1,400m. from Park boundary). These distances were calculated using ArcGIS with the help of ITFC researcher, Peter Kabano. Because of their proximity to the Park, these are some of the communities most directly impacted by mountain gorilla conservation and ecotourism in Ruhija sector.

Figure 2.1: Map of the local area where interviews were carried out (map credit: Peter Kabano, ITFC)



To maintain a random sample, a systematic sampling of households in each village was applied to the cluster sampling method, as finding available participants was not an issue for this group. To do this, the researcher and her translator followed pre-determined routes through each village asking every third person if they would like to participate. If an individual refused, the next person/residence was approached for an interview and the every third person/house method was again resumed. No more than one individual would be asked for an interview from the same household, as original responses would be less likely in this case (Newing, 2010). When possible, conducting interviews in front of an audience was avoided so as to not make the

participant uncomfortable and potentially influence his/her responses. However, this was not always possible in the cases where doing so would create a considerable disruption or annoyance to the individual. Figure 2.2, for example, shows a local participant peeling potatoes with a comrade during his interview (left) and an Eco-tourist being interviewed while he and his wife enjoy a relaxing evening at their lodge (right).

Figure 2.2: Photographs of the research team collecting demographic data from a local resident (left) and an Eco-tourist (right) during the pre-interview phase of the SSL.



Household interviews with LR were performed during the first three days of each week (Monday-Wednesday), with each week being assigned a different village, for a total of four weeks (see Appendix 4). Afternoons were chosen for community interviews, as this was the time of day many people would be returning from their morning work in the fields. This was indicated as being the best time for interviews by a majority of local informants before the study officially began and the itinerary was, therefore, standardised in the researcher's daily work plan (see Appendix 3).

Sample sizes were calculated as 5% of local population estimates for each village. As an official population census is yet to be conducted in the area, village estimates were obtained from the Conservation Education Coordinator for Max Planck Institute for Evolutionary Anthropology (MPI) and corroborated by key local informants. Interviews for residents consisted of a formalised set of thirteen questions about their ideas and attitudes toward mountain gorilla conservation at BINP, each question allowing room for further inquiry and discussion (see Appendix 1). These interviews tended to last between 30 minutes and 1 hour.

2.2.2 Eco-tourist Participants

Eco-tourists were randomly selected using convenience sampling, as members of this user group were much more difficult to come by than local residents, particularly during the month of June when tourist numbers were low. The convenience (also known as haphazard or availability) sampling method is a type of non-probability sampling primarily used in pilot studies or during the exploratory phase of longer qualitative studies. It involves interviewing any available individuals in order to get a basic understanding of key issues and trends in responses (Newing, 2010).

The strategy of finding participants from this group was to arrive at the UWA outpost in the morning when tourists were first arriving for gorilla-trekking. The researcher would approach one person per family and ask for an interview later that evening. If the individual agreed, their name and lodge were recorded, as well as an interview time that worked well for the participant. The researcher would then conduct post-trek interviews in the late afternoons and evenings (see Appendix 3) in order of the names written down. If interviews ran long and the researcher was not able to meet with all participants, the name(s) at the bottom of the list were simply omitted. The

researcher was able to conduct interviews with tourists staying in a range of lodges, including: Gorilla Mist Camp; Asyanut Ruhija Gorilla Safari Lodge; Bakiga Lodge; Ruhija Gorilla Friends Resort and Campsite; and Ruhija Community Rest Camp. In the same way as with the village elders, the researcher introduced herself to all lodges before the official start of research began.

ET interviews were conducted at the end of the week (Thursday-Saturday), when it was indicated through informal conversations with Park staff that tourist numbers were likely to be greater. It was initially envisioned that the researcher would interview between 2-3 tourists on ET days, but this number was not always met due to a particularly slow tourist season. The weekly schedules, therefore, had to be adjusted to include many more ET days than LR days (see Appendix 4). The final total for all Eco-tourist interviews was 23, a number which the researcher deemed acceptable for this study, as Eco-tourist data were meant to provide a context in which to look at local community responses (Strydom & Delpont, 2002). The researcher addressed eleven main talking points when interviewing tourists (see Appendix 2), as well as any unexpected issues that came up during the discussion. Interviews for this group tended to last between 45 minutes and 1 hour.

2.3 Ethics and Informed Consent

Interview participants were made aware of the study's objectives through the distribution or verbal communication of the LR and ET information sheets (see Appendices 5 and 6, respectively). Literate individuals were asked to give signed consent via the informed consent form (see Appendix 7), in accordance with Oxford Brookes University's Code of Practice for the Ethical Standards for Research Involving Human Participants (Oxford Brookes University, n.d.). Non-literate

participants were prompted to give informed consent verbally to the researcher who noted it on an audio-recording device, if consented to by the interviewee, and/or in the researcher's notes. Eligible participants were considered to be anyone over the age of 14. This was considered an appropriate minimum age by the researcher who wanted to include adolescent perspectives from individuals old enough to form original thoughts and opinions, especially regarding local conservation education (Myers et al., 2003). Interviews from participants under the age of 18 required the consent (written or verbally recorded) of both the interviewee and his/her primary guardian. Extra measures were taken to make sure younger individuals, in particular, understood what was being asked of them and had ample time to ask any questions (Oxford Brookes University, n.d.; Thomas & O'Kane, 1998).

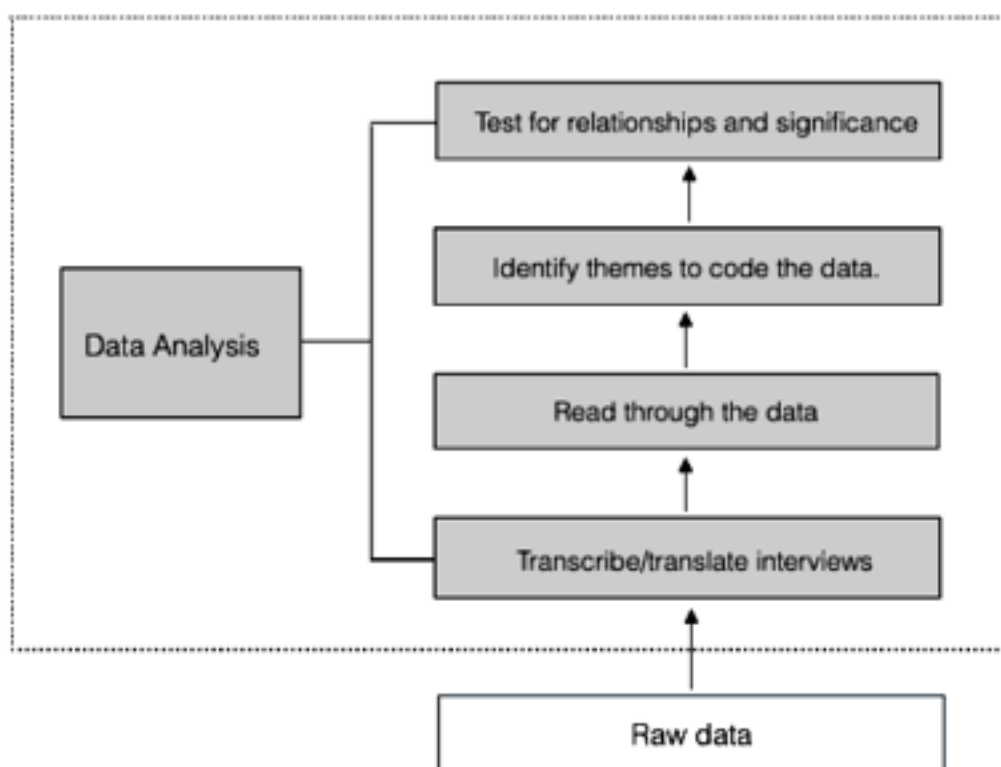
The research team took special care not to allude to any aspect of the research focus that might have otherwise created false hopes for future projects in the area. Interviewees were also assured that their participation in the study would remain completely anonymous and that no personal identifiers relating to them, such as name or home address, would be needed. Semi-structured interviews were recorded on an audio-recording device, only where the participant explicitly agreed to the interview being recorded, and/or through the researcher's own detailed notes taken during the interview. Official ethics approval was given by the Faculty Research Ethics Officer, Maggie Wilson, in the Humanities and Social Sciences Department at Oxford Brookes University (see Appendix 8). Final permission to conduct the study was granted by the Uganda Wildlife Authority and the Uganda National Council for Science and Technology.

2.4 Data Analysis

To address the primary objectives of this study and to test the proposed hypotheses, certain themes were prioritised in interviews with the two user groups of the Park. Eco-tourists' and local residents' ideas about the value they associate with the Park and its mountain gorillas, if any, were explored and compared. The researcher also looked at the types of words used when talking about gorillas; perception of and relationship with the Park; and the level of interest in and familiarity with Bwindi's mountain gorillas. The sentiments shared by participants were elaborated on and supported by the particular experiences of the interviewee and any factors which may have influenced the aforementioned ideas and perspectives. Responses from the two user groups in question were compared and the demographic information collected from participants was also used in analysis to further contextualise the research findings.

To analyse the data from SSIs, interviews were first transcribed and, when needed, translated. After examining the transcripts, the researcher identified and coded general themes and trends in responses relevant to the objectives of the study. When appropriate, data were clustered and grouped at the discretion of the researcher. Using these codes, data were input into a Microsoft Excel spreadsheet. The qualitative data were then quantified by assigning numbers to information that had been coded. Excel was used to create illustrative tables and graphs. Basic statistical tests were run through the Statistical Package for the Social Sciences (SPSS) Version 22.0 to achieve a more complex analysis.

Figure 2.3: General procedure used for analysing this study's qualitative data (adapted from Creswell, 2014, p.197)



A mixed-methods approach to data analysis, the steps of which are outlined in Figure 2.3, was employed for several reasons. By quantifying the results from the mostly nominal data, the researcher was able to use descriptive statistics to talk about any significance or relationships between key variables. This is then supported qualitatively in the discussion through the reference to important quotations or informal conversations (Creswell, 2014). In Excel, the frequencies of responses to different prompts were expressed in table and bar graph format. For bar graphs, percentages on the Y-axis were used to show the proportion of each group that responded in a certain way, as the use of frequencies alone would misrepresent the data. For example, the LR group consisted of almost three times as many individual

interviews as ET. Percentages were also used to represent the data because participants would often give more than one response to certain prompts. As one of the researcher's objectives was to see which responses were important to the most people, percentages were used to indicate a proportion of each group that mentioned a certain response.

2.4.1 Pearson's Chi-Square

Further analysis was undertaken in SPSS. Non-parametric tests were used because the researcher could not assume a normal distribution for the data. The researcher considered the Pearson chi-square test to be the most reliable tool for assessing possible patterns in the frequencies of responses between variables (Newing, 2010), where significance was determined by the probability value (p) where $p \leq 0.05$. This was used only for the data from LR to determine if there were any relationships between demographic data or past experiences and current attitudes or perceptions. Some variables describing demographic information had to be consolidated into smaller subgroups so as to achieve greater expected counts in each cell. The researcher resolved that this would be no more than a 20-30% chance of an expected count less than 5 in any of the cells (Cochran, 1954; Field, 2005). It is for this reason that age, education and occupation have fewer subgroups than originally planned. In the case where two categorical variables each only had two possible categories (2x2 contingency table), Yates's continuity correction was used to report the significance of that relationship, rather than Pearson's chi-square (Field, 2005).

2.4.2 Spearman's Rank Correlation

Finally, to look at the way both user groups responded to questions about BINP and its mountain gorillas, a Spearman's rank correlation was run. This was done by

grouping the types of value individuals assigned to the gorillas into two categories, based on the assumption that certain types were indicated in conjunction with certain others. A score for each individual was produced in each of the two categories. For example, if a participant indicated two value types in category 1, their score for that category was 2. If they also mentioned a type of value that was found in category 2, their score in the second category was 1. The scores were treated as ranks and the two categories were run against each other to see if a strong negative or positive relationship existed between them (Agresti & Finlay, 2008; Field, 2005). The same procedure was used to test whether either category of value type had strong negative or positive relationships with any of the user groups. More complex statistical tests were not relevant for this pilot study due to mostly qualitative data and small sample sizes.

2.5 Limitations of the Study

The results of this study are based on the direct responses from interview participants during SSIs. As such, there were a number of limiting factors which may have influenced the data collected from the LR user group, in particular. It should be noted that the mere presence of a foreign researcher may have impacted responses, as well. It is possible that this may have caused residents to feel they needed to respond in a certain way and perhaps would have given different responses to the same prompts if asked by someone they were more familiar with. It was assumed that this would not play such a role in ET responses due to common language and Western origin for most of the individuals. A few cases existed in both groups where an audience of friends/family was present, as demonstrated in Figure 2.2, and this may have had some effect on participant responses, as well (Newing, 2010).

Additionally, the results produced in this dissertation are expressed both quantitatively and qualitatively. To quantify the qualitative data, the researcher coded and categorised responses according to her own interpretation of the data and they should be understood as such. Given the subjective nature of this approach, the researcher aimed to be as consistent as possible to answer the primary research questions of this study.

Lastly, in view of the sampling techniques, sample sizes and scope of the research undertaken for this dissertation, the findings cannot be considered externally statistically valid and should not be generalised to make assumptions about the entire local population. It should, alternatively, be understood as an exploratory study. Once official village population counts are produced for this area, it may be most prudent to conduct a census or establish a sampling frame in an effort to better balance the sample (Field, 2005; Newing, 2010). The validity of the results produced here should be interpreted internally and if this sample yields significant results that support proposed hypotheses, it may provide the basis for a more developed future research project that builds upon these preliminary findings (Newing, 2010; Strydom & Delport, 2002).

CHAPTER 3. RESULTS

3.1 Characteristics of Study Participants

For this study, the researcher interviewed a total of 87 participants, in which 64 were local residents and 23 were Eco-tourists who had participated in gorilla-trekking at BINP. Total number of LR interviews from each village were as follows: 20 from Ruhija; 13 from Mburameizi; 15 from Katoma; and 16 from Rwesanziro. In line with the objectives of this study, it was more relevant to look at demographic data for the LR group during analysis. Relevant characteristic information for this group, which was thought to potentially have some effect on responses, is included in Table 3.1.

All Eco-tourist participants interviewed were from Western countries. To consolidate the data, they were grouped based on continent of origin, with 10 being from North America, 12 from Europe and 1 from Australia. Five ET respondents were aged 14-29 (22%) and the 30-49 and 50+ age groups each contained nine individuals (39%). Participants were mostly female, while 39% of respondents were male. Aside from age and gender, this group showed little demographic variation. All persons interviewed were of some Western origin, were either students or held paid employment, and had a minimum education of secondary school. Other assumptions can be made about the characteristics of participants in this group, as they had all chosen to participate in the same ecotourism activity (eg. they are all somewhat interested in wildlife and/or conservation), information which was explored during the course of interviews and in this dissertation's discussion section. Therefore, LR demographic results will be discussed in this chapter while most ET characteristics will simply be considered as ancillary information.

Table 3.1: Characteristics of LR study participants expressed in frequencies and percentages (N=64)

		Mburameizi	Ruhija	Rwesanziro	Katoma	Total	Total %
		18m. from boundary	370m. from boundary	1,400m. from boundary	1,604m. from boundary		
Age group	14-29	4	14	5	5	28	44
	30-49	6	4	6	9	25	39
	50+	3	2	5	1	11	17
Gender	male	6	11	3	7	27	42
	female	7	9	13	8	37	58
Education	none	1	1	7	3	12	19
	primary	11	10	8	8	37	58
	secondary +	1	9	1	4	15	23
Occupation	paid employment	3	11	1	4	19	30
	unemployed/ farmers	10	9	15	11	45	70

3.1.1 Age Group

Forty four percent of residents interviewed were in the 14-29 group, 39% fell in the 30-49 range, and 17% were aged 50 or older. There was a statistically significant difference for the age class of LR study participants ($\chi^2 = 7.719$, $df = 2$, $p = .021$), which shows a much younger sample than the ET group.

3.1.2 Gender

Local resident participants were mostly female, while males constituted 42% the sample for this user group. The difference in gender for LR was not statistically significant ($\chi^2 = 1.563$, $df = 1$, $p = .211$).

3.1.3 Education Level

The majority of LR participants had achieved a primary level of education, while 19% had no formal education and only 23% had an education of secondary or higher. The few who indicated post-secondary education held a diploma or certificate in a specialised field, such as teaching. There was a statistically significant difference among the education levels of all LR participants ($\chi^2 = 17.469$, $df = 2$, $p < .001$).

There was also a significant difference in education based on village of residence ($\chi^2 = 17.684$, $df = 6$, $p = .007$) and based on whether participants lived more or less than .5km. from the Park border ($\chi^2 = 7.621$, $df = 2$, $p = .022$), with more educational opportunities in villages closer to the boundary.

3.1.4 Occupation

Most LR participants did not hold paid employment. The majority of respondents were either students, retired or farmers, the latter being the majority. Only 30% had an official job title for which they received regular income. The difference in occupation held by participants was statistically significant ($\chi^2 = 10.563$, $df = 1$, $p = .001$). There were also statistically significant differences in the employment opportunities experienced by participants from different villages ($\chi^2 = 10.687$, $df = 3$, $p = .014$) and whether they lived more or less than .5km. from the Park boundary ($\chi^2 = 4.110$, $df = 1$, $p = .043$).

3.1.5 Distance from Park Boundary

Thirty one percent of LR participants were from Ruhija-canteen; 20% were from Mburameizi; 23% were from Katoma; and 25% were from Rwesanziro. There was no statistically significant difference for village of residence ($\chi^2 = 1.625$, $df = 3$, $p = .654$). Ruhija and Mburameizi are less than .5km. from the Park boundary, while Katoma and Rwesanziro are both further than .5km. (see Figure 3.1). Therefore, 52% of participants lived less than .5km. from the boundary, while 48% lived more than .5km. away. As in the case of village of residence, this difference was not statistically significant ($\chi^2 = .063$, $df = 1$, $p = .803$).

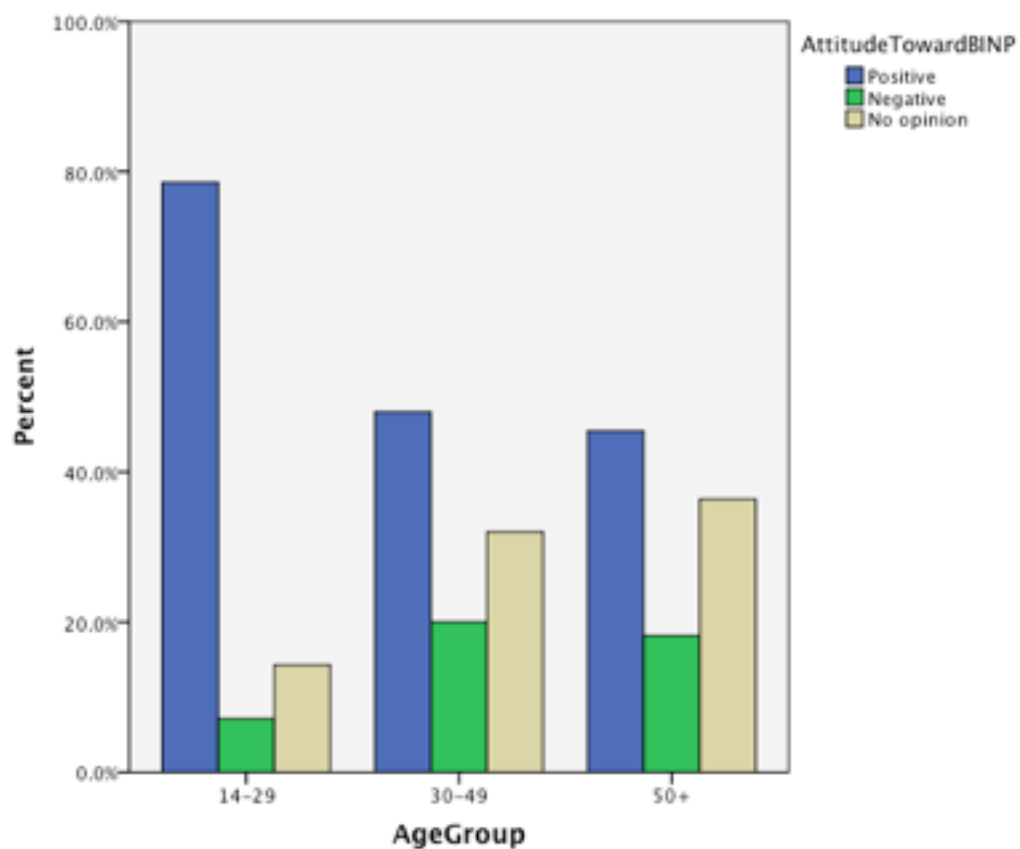
3.2 Local Residents' Attitudes Toward BINP

During SSIs, local residents living in Ruhija sector were asked whether they thought that having the Park near to them was good or bad. Some indicated “neutral” or “no opinion”. Additionally, some respondents would initially say that the Park was good but, when asked to elaborate, only indicated negative things about the Park and its animals. In the case of conflicting responses, such participants were considered to have “no opinion”, as they could not offer a definitive stance regarding how they felt towards the Park. Most participants had a positive association with BINP (60.9%), while 14.1% thought about the Park negatively and 25% seemed to have no opinion.

3.2.1 Current Perception of the Park by Demographic Factors

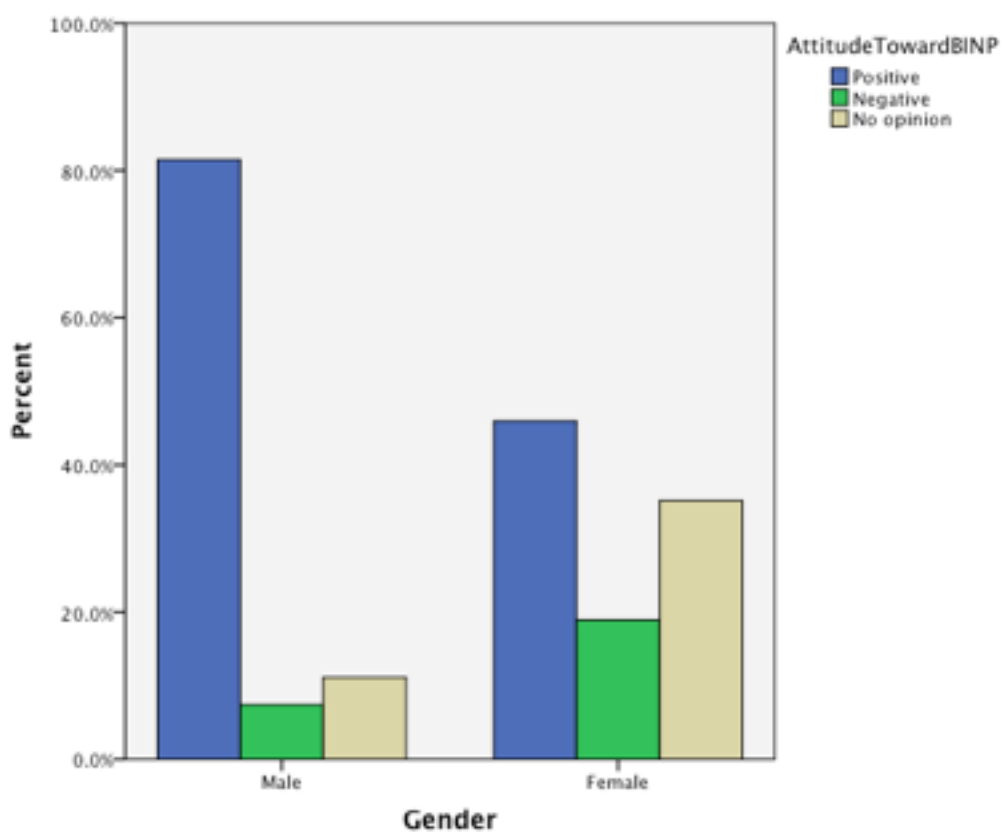
The difference in attitude toward the Park according to age group was not statistically significant ($\chi^2 = 6.605$, $df = 4$, $p = .158$), as shown in Figure 3.1. However, a greater percentage of participants aged 14-29 indicated a positive association with the Park than in the other two categories.

Figure 3.1: Local attitudes towards Bwindi Impenetrable NP according to age group



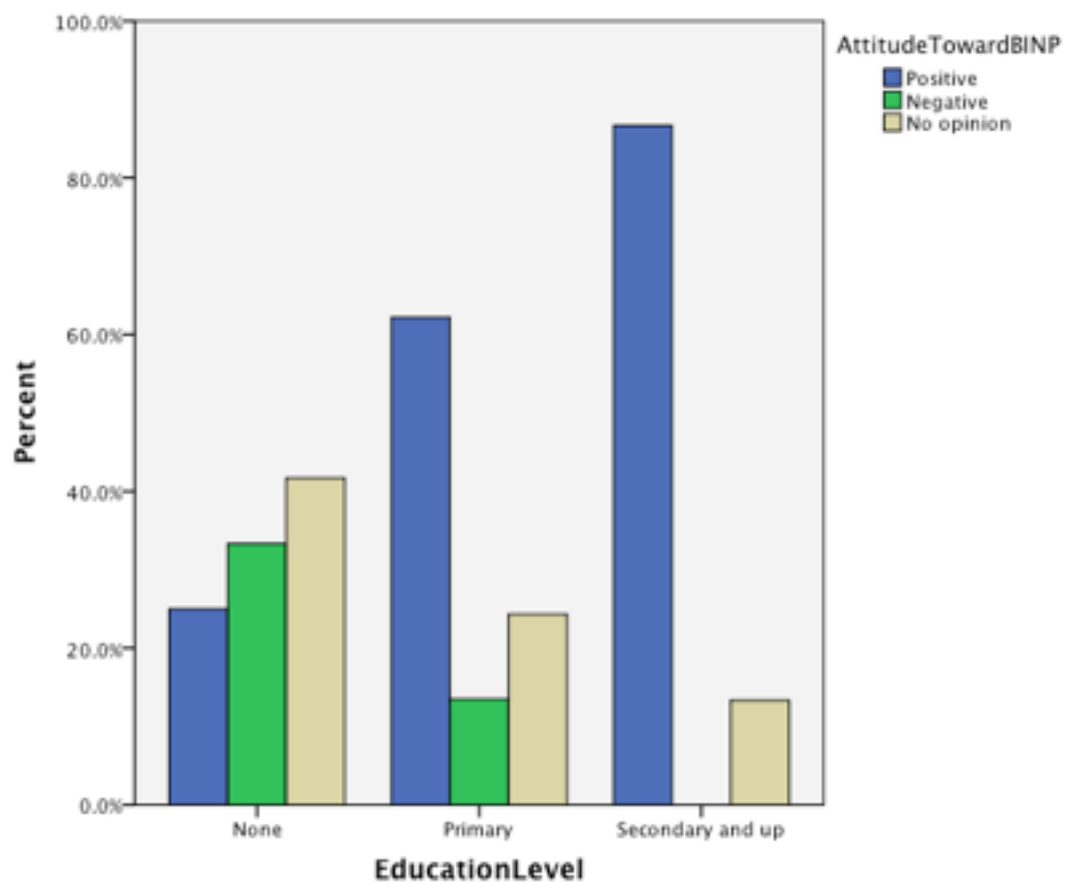
There was a statistically significant difference in attitude toward BINP according to gender ($\chi^2 = 8.309$, $df = 2$, $p = .016$), as shown in Figure 3.2. Far more male participants had positive associations with the Park than female participants.

Figure 3.2: Local attitudes toward Bwindi Impenetrable NP according to gender



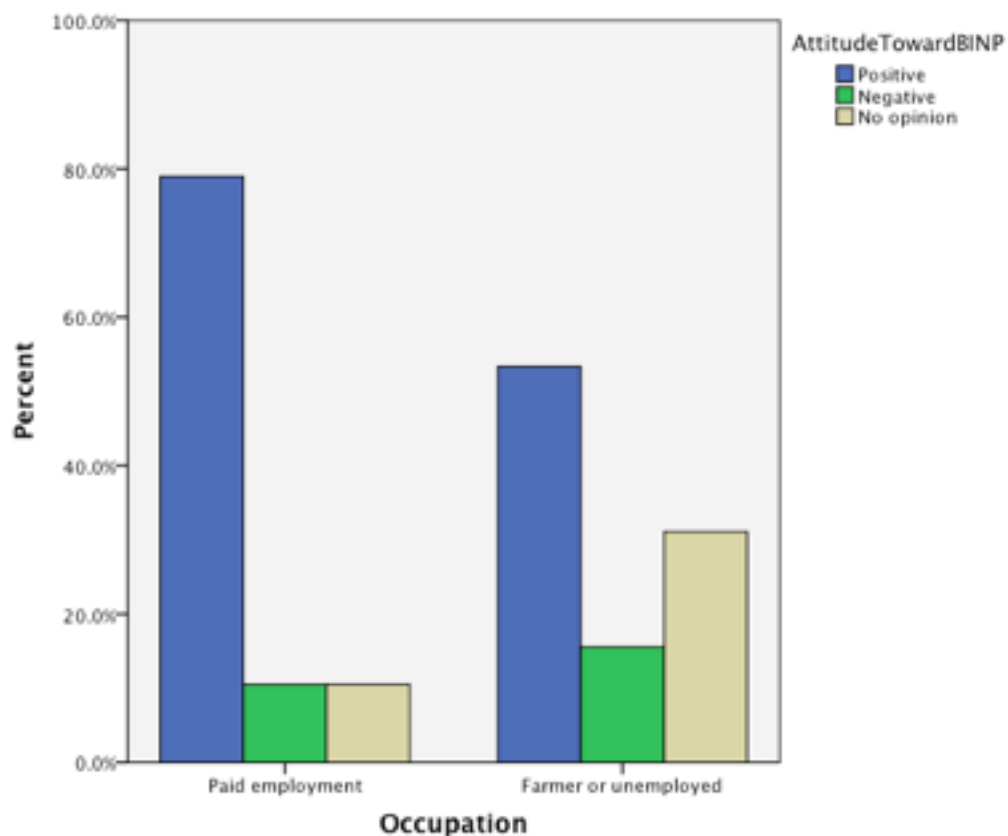
A statistically significant relationship also existed between education level and attitude toward BINP ($\chi^2 = 11.625$, $df = 4$, $p = .020$). For LR participants, associations with the Park are shown to be far more positive as highest level of education increased (see Figure 3.3).

Figure 3.3: Local attitudes toward Bwindi Impenetrable NP according to level of education



Differences in attitude toward the Park according to occupation were found not to be statistically significant ($\chi^2 = 3.943$, $df = 2$, $p = .139$). However, Figure 3.4 shows that farmers or unemployed individuals indicated more variation in responses than individuals with paid employment, who mostly tended to react positively to the Park's presence. Almost all respondents belonging to the "employed" category either worked for BINP or received income from a tourism-related job.

Figure 3.4: Local attitudes toward Bwindi Impenetrable NP according to occupation



There was a statistically significant difference for attitudes toward BINP according to village/ distance from the Park boundary ($\chi^2 = 14.985$, $df = 6$, $p = .020$), as shown in Figure 3.5. An even stronger significance existed based on whether an individual lived more or less than .5km. from the Park boundary ($\chi^2 = 10.726$, $df = 2$, $p = .005$), as shown in Figure 3.6.

Figure 3.5: Local attitudes toward Bwindi Impenetrable NP according to village of residence

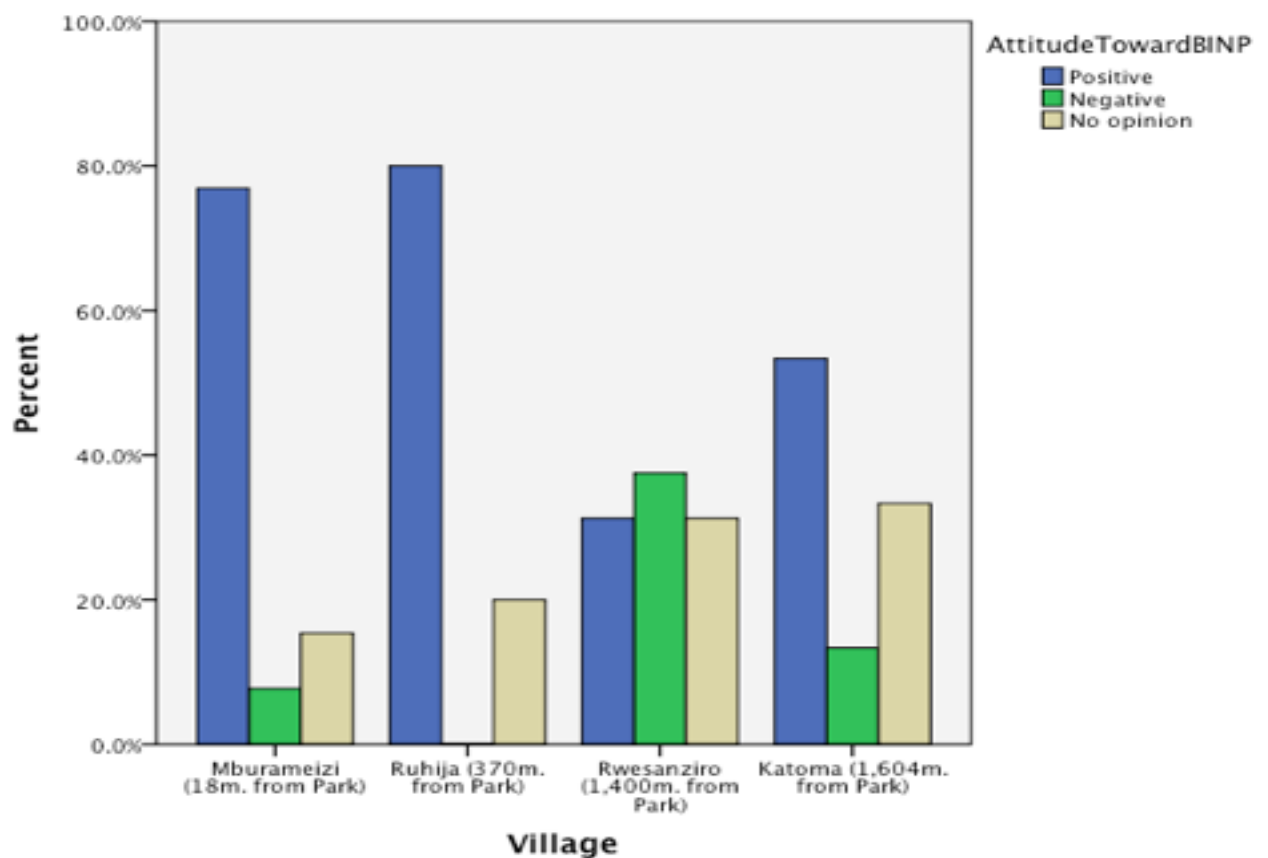
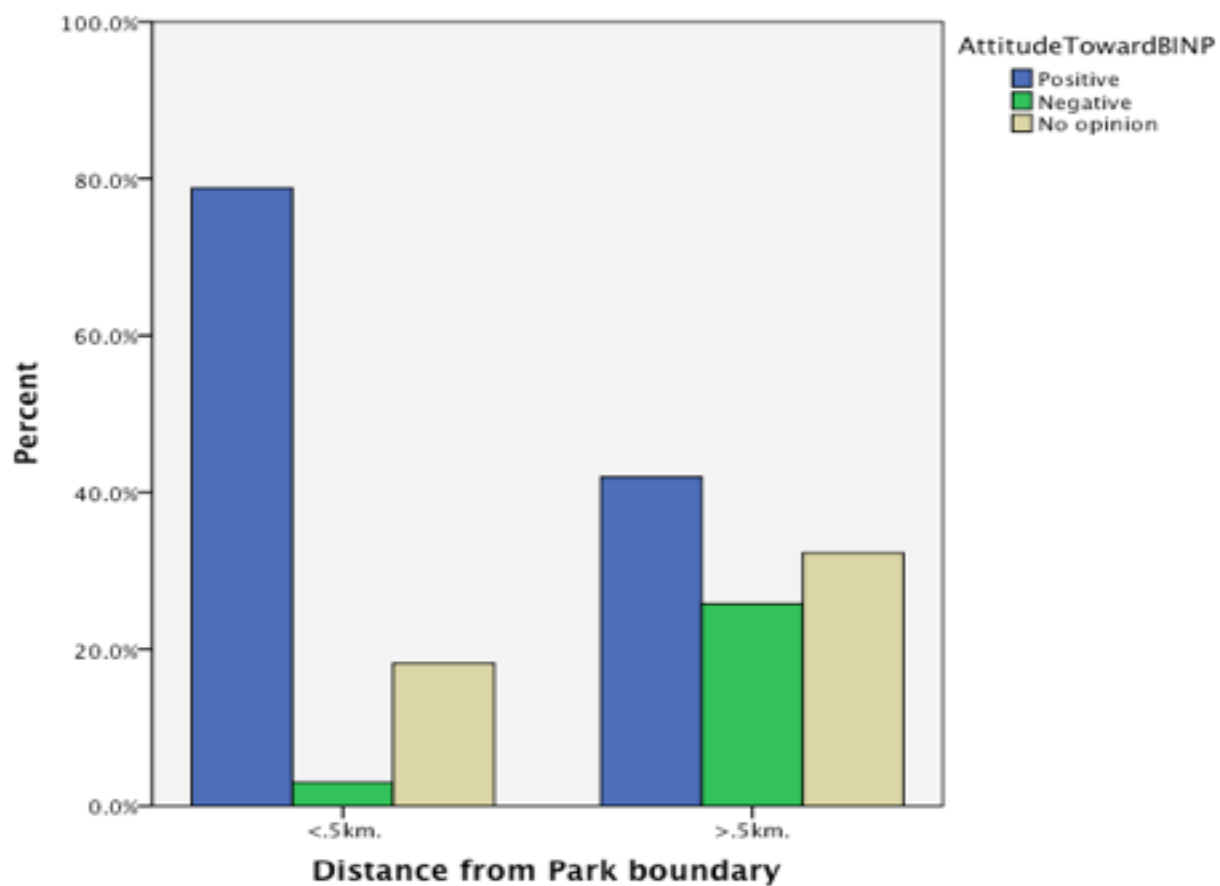


Figure 3.6: Local attitudes toward Bwindi Impenetrable NP based on proximity to the Park boundary



3.2.2 Suggestions for Future Improvement

All residents were asked if there was anything they thought the Park could do to improve. Some participants gave multiple answers to this question and, therefore, the total number of responses is greater than N=64. Table 3.2 shows that percentages were calculated as a percent of the total number of responses (column 7) and also as a percent of the total sample that indicated each improvement (column 8). As such, the total percent in column 8 is greater than 100%.

Table 3.2: Community Responses for how the Park can Improve (N=64)

	Mburameizi (18m. from boundary)	Ruhija (370m. from boundary)	Rwesanziro (1,400m. from boundary)	Katoma (1,604m. from boundary)	Total Count	% Total Responses	% Total Respon- dents
Control animals/ compensate	3	6	10	7	26	37.1	40.6
Employ more locals	2	6	1	1	10	14.3	15.6
Improve infrastructure	3	6	2	1	12	17.1	18.8
Improve revenue- sharing	0	1	2	2	5	7.1	7.8
Other	3	3	1	3	10	14.3	15.6
Nothing	3	0	2	2	7	10.0	10.9
Total	14	22	18	16	70	100	109.4

(NOTE: The total number of responses exceeds 64 because some individuals indicated more than one answer to this question.)

Controlling the Park's protected animals or offering compensation when crop damage occurs was the improvement suggestion indicated most frequently by residents. This was a significant issue for many respondents, irrespective of village

of residence. Participants cited sorghum, maize, sweet potato, Irish potato, matoke¹, millet, beans and peas as crops targeted by Bwindi's forest elephants (*Loxodonta africana cyclotis*), olive baboons (*Papio cynocephalus anubis*) and, to a lesser extent, smaller monkeys (*Cercopithecus mitis stuhlmannii*; *Cercopithecus l'hoesti*; *Colobus abyssinicus*). There was consensus among interviewees that, while elephant disturbances were more prevalent during the rainy season, baboon crop destruction was a daily occurrence year round. This was reflected in the way respondents spoke about baboons as compared with other animals. One man from Mburameizi articulated his frustration that the Park is the only thing protecting these animals from upset residents, stating "These baboons who normally come to destroy the crops, we would have killed them or reduced them as a way of stopping them to do that" (Male aged 14-29, pers. comm., 29 June 2015).

Many respondents elaborated on possible ways the Park could address issues with crop destruction. One man from Ruhija suggested using some of the protected land within the Park for agricultural purposes, saying:

The Park, they should be digging plants, putting in Irish potatoes to benefit our families. Those lands, they are not using it because of the animals. And they should (be) refunding the things being destroyed. Like if the baboons or elephants have destroyed the Irish (potatoes), they should also compensate and give some funds to those people who have lost their crops, but they are not doing it. (Man aged 14-29, pers. comm., 23 June 2015)

A man aged 50+ from Rwesanziro explained another consequence of crop damage, stating that the Park "should keep refunding the crops (the animals) have destroyed

¹ Bananas

because, like for me, I am putting the children to guard from the animals and they are missing to go to school” (pers. comm., 16 July 2015).

A few respondents mentioned that chimpanzees (*Pan troglodytes schweinfurthii*) targeted the beehives in the buffer zone between the Park and residential land, which were allocated to the communities as part of revenue-sharing. There were also only a number of cases where Bwindi’s mountain gorillas (*Gorilla beringei beringei*) were said to have come out of the forest to feed on peoples’ fruit and Irish potatoes. When asked if this behaviour affected her attitude toward gorillas, one respondent from Rwesanziro said: “At least, for them, they do bring tourists. And tourists cannot come to see elephants. I have never seen one coming to see elephants” (Female aged 50+, pers. comm., 13 July 2015). The researcher then inquired whether the woman would think about elephants more positively if they, too, brought tourism. The respondent suggested that this would not make a difference answering that she would still think of them “in a bad way. Once they come out, these elephants, we cannot even sleep. You find everyone is outside, we have set a campfire, we’re outside controlling our crops. So I don’t like them.”

After addressing crop destruction, the next most popular suggestion for the Park/UWA was to make infrastructural improvements in the communities, such as roads and hospitals. A woman from Mburameizi said that better roads were sought after by many people who longed for an easier means of getting crops to market (Female aged 50+, pers. comm., 29 June 2015). The trading centre in Ruhija-canteen, which holds its weekly market day every Tuesday, is a great opportunity for residents from other villages to sell the cash crops they produce. A traditional healer from Rwesanziro, who collects medicinal herbs legally from one of the Park’s buffer zones, thought that:

(The Park) could construct some of the roads going in the communities as, for me, I am old. Then I could get a boda boda² to take me to the Park (so that) I can pick some medicine and then take me back. (Female aged 50+, pers. comm., 16 July 2015)

Employing more locals in the Park's activities was also important to people. It should be noted that most people who mentioned this were from the more developed village of Ruhija-canteen, where greater socio-economic opportunities exist for residents than in the other three more agricultural villages. One woman from Ruhija is critical of UWA jobs at Bwindi being outsourced to individuals who have experience working within Uganda's National Park system, but are not necessarily local. She explains that, "The Park should employ people from the local communities, born from here. They normally bring people from far away. And you find that there are people suffering here because they don't have a job" (Female aged 14-29, pers. comm. 23 June 2015). A man in Rwesanziro builds upon this idea, suggesting that residents have a greater claim to such coveted positions:

These leaders, you find that they are not even employing my son or grandson. They are just bringing in some people from Kampala to come and control the gorillas. Yet they are forgetting these people who have grown up taking care of them and protecting them. (Male aged 50+, pers. comm., 16 July 2015)

Several participants cited problems with the current revenue-sharing system. Among the criticisms expressed, was the process of getting money to the communities and many voiced their suspicions that some of the money gets 'eaten'³ as it travels through the various channels. One respondent from Ruhija said:

² Ugandan motorbike

³ Implies a dishonest appropriation of money

(Revenue-sharing) could be good if the donations go to the communities directly. But once they pass in the UWA Headquarters going to the LC's, they will not reach the local people deep in the villages where someone is suffering (Female aged 14-29, pers. comm., 24 June 2015).

Others felt that the distribution of revenue-sharing benefits should be proportionate to which villages are incurring the most negative impacts of conservation. A woman from Rwesanziro explained that:

You find when they are giving revenue-sharing, they are giving those people whom the animals are not even destroying their crops. They are giving them goats and they are leaving us who are neighbouring the Park (with) animals destroying our crops every day (Female aged 30-49, pers. comm., 13 July 2015).

The “other” category in Table 3.2 includes responses that were suggested fewer than five times. Improved access to potable water was indicated three times; support for disadvantaged groups like women and children came up twice; bringing local residents to see the gorillas also came up twice; and increasing pay for porters, habituating more gorillas, and facilitating social relationships between locals and tourists were each said once.

Only seven participants had nothing to say about future improvements the Park/UWA could make. However, this should not necessarily be interpreted that these respondents believed there was nothing wrong with the Park. Several stated they had no opinion or were simply unaware of ways the Park could or should improve, perhaps feeling it was not their place to say. For example, one woman from Rwesanziro expressed grievances with crop damage and indicated a mostly negative association with BINP, but said she had no opinion when asked what she

thought the Park could do to improve (Female aged 30-49, pers. comm., 16 July 2015). A woman from Mburameizi explicitly stated, “I have no say. I cannot refuse the Park to be there” (Female aged 50+, pers. comm., 29 June 2015).

3.3 Comparing Local and Tourist Ideas about Gorillas

3.3.1 Value Associations

Types of value residents and tourists associated with Bwindi’s mountain gorillas were indicated freely by both groups during SSIs and fell into nine categories: intrinsic, relationship to humans, educational, ecological, economic, social, valued by tourists, security, and no value. These value types were not indicated in response to one specific question, but became clear to the primary investigator throughout the course the SSI. Therefore, aside from those who said “no value”, most participants suggested more than one.

Before discussing this section’s results, it is important to understand what is meant by each of the categories created by the researcher. A typical response from an Eco-tourist who stressed the importance of intrinsic value was:

I think that every species should be kept alive no matter what it is. And that’s the only reason. So each little beetle that becomes extinct, that’s a pity. And of course (gorillas) are special but, again, each animal is special somehow.
(Female aged 50+, pers. comm., 19 July 2015)

The following is an example of a local resident’s response which the researcher assumed to mean intrinsic value:

I think about gorillas in a good way because God created them to stay in the forest. And for me, I like them to be there, to keep living in their forest where

they are happy and enjoying. So I cannot say that they should die or perish.

(Female aged 50+, pers. comm., 14 July 2015)

Gorillas were also valued by both LR and ET respondents for their close relationship to human beings. One Eco-tourist invoked anthropomorphism, describing that, “They’re so close to us (genetically) that you have a feeling that if you allow things to carry on, it’s almost like wiping away a race of people” (Male aged 50+, pers. comm., 10 July 2015). A resident who also thought such inter-species similarities were an important reason to conserve gorillas said, “We are neighbours of the gorillas. We think of them like the grand grand grand cousins or whatever. That’s what we normally call them as like a relationship of being so close to the gorillas” (Male aged 50+, pers. comm., 16 July 2015).

An Eco-tourist who saw educational value in the gorillas offered that, “They are connected to us (and) we can compare their behaviour to chimps and to bonobos and see all the differences and learn more about ourselves in the process” (Female aged 14-29, pers. comm., 12 July 2015). A man from Katoma discussed the educational value of living near to protected land and wildlife:

In Kampala, they don’t know forest... But here, (people) are aware there is elephant, baboon, monkey, gorilla even though they haven’t seen them. But once they turn 18 years they have the chance of becoming porters and then they see gorillas. (Male aged 30-49, pers. comm., 07 July 2015)

Tourists who cited the ecological value of gorillas addressed their role in the ecosystem, such as:

If you take out one element, suddenly the system will change and it will have effects on other things and we don’t know what the effects will be. So if the

gorillas are no longer there, what will be the driver to keep the forest here and then the forest will be gone. And how does the forest influence the climate? And how does the forest influence the water availability? It's all part of the system. (Female aged 50+, pers. comm., 18 July 2015)

When discussing gorilla conservation, many LR participants pointed to the importance of getting rainfall from the Park and the researcher interpreted this as a response which seemed to indicate that gorillas had a valuable role in the ecosystem.

The economic value of gorillas was acknowledged heavily by both groups and was understood as anything referencing the financial benefits of gorilla tourism at the local and national level.

Social value was something only referenced by residents and pertained to the opportunity to meet people from different parts of the world as a result of gorilla-related tourism. One man from Katoma felt that gorillas were important because:

A kid here in Katoma, some of them grow up when they have never seen a mzungu⁴ like you. So once you come, they get to know (that) this is a mzungu or this is how they look like. So they are helping because we are getting relationships, friendship. (Male aged 14-29, pers. comm., 06 July 2015)

“Valued by tourists” was something several residents pointed to as a reason gorillas were important. A typical indicator of this would be something like: “I like them naturally because these gorillas bring tourists which means they are so interesting” (Female aged 14-29, pers. comm., 13 July 2015) or “The visitors know

⁴ Swahili word for white person

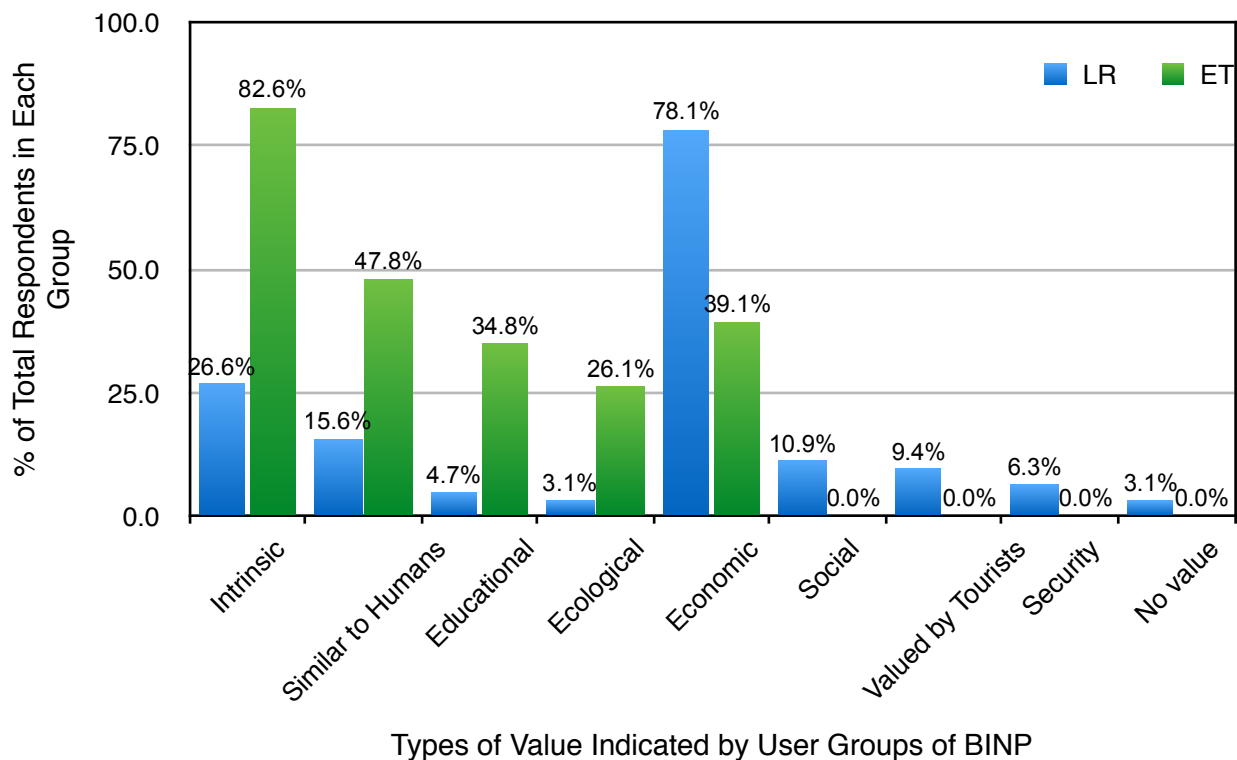
the good thing which is in the Park even if I do not have the idea” (Female aged 30-49, pers. comm., 24 June 2015).

Security was also a type of value only indicated by LR participants and this included any response suggesting that the value of conserving gorillas is to preserve safety and maintain an undisturbed living environment in the communities. For example, when asked about gorilla conservation, a woman from Mburameizi felt, “They should conserve them not to harm the local community, like once they come out they will like eat someone. So they should conserve them” (Female aged 14-29, pers. comm., 03 July 2015), while a man from Katoma said, “It is good to protect them so they don’t come out of the Park and destroy the communities’ crops” (Male aged 14-29, pers. comm., 06 July 2015).

Figure 3.7 illustrates trends in responses about value type based on user group of the Park (residents and tourists). Most of the 23 ET interview participants indicated that gorillas were important because of their intrinsic value. Inter-species similarities between gorillas and humans were mentioned slightly less but also thought to be important among this group. The economic value of gorillas was the next most referenced value type by ET respondents. About one third of participants felt that gorillas had educational value and approximately one fourth mentioned the ecological importance of gorillas. The LR user group had more variation in responses about value but, by far, most participants said they valued their neighbouring gorillas for their economic importance. Intrinsic value was acknowledged by roughly one fourth of the 64 interviewed residents. Human-like qualities were important to 15.6% of the LR group and 10.9% of participants said that the social aspect of gorilla tourism was valuable to them. The remaining value types

(valued by tourists, security, educational and ecological) were each suggested by less than 10% of LR respondents. A similarly small percentage of this group indicated that they associated no value at all with Bwindi's mountain gorillas.

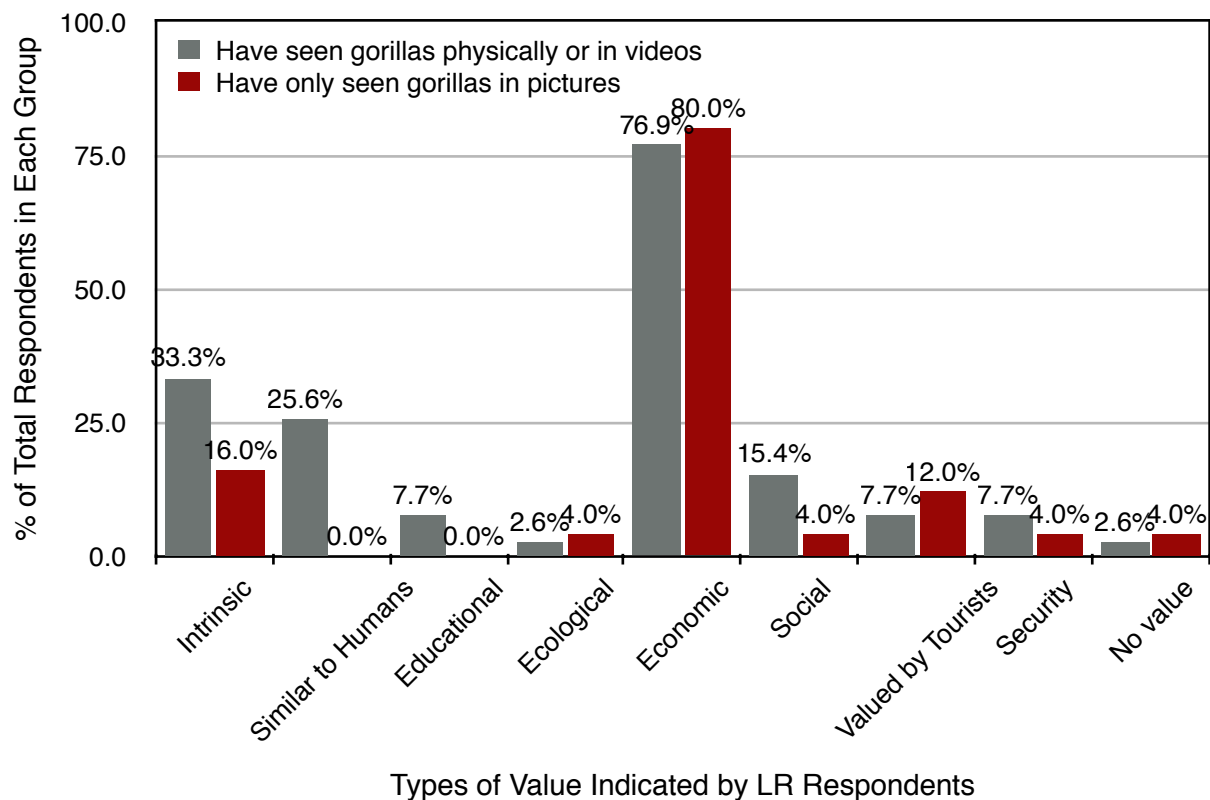
Figure 3.7: Types of Value Assigned to Mountain Gorillas According to User Group (N=87)



A graph was also prepared to see if responses about value type appeared to be informed by past experiences (in what capacity residents had seen gorillas in the past), as shown in Figure 3.8. Of the 64 interviewed local residents, 39 people indicated they had either seen gorillas physically or in videos (61%). These individuals were thought to be more familiar and knowledgeable about gorillas than the 25 respondents who said they had only ever seen the images of gorillas in photos, handcrafts, books or on t-shirts (39%). We can see in Figure 3.8 that the economic value of gorillas was reported as being important to roughly the same

percentage of people in both groups, regardless of how familiar they were with the species. However, the percentage of people from the more familiar group who indicated that gorillas have intrinsic value was more than twice the percentage of people from less familiar group who thought gorillas were intrinsically valuable. Additionally, more than one fourth of respondents who had seen gorillas either physically or in videos valued the gorillas' similarities to humans, while none of the respondents who had only seen gorillas in photos mentioned this. A higher percentage of people from the more familiar group cited educational value while than the less familiar group never referenced this. People who were more familiar with gorillas were also more likely to discuss social value and less likely to say that gorillas were important because they were valued by tourists. Other trends in responses for these two groups can be seen in Figure 3.8, as well.

Figure 3.8: Types of Value Residents Assign to Mountain Gorillas Based on Level of Familiarity (N=64)



Based on these graph results and the researcher's assumption that some types were mentioned concurrently with others, the eight value types⁵ were grouped into two categories at the discretion of the researcher. Intrinsic, similar to humans, educational, and ecological were labeled as Category 1. Economic, social, valued by tourists, and security were in Category 2. The Spearman's Rank Correlation revealed that the correlation coefficient (r_s) between categories 1 and 2 among all participants was negative and significant at the $p = .01$ level ($r_s = -.483$, $n = 87$, $p < .001$). The two categories were tested against the variable "user group", which included individuals who were coded as LR=0 and ET=1. Therefore, it was interpreted that "as user group increased" meant "when the user group was Eco-tourists". It was found that a significant positive correlation existed between the Eco-tourist group and category 1 ($r_s = .658$, $n = 87$, $p < .001$). Alternatively, Eco-tourists were significantly negatively correlated with category 2 ($r_s = -.409$, $n = 87$, $p < .001$).

The Spearman's Rank Correlation was also used to determine any positive or negative relationships between the categories of value and how familiar local residents were with the gorillas. The relationship between categories 1 and 2 among residents was also significantly negative ($r_s = -.308$, $n = 64$, $p = .013$) but at the $p = .05$ level. There was a significantly positive correlation between level of familiarity and category 1 ($r_s = .336$, $n = 64$, $p = .007$), while a slight positive relationship also existed between level of familiarity and category 2 but was not significant ($r_s = .031$, $n = 64$, $p = .809$).

⁵ This excludes "no value"

3.3.2 Indication of Ideological Shift or Learned Information

During the course of SSIs, some Eco-tourists and residents who had seen gorillas physically or in videos were asked whether their ideas about gorillas changed or if they learned anything new after the video/encounter in question. This question did not come up in all interviews, but it was posed to 21 Eco-tourists and 28 residents who had seen gorillas in such a capacity. 52.4% of these Eco-tourists (11 individuals) and 75.0% of the 28 residents (21 individuals) stated they learned or were impressed by something they didn't know before, the rest stating that their ideas about gorillas remained the same.

3.3.3 Local Interest in Gorillas

Toward the end of interviews, all LR participants (N=64) were asked whether they had ever felt an interest in seeing the gorillas the way tourists do. 55 individuals (85.9%) indicated that they would like to visit the gorillas in this way, on the condition that it was not so expensive. For individuals who said yes to this question, many were quick to follow their reply with the fact that they couldn't afford it. Of the demographic information collected from participants, the only variable that was a statistically significant predictor of this response was age group ($\chi^2 = 11.608$, $df = 2$, $p = .003$).

Interviewed residents were then asked: if they could participate in one ecotourism activity around Bwindi Impenetrable NP, what their preference would be. The researcher requested that the participants choose from one of the following: gorilla-trekking; bird watching; nature walks to see waterfalls and other wildlife; mountain biking; and visiting Lake Bunyonyi. More than half of the total LR respondents (53.1%) said that seeing the gorillas would be their top choice of all the proposed

options. Again, there was a statistically significant difference in respondents according to age group ($\chi^2 = 7.617$, $df = 2$, $p = .022$), while the researcher found the other demographic factors not to be statistically or qualitatively important in determining ecotourism preference.

CHAPTER 4. DISCUSSION

4.1 Relationship between Ruhija Communities and BINP

4.1.1 Current Local Attitudes toward the Park

The results from this study point to a mostly positive association with Bwindi Impenetrable National Park among its neighbouring residents in Ruhija sector, with many attributing improved socioeconomic conditions for Park-edge communities in Kitojo Parish to the Park's growing ecotourism. Such feedback is representative of reduced tensions in the area which have been facilitated by the provision of economic alternatives to extractive, commercial use of the Park's resources (Archabald & Naughton-Treves, 2001; Baker et al., 2012). Interviewed residents discussed direct benefits from the Park such as employment opportunities and revenue sharing, as well as more indirect financial benefits. "Those that are involved in making handcrafts, they sell them to whites. And these whites, when they come, sometimes they can give materials to the people around, like t-shirts" said one resident of Katoma (Male aged 14-29, pers. comm., 06 July 2015). When speaking positively about the Park, respondents also appreciated its role in producing rainfall. Scarce water availability is a recurring and troubling issue for this equatorial country, which normally experiences its dry seasons from June-August and December-February (ITFC, n.d.). A man from Ruhija explains, however, that even during the dry season, rain is more frequent in this area than other parts of Uganda and attributes that to the presence of BINP (Male aged 14-29, pers. comm., 23 June 2015).

Respondents also communicated strong negative associations with Bwindi. Others were conflicted in their responses about the Park and UWA, equally referencing their beneficial and adverse impacts. Participants' reluctance to commit to a response

may have been due to uncertainty about the future consequences of their opinions or so as not to seem unappreciative. Although these responses were expressed less frequently than absolutely positive attitudes toward the Park, they are important. Such responses among community members were primarily due to shared feelings of neglect and distrust. Many believed there to be corruption and deceit within the current tourism revenue-sharing (TRS) model. Others were frustrated by the lack of compensation for crop damage by protected animals, echoing a sense of skepticism regarding dishonest conduct by Park management. A man from Rwesanziro stated:

These UWA people have never shown us the document which says that if the animal destroys our crops, they should not refund us. If there was a document, we would get satisfied that maybe there is no refunding. But for us, they have never shown that, just telling us verbally that there is no compensation. (Male aged 50+, pers. comm., 16 July 2015)

Males, younger community members, more educated individuals, employed residents and those who lived within .5 km. of the Park boundary were the demographic groups more likely to have the most positive perceptions of BINP and its conservation efforts. In this area, considerable overlap exists between these groups as they are not completely independent of each other. Studies concerning the geographical patterns of the costs and benefits accrued from living near a protected area have produced varying results (Mackenzie, 2012; Sims, 2010). Ultimately, the spatial impacts of PAs must be determined individually with respect to site-specific conditions. Local job creation through tourism development in Ruhija-canteen and Mburameizi has allowed for greater employment possibilities in these Park-edge communities than in the more peripheral villages of Katoma and Rwesanziro. The villages nearer to the Park have also seen a greater expansion of schools and

education opportunities as a bi-product of tourism-related development. The more agricultural communities further from the Park also experience higher rates of crop destruction. This may be due to lower human density in these villages or, in the case of Rwesanziro, a nearby swamp that provides ideal habitat for elephants (ITFC researcher, 29 July 2015). Additionally, researchers from MPI mentioned that gorillas and other animals sometimes traveled outside Bwindi's borders, crossing the road near Katoma, to get to another part of the Park. This would make human-wildlife encounters more likely near this village (MPI researchers, 15 June 2015).

In addition to location as a possible predictor for attitudes toward BINP, other characteristics of participants were thought to have some effect on responses. A greater demand for male labor in these communities limits women in their income-earning options. Similarly, young and fit individuals are more likely to be employed than older residents. Differential access to secondary and post-secondary education in the region exists between the genders and economic classes, a system that disproportionately affects women with less financial security (Kwesiga, 2002; MPI researcher, pers. comm., 14 June 2015). It has also been suggested that a higher education influences the appointment of Park-related jobs, further reinforcing the established inequities (Sandbrook, 2010). The interviewed residents who seemed to receive the most direct advantages from the Park's tourism unsurprisingly spoke more favourably of its influence.

4.1.2 Local Suggestions for Future Improvement

Even those who articulated their unequivocal support for the Park offered some suggestions for improvement. According to SSIs and personal observations from a local community meeting led by one of UWA's community conservation rangers

(CCR), the most common criticisms called for improved strategies of managing crop damage by the Park's animals and compensating for losses when destruction does inevitably occur. Despite observed instances of crop feeding, gorillas seemed to be largely exempt from negative attitudes in the Ruhija tourism sector primarily due to their high-profile status. The conversation about problematic animals, instead, tended to focus on baboons and forest elephants with some mention of smaller monkeys.

A perceived failure of the Park to deliver on these fronts has caused extreme emotional and financial distress among residents, heightening existing tensions between them and BINP (Laudati, 2010b; Olupot et al., 2009). This was reflected in participant responses such as, "There is no way how they are helping me. For me, I am next to the forest and all the crops have been destroyed and I am eating nothing" (Female aged 50+, pers. comm., 13 July 2015). Seeming to suggest that local support for conservation is contingent on economic gains, a man from Rwesanziro opined, "They say conserve, conserve. Conserve what? Why should we conserve when we are not even gaining something?" (Male aged 50+, pers. comm., 16 July 2015).

Many LR respondents considered direct compensation of crop losses to be the best way for UWA leadership to improve Park-community relations. However, the assurance of reactive solutions to crop damages from local wildlife could lead to a reduced incentive for proactive, preventative measures and increase the likelihood of fraudulent claims (Nyhus et al., 2005). It has also been argued that full compensation to damaged crop yields may contribute to agricultural expansion and increased anthropogenic pressure on vulnerable habitats (Bulte & Rondeau, 2005).

As an alternative way to mitigate issues at the human-agriculture boundary and contribute to poverty reduction in Park-adjacent communities, a tourism revenue-sharing policy was developed by the Ugandan government in the early 1990s. The program has provided important benefits to communities bearing the costs of conservation and many who spoke favourably of the Park cited TRS as the primary reason. However, the imperfect system has not been without controversy. A considerable number of villagers interviewed around Ruhija sector remain critical of TRS and felt that improvement of the program is what Park management should focus on most. Some believed there to be fraud within the current system and others voiced their discontent with the equitable distribution of funds to villages, suggesting it be need-based and proportionate to the extent of conservation-related grievances. The researcher also observed that there seemed to be some discrepancy between official TRS policy and how it was understood by community members. One example of this was: “We normally get some percentage of the money. What these tourists pay, 20% goes to the community and we sometimes get goats through revenue-sharing” (Male aged 30-49, peers. comm., 24 June 2015). A Ugandan research assistant associated with the Park believed that only 1% of the price tourists pay goes to the communities and thought this to be unjust (Male aged 14-29, pers. comm., 17 July 2015). While this is closer to the actual amount that goes towards TRS, the complex nuances of the revenue-sharing system at Bwindi seemed to be lost on many of its residents. The 20% most respondents believed to be taken from the FNR gorilla permit (600 USD) actually comes from the 40 USD gate entrance fee that is included in the price of the permit. An additional 10 USD on every permit goes to the communities, making the maximum allocation to TRS per permit 18 USD. With most people believing 20% of all tourist revenue is designated for the Park’s

neighbouring residents, this serious miscommunication between Park management and the communities is perhaps one of the reasons for local acrimony and accusations of fraud within UWA.

4.2 Community and Tourist Ideas About Gorillas

4.2.1 Value Associations

Ideas about nature and wildlife conservation among participants seemed to be informed by experiences and socio-cultural value systems. When comparing the LR and ET user groups of the Park, it should be noted that Eco-tourists are a much more specific group and, as such, showed less variation in responses than residents. The eight value types participants indicated in connection with gorillas can be categorised using Byers' (1996) outline of uses/values for nonhuman species and ecosystems. He explains that the distinction between instrumental/utilitarian value and intrinsic/existence value "is certainly the major ethical watershed in thinking about the value of nonhuman species and ecosystems" (p. 5). In this way, the intrinsic value cited by participants should be considered on its own while the other seven value types are viewed as important because of their use to humans. Within the instrumental/use category, there are material and non-material values. Gorillas' educational value, relationship to humans and the fact that they are valued by tourists fall under non-material values, which assigns importance on the basis of psychological or emotive factors. The aspect of social value that includes the opportunity to forge social relationships in which material benefits are not expected would also fall under this category. Material values include direct and indirect material benefits to humans. Economic value is a direct material benefit. Security and ecological value are indirect material benefits, which Byers defines as life

support and ecosystem services. When social value was expected to produce future material benefits (eg. when tourists sponsor a child's secondary education in Kabale), it was also categorised as having indirect material value.

It was discovered that intrinsic, anthropomorphic, educational and ecological value associations were often jointly mentioned, while economic, security, social and valued by tourists came up together more frequently. In discussing the valuation of nature and its resources, Byers describes that, in general, direct material benefits are prioritised first; followed by indirect material values; and then non-material values. Lastly, he says, humans consider the intrinsic value of wildlife and their environment. The value types indicated by participants of this study were more often said in conjunction with other types based on their proximity to each other in Byers' hierarchy. For example, Eco-tourists tended to indicate intrinsic value with other values lower on the chain such as relationship to humans, a non-material value. Byers discusses the pros and cons of each category, but does not compare their importance since considerable variation can also exist within each category. Therefore, the use/value types indicated by this study's participants that fall within the same category should not necessarily be considered the same but, instead, evaluated individually for their merits and weaknesses.

4.2.2. Valuation of Mountain Gorillas among Tourists

As expected, the intrinsic value of gorillas was heavily cited by the Eco-tourist group, several of whom even seemed confused at questions that asked why they believed gorillas were worth conserving, implying that the answer was obvious. In line with this, many tourists felt a sense of urgency to preserve this "flagship" endangered species for the future generations "so we don't have to explain to them what a gorilla

is” (Female aged 30-49, pers. comm., 15 July 2015). Several acknowledged their own anthropocentric desire to save a species so genetically and physically similar to our own, such as, “They’re so close to us, that you have a feeling that if you allow things to carry on, it’s almost like wiping away a race of people” (Male aged 50+, pers. comm., 10 July 2015). This suggests giving conservation priority based on the extent of “humanness” in species (Sowards, 2006). Such sentiments overlapped with educational value when tourists discussed the potential to learn from gorillas about our own species’ evolutionary history. More than one third of Eco-tourists appreciated the economic value of gorillas for Uganda and its local communities but, in contrast to residents, none of the ET respondents expressed this as the sole reason they should be conserved.

The interview participants from this group who felt that the mountain gorilla’s role in the ecosystem was important admitted that they didn’t know exactly why. Gorillas have been identified as one of the most important species for African forest regeneration for the way they engage with their environment, including seed dispersal and nest construction behaviours (Petre et al., 2013; UNEP, 2009). Hill (2002) notes the particular significance of large-bodied primates to disperse larger seeds that smaller frugivorous primates are unable to manage. It is possible that this user group could benefit from a stronger environmental education component to gorilla-trekking that focuses on such ecological importance. Russon and Susilo (2014) argue that, “To be effective, education should go beyond making tourists aware of conservation problems to changing their attitudes and behaviors so as to solve these problems” (p. 83). By diversifying the valuation of this species to include more non-intrinsic significance, the argument for its continued existence will be strengthened.

4.2.3 Valuation of Mountain Gorillas among Residents

For local residents, the economic value of gorillas was indicated by roughly the same percentage as Eco-tourists who pointed to intrinsic value. Despite the focus on economic value in this group, they offered more varied responses than tourists regarding the use/value they associated with mountain gorillas. This reflects a more representative sample than the ET group, which seemed to be characterised by shared ideologies and demographic traits.

The concept of leakage in tourism holds that the revenue generated in Third World countries is ultimately returned to the Western economies that control the flow of foreign exchange (Brown, 1998; Sandbrook, 2010). Growing empirical evidence to support this phenomenon challenges the argument of “tourism as an engine for pro-poor growth” (Roe et al., 2004) and, instead, suggests its role in perpetuating poverty and dependency (Laudati, 2010a). While tourism leakage can be prohibitive, at best, to the development of the Third World, many communities within such countries have benefited from the immediate economic gains that tourism yields at the local level. As an Eco-tourist from the United States observed:

(Gorilla tourism) is a tourist draw. They're million dollar animals because people are flying in, having guides drive them up here, hiring vehicles, staying in lodges, buying food, people are working in the hotels and then you have all the rangers and everything. So I think it's very important for the economy to not let these animals fall by the wayside. (Male Eco-tourist aged 50+, pers. comm., 20 July 2015).

Such promotion of the economic potential of wildlife and natural areas has helped to initiate local support for conservation efforts around the world and this is true for Bwindi Impenetrable NP, as well (Sandbrook, 2006).

The problems with such a valuation occur when commodified ecosystem elements fall short of the expectations. An over-dependence on the gorilla tourism product at BINP could have possible implications for community support when international involvement in this sector is low (Holland et al., 2003). Bwindi Impenetrable NP saw high tourist numbers during the months of April and May 2015 when the cost of gorilla permits was reduced as part of a promotional strategy of the Uganda Wildlife Authority (UWA accountant, pers. comm., 18 June 2015). However, there was a sharp decline in June when prices went back up. The warden at Ruhija sector told the researcher there were many cancellations during this month (pers. comm., 16 July 2015). The manager of one of the high-end lodges in Ruhija expressed his concern, stating that many local people and businesses depend on this important source of revenue. He attributed the drop in tourism to a Western tendency to overreact to global news, citing that the 2014 Ebola outbreak in West Africa has made the international community generally wary of the continent, as a whole (pers. comm., 14 June 2015).

Another potentially problematic response from some LR participants was the idea that gorillas have value because of their importance to tourists. Although this value type can be categorised as non-material in Byers' hierarchy, it raises more issues than this label would suggest. Prioritising species in such a way discourages independent thought, forcing residents to consider wildlife on the basis of their importance to the international community. Moreover, some individuals maligned other wildlife they considered to be less valuable on these grounds. "Gorillas are

useful over any other animals... because clients come from abroad to visit the gorillas, not any other (animal) like elephant or baboon” (Female aged 30-49, pers. comm., 03 July 2015). Baboons, officially classified as vermin under Uganda wildlife law, were particularly vilified despite belonging to the same primate order as endangered gorillas and monkeys.

For some respondents, there were misunderstandings about security. Several residents assumed that the habituation of gorillas meant these animals could no longer harm them or cause destruction; and they valued them on this premise. While this idea is likely to make communities more receptive to gorillas, conservation educators should take care to emphasise that these are still wild animals and should continue to be thought of as such.

Knowledge about mountain gorillas was stronger among residents who had either seen them physically or in videos, as opposed to individuals who had only ever seen the images of gorillas. While these groups assigned almost the same economic significance to gorillas, the former was more likely to reference the species’ intrinsic or non-material use/value. In contrast, the latter primarily talked about them in terms of material uses/values. Therefore, those who had seen them physically or in videos seemed to be more sensitised to the plight of this endangered great ape, which suggests that prior experience and familiarity with gorillas influences the way people think and talk about them.

4.2.4 Potential Conservation Impact of Experiential Learning

A strong majority of local residents who had either seen gorillas physically or in videos indicated that they either learned something new or began to think about the animals in a different way, as a result of the event. This was true for all individuals

who had a physical encounter with a mountain gorilla and for most people who had seen videos of them as part of local conservation education efforts. This suggests that physical encounters with wildlife may have had slightly more of an impact on people than the conservation videos. For many, increased familiarity with gorillas served as both an emotive and an educational experience. Common responses about how individuals were affected by the events included examples such as, “At first, I thought the gorilla could eat someone and is maybe aggressive. Then to see them, they were not doing anything. They were quiet and humble. So my thinking changed” (Female aged 50+, pers. comm., 14 July 2015). A former porter for the Park said the opportunity to visit gorillas allowed him to better understand why they were so valued by tourists:

Before seeing them, the fact that I did not know how they look like and their advantage to us, I could not expect much benefits from them. But after seeing them and knowing their advantage to us, I loved them very much. And as I meet those whites coming to see them, I become happy because now I know what is important about seeing the gorillas. (Male aged 14-29, pers. comm., 06 July 2015)

Participants who became more familiar with gorillas through some type of experiential learning also mentioned that they were surprised by how human-like they are; and indicated that this anthropomorphism positively affected their attitudes toward the species. A man from Mburameizi said that,

Before I saw them in a video, I (thought) maybe it's a very bad animal or nothing I could think is useful. But after seeing them in the video, they looked like a person and were so cute... I am thinking that if they habituate it very

well, it can even come in the communities and stay⁶ even with the people. So

I am thinking it is part of people, part of us, the way it is looking. (Male aged

30-49, pers. comm., 03 July 2015)

Rose (as cited in Sowards, 2006, p. 49) describes this sensitisation through identification as “profound interspecies events, in which humans develop connections with other species that change their thinking or understanding of that species and other aspects of the natural world.” While this concept is likely to promote increased appreciation of gorillas among residents, maintaining a healthy fear of wild animals should be encouraged by conservation managers to reduce the potential of future threats from increased encounters (Weidner, 2006).

Alternatively, people who had only seen gorillas in pictures or photos tended to be more apprehensive toward them. They attributed this to the stories people perpetuate about gorillas eating humans. One woman was told that “when they were not habituated, they could eat someone’s finger” (Female aged 30-49, pers. comm., 08 July 2015). These respondents also said that the images showing gorillas suggest aggression or unfriendliness. “The way the gorilla is looking like this here (in this photo)— if this is the way he is also in the forest, then this is scary. Because here, he is looking as if he is rude and big” (Female aged 50+, pers. comm., 29 June 2015).

Just over half of the participants from the Eco-tourist group experienced some change in their thinking as a result of gorilla-trekking. This included learned information about their diet, social structure, peacefulness and more anthropomorphic characteristics than was expected. Several blamed prior

⁶ Used synonymously with ‘live’

misconceptions about gorillas on the media for promoting inaccurate depictions of these animals for entertainment purposes. One woman said that she “always thought they were an aggressive animal— from King Kong” (Female aged 30-49, pers. comm., 30 June 2015). Another tourist expanded upon this, saying:

In movies, the gorilla is really aggressive— always really dangerous. And that’s a plot device. If you have a gentle, big animal, where’s the action? If they’re going to be in a movie, they’re going to be vicious. When you get to know any of these animals, you realise they are quite a bit different than they’re represented. (Male aged 50+, pers. comm., 27 June 2015)

Most, however, indicated that their experience visiting gorillas had more of an emotional impact than an educational one. As one tourist from Austria said:

It was really amazing to look at these peaceful animals. One of us even started to cry because she was so moved by the baby and it is just such a pity that they are endangered animals. I think we will never forget it. (Female aged 50+, pers. comm., 19 July 2015)

Others echoed these sentiments, saying that the experience only confirmed what they already knew or felt about gorilla. This pattern is representative of greater access to conservation education resources in Western countries. Wildlife documentaries, magazines, television programs and scientific papers and literature have likely aided in increased environmental knowledge and sensitivity in this part of the world. However, this user group acknowledged the differences between intellectual familiarity and the added layer of intimacy that gorilla tourism provides.

It really makes a difference if you see things in reality, and that applies to the gorillas as well... If you see this living thing and it is very close to you and you

see the siblings of the gorillas playing with each other, it makes it all very tangible. That's the impression that you take home. (Female aged 50+, pers. comm., 18 July 2015)

In contrast, some individuals from the ET group were of the opinion that such a program was unlikely to affect peoples' ideologies.

I don't think that really anyone's opinion is going to change (after seeing the gorillas). I think if you invest the time, money and effort to get out here, you're obviously already invested in it to begin with. And I don't think that seeing them is really going to change people much. (Male aged 30-49, pers. comm., 19 June 2015)

Similarly, in terms of the educational impact of gorilla-trekking, some were critical of its narrow influence.

If this is here for people who already are sold to the idea, what's the benefit? It's the locals who need to be sold to the idea. It needs to be more accessible to the locals. It needs to be cheaper for them. Give the Ugandans a much better deal to come. (Male aged 50+, pers. comm., 18 July 2015)

Understanding how integrative environmental education can inform conservation sensibilities among different user groups can be an important tool for developing future awareness strategies and facilitating the transition from a tourism culture to a conservation culture (Russon & Susilo, 2014).

4.2.5 Capitalising on Local Curiosity and Interest in Gorillas

The question is how difficult it will be to initiate such an ideological shift in communities where the local economies are inextricably tied to tourism revenue. General disinterest in wildlife can be a difficult obstacle for conservation progress

(Scheyvens, 1999). Conservation stakeholders should, therefore, explore ways of capitalising on existing curiosity and interest in mountain gorillas among Bwindi's communities. In Ruhija, an overwhelming majority of local participants responded positively to a question that asked whether they had ever wanted to visit the Park's mountain gorillas "as the mzungu do" (Male aged 30-49, pers. comm., 07 July 2015). More than half of LR participants indicated that, of all the ecotourism products at BINP, gorilla-trekking was the most intriguing to them.

A local primary school teacher from Mburameizi stated, "Actually, me (as) a teacher, in most cases we teach about these gorillas. So I would like to visit them and see them physically so that I earn more knowledge about them" (Male aged 30-49, pers. comm., 03 July 2015). Echoing the importance of conservation education, another resident suggested:

Those who will be excited so much will be the youth, but (also) those who have kids as they will even go (back) to their homes telling the children, 'I visited the gorilla and the gorilla is like this and this, so don't destroy the National Park and like conservation.' So they will even teach their children how the gorilla is looking like and the children will also like the conservation (Male aged 14-29, pers. comm., 03 July 2015).

A man who portered for the Park expressed his appreciation for the job opportunity, but said he envied the tourist experience. "I feel like visiting as the clients normally do because after tracking they will give me a certificate. And when I am just portering, I am just carrying the bag, I am behind not seeing them well" (Male aged 14-29, pers. comm., 14 July 2015).

Many individuals said they were afraid but curious, suggesting that their enthusiasm outweighed their fear. Several people who had seen videos of gorillas wanted to physically confirm what they saw. However, respondents often mentioned that although they were interested, limiting factors like age, disability, and particularly cost were too prohibitive. Additionally, age and disability seemed to be the factors influencing respondents who said they would not be interested in this activity. This could explain why age group was the only variable significant in predicting the desire to visit gorillas and ecotourism preference among LR respondents. The fact that variation in responses did not seem to be influenced by most demographic factors could be useful in future community outreach programs that aim to build upon the existing local interest and enthusiasm for this species.

CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Despite having a mostly positive association with the Park, local residents experienced significant consequences of living near a protected area. Negative attitudes were more likely to be felt according to certain demographic characteristics and outreach should, therefore, be considered for these marginalised groups. Additionally, poor communication between Park management and the communities has contributed to policy misunderstandings and resentment. Although local conservation awareness and sensitisation strategies have been effective in the region, there is still a lack of knowledge about local wildlife and the value residents associate with the neighbouring mountain gorillas is primarily economic. Continued efforts could help clarify some of the current misconceptions about local animals and diversify the wildlife value orientations that exist within these communities. Experiential learning seemed to have had an effect on understanding and sensitivity toward wildlife among both user groups. This was particularly true for local residents, who have limited access to environmental education.

Conservation education for residents of species-range countries is considered by many academics to be one of the best strategies for ensuring long-term community-supported conservation (Fien et al., 2001). International universities with advanced degree programs in conservation, for example, offer special scholarships to individuals from such countries to empower their citizens and support internally managed conservation efforts around the world. If this same concept were applied to ecotourism, it might take the form of a competition-based sponsorship program for local residents to experience their country's natural attractions that draw such high

numbers of international visitors, such as gorilla-trekking. A collaborative initiative of AWF, IGCP, Fauna and Flora International, WWF and the Annenberg Foundation recently funded 100 local high school students to participate in a mountain gorilla expedition at Volcanoes National Park, Rwanda (African Wildlife Foundation, n.d.). Current interest in and enthusiasm for mountain gorillas among residents in Ruhija sector could be promising for the success of a similar initiative at Bwindi Impenetrable NP. Further developed studies will need to be undertaken to assess the potential impact of such a program for community-supported conservation in the area.

5.2 Recommendations for Future Planning

The following recommendations have been produced for UWA management at Bwindi Impenetrable National Park, under the assumption that future research projects in the region support the findings from this preliminary assessment:

1. Provide greater transparency and clarification of TRS guidelines to communities. Explore the possibility of distributing TRS through stretcher groups⁷, rather than local government to minimise speculation of institutionalised corruption (Blomley, 2003; Mbayahi, 2015).
2. Improve community outreach by targeting marginalised groups (women, elderly, peripheral villages) to provide better access to skills training, employment and education opportunities.
3. Implement conservation awareness strategies that continue to encourage a diverse valuation of wildlife.

⁷ Local community institutions

4. Develop integrative experiential learning opportunities for local residents to see and understand the wildlife and ecosystem elements they are taught to conserve.
5. Support further anthropological studies that focus on Park-community and human-wildlife relations, as well as the impacts of conservation education on community value systems.

REFERENCES:

Adams, W. M., & Infield, M. (2003). Who is on the gorilla's payroll? Claims on tourist revenue from a Ugandan National Park. *World Development*, 31(1), 177-190.

African Wildlife Foundation (n.d.). Student gorilla trek: Facilitating conservation education through interaction with wildlife. Accessed on 15 August 2015 from: <https://www.awf.org/projects/student-gorilla-trek>

Agresti, A. & Finlay, B. (2008). *Statistical methods for the social sciences* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Ahebwa, W. M., van der Duim, R., & Sandbrook, C. (2012). Tourism revenue sharing policy at Bwindi Impenetrable National Park, Uganda: A policy arrangements approach. *Journal of Sustainable Tourism*, 20(3), 377-394.

Aharikundira, M., & Tweheyo, M. (2011). Human-wildlife conflict and its implication for conservation around Bwindi Impenetrable National Park. *USDA Forest Service Proceedings*, 39-44.

Archabald, K., & Naughton-Treves, L. (2001). Tourism revenue-sharing around national parks in Western Uganda: Early efforts to identify and reward local communities. *Environmental Conservation*, 28(02), 135-149.

Baker, J., Milner-Gulland, E. J., & Leader-Williams, N.I.G.E.L. (2012). Park gazettement and integrated conservation and development as factors in community conflict at Bwindi Impenetrable Forest, Uganda. *Conservation Biology*, 26(1), 160-170.

Biryahwaho, B. (2002). Community Perspectives Towards Management of Crop raiding Animals: Experiences of Care-DTC with Communities Living Adjacent to Bwindi Impenetrable and Mgahinga Gorilla National Parks, Southwest Uganda. *Human-Wildlife Conflict: Identifying the Problem and Possible Solutions*, 1, 46-58.

Blomley, T. (2003). Natural resource conflict management: The case of Bwindi Impenetrable and Mgahinga Gorilla National Parks, southwestern Uganda. *CARE International Uganda*, 231-250.

Brown, D. O. (1998). In search of an appropriate form of tourism for Africa: Lessons from the past and suggestions for the future. *Tourism Management*, 19(3), 237-245.

Bulte, E. H., & Rondeau, D. (2005). Research and management viewpoint: Why compensating wildlife damages may be bad for conservation. *Journal of Wildlife Management*, 69(1), 14-19.

Byers, B. A. (1996). Understanding and influencing behaviors in conservation and natural resources management (No. 4). Washington, DC: Biodiversity Support Program.

Cater, E. (2006). Ecotourism as a western construct. *Journal of Ecotourism*, 5(1-2), 23-39.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: SAGE Publications, Inc.

Cochran, W. G. (1954). Some methods of strengthening the common chi-square test. *Biometrics*, 10, 417-451.

Cohen, D., & Crabtree, B. (2006). Qualitative research guidelines project. Accessed on 18 May 2015 from: http://www.sswm.info/sites/default/files/reference_attachments/COHEN%202006%20Semistructured%20Interview.pdf

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. SAGE Publications, Inc.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Dorsey, E. R., Steeves, H. L., & Porras, L. E. (2004). Advertising ecotourism on the internet: Commodifying environment and culture. *New Media & Society*, 6(6), 753-779.

Draulans, D., & Van Krunkelsven, E. (2002). The impact of war on forest areas in the Democratic Republic of Congo. *Oryx*, 36(01), 35-40.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London, UK: SAGE Publications, Ltd.

Fien, J., Scott, W., & Tilbury, D. (2001). Education and conservation: Lessons from an evaluation. *Environmental Education Research*, 7(4), 379-395.

Fossey, E., Harvey, C., McDermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry*, 36(6), 717-732.

Great Lakes Safaris, Ltd. (2015). Habituated gorilla families in Uganda. Accessed on 26 July 2015 from: <http://safari-uganda.com/to-see/gorilla-safari-information/gorilla-families-in-uganda/>

Hamilton, A., Cunningham, A., Byarugaba, D., & Kayanja, F. (2000). Conservation in a region of political instability: Bwindi Impenetrable forest, Uganda. *Conservation Biology*, 14(6), 1722-1725.

Hill, C. M. (2002). Primate conservation and local communities—ethical issues and debates. *American Anthropologist*, 104(4), 1184-1194.

Hockings, K., & Humle, T. (2009). Best practice guidelines for the prevention and mitigation of conflict between humans and great apes. Gland, Switzerland: *IUCN/SSC Primate Specialist Group (PSG)*, 1-41.

Holland, J., Burian, M., & Dixey, L. (2003). *Tourism in poor rural areas: Diversifying the product and expanding the benefits in rural Uganda and the Czech Republic*. Unpublished manuscript, United Kingdom: PPT Partnership.

ITFC (n.d.). Bwindi Impenetrable National Park. Accessed on 07 August 2015 from: <http://itfc.must.ac.ug/bwindi-impenetrable-national-park>

IUCN (2015). *2015 IUCN Red List of Threatened Species*, 2. Gland, Switzerland: IUCN. Accessed on 06 June 2015 from: www.iucnredlist.org

Junker, J., Blake, S., Boesch, C., Campbell, G., Toit, L. D., Duvall, C., ... & Kuehl, H. S. (2012). Recent decline in suitable environmental conditions for African great apes. *Diversity and Distributions*, 18(11), 1077-1091.

Khan, M. M. (1997). Tourism development and dependency theory: Mass tourism vs. ecotourism. *Annals of Tourism Research*, 24(4), 988-991.

Kwesiga, J. C. (2002). *Women's access to higher education in Africa: Uganda's experience*. Kampala, Uganda: Fountain Publishers.

Laudati, A. A. (2010a). Ecotourism: the modern predator? Implications of gorilla tourism on local livelihoods in Bwindi Impenetrable National Park, Uganda. *Environment and Planning D abstract*, 28(4), 726-743.

Laudati, A. A. (2010b). The encroaching forest: Struggles over land and resources on the boundary of Bwindi Impenetrable National Park, Uganda. *Society and Natural Resources*, 23(8), 776-789.

Lepp, A., & Harris, J. (2008). Tourism and national identity in Uganda. *International Journal of Tourism Research*, 10(6), 525-536.

Macfie, E. J., & Williamson, E. A. (2010). Best practice guidelines for great ape tourism. Gland, Switzerland: *IUCN/SSC Primate Specialist Group (PSG)*, 1-78.

Mackenzie, C. A. (2012). Accruing benefit or loss from a protected area: Location matters. *Ecological Economics*, 76, 119-129.

Madden, F. (1999). The management of human-mountain gorilla (*Gorilla gorilla beringei*) conflict in Bwindi Impenetrable National Park. Washington, DC: International Gorilla Conservation Program, 1-9.

Mauthoor, A. (2011). Pedal Powered Cinema. Accessed on August 12 2015 from: <http://www.4apes.com/news/ape-alliance/item/91-Pedal-Powered-Cinema-20100428>

Mazimhaka, J. (2007). Diversifying Rwanda's tourism industry: A role for domestic tourism. *Development Southern Africa*, 24(3), 491-504.

Mbayahi, A. (2015, 26 May). Achievements and missed opportunities: Stakeholders assess the performance of the revenue sharing program in Kisoro and Kabale districts. District, Uganda: International Gorilla Conservation Program. Accessed on 23 August 2015 from: <http://igcp.org/blog/achievements-and-missed-opportunities-stakeholders-assess-the-performance-of-the-revenue-sharing-program-in-kisoro-district-uganda/>

McNeilage, A., Robbins, M. M., Gray, M., Olupot, W., Babaasa, D., Bitariho, R., ... & Baker, J. (2006). Census of the mountain gorilla *Gorilla beringei beringei* population in Bwindi Impenetrable National Park, Uganda. *Oryx*, 40(04), 419-427.

Miles, L., Caldecott, J., & Nellemann, C. (2005). Challenges to great ape survival. *World atlas of great apes and their conservation*. Berkeley, CA: UNEP World Conservation Monitoring Centre, University of California Press, 217-241.

Myers Jr, O. E., Saunders, C. D., & Garrett, E. (2003). What do children think animals need? Aesthetic and psycho-social conceptions. *Environmental Education Research*, 9(3), 305-325.

Namara, A., Gray, M., & McNeilage, A. (2000). *People and Bwindi forest: A historical account as given by local community members*. Unpublished manuscript, Kabale, Uganda: Institute of Tropical Forest Conservation.

Namara, A. (2006). From paternalism to real partnership with local communities? Experiences from Bwindi Impenetrable National Park (Uganda). *Africa Development*, 31(2), 39-68.

Newing, H. (2010). *Conducting research in conservation: Social science methods and practice*. London, UK: Routledge.

Nyhus, P. J., Osofsky, S. A., Ferraro, P., Madden, F., & Fischer, H. (2005). *Bearing the costs of human-wildlife conflict: the challenges of compensation schemes*. Unpublished manuscript, Cambridge, UK: Conservation Biology Series, 9, 107.

Olupot, W., Barigiyira, R., & Chapman, C. A. (2009). The status of anthropogenic threat at the people-park interface of Bwindi Impenetrable National Park, Uganda. *Environmental Conservation*, 36(01), 41-50.

Oxford Brookes University (n.d.). *Ethical standards for research involving human participants*. Unpublished manuscript, Oxford, UK: Oxford Brookes University.

Petre, C. A., Tagg, N., Huarez, B., Beudels-Jamar, R., Huynen, M. C., Doucet, J. I. (2013). Role of the western lowland gorilla (*Gorilla gorilla gorilla*) in seed dispersal in tropical forests and implications of its decline. *Biotechnologie Agronomie Societe et Environnement*, 17(3), 517-526

Plumptre, A. J., Bizumuremyi, J. B., Uwimana, F., & Ndaruhebeye, J. D. (1997). The effects of the Rwandan civil war on poaching of ungulates in the Parc National des Volcans. *Oryx*, 31(4), 265-273.

Plumptre, A. J., Davenport, T. R., Behangana, M., Kityo, R., Eilu, G., Ssegawa, P., . . . Moyer, D. (2007). The biodiversity of the Albertine Rift. *Biological Conservation*, 134(2), 178-194.

Population Reference Bureau (2006). 2006 World Population Data Sheet. Accessed on 31 May 2015 from: <http://www.prb.org/pdf06/06WorldDataSheet.pdf>

Remis, M. J., & Hardin, R. (2009). Transvalued species in an African forest. *Conservation Biology*, 23(6), 1588-1596.

Robbins, M. M., Roy, J., Kato, R., Kabano, P., Basabose, A., Tibenda, E., ... & Gray, G. (2011). Bwindi mountain gorilla census 2011—Summary of results. *Uganda Wildlife Authority*, 28.

Roe, D., Ashley, C., Page, S., & Meyer, D. (2004). Tourism and the poor analysing and interpreting tourism statistics from a poverty perspective. Chicago, IL, 1-29.

Russon, A. E., & Susilo, A. (2014). Orangutan tourism and conservation: 35 years' experience. In A. E. Russon & J. Wallis (Eds.), *Primate Tourism: A Tool for Conservation?* Cambridge, UK: Cambridge University Press. 76-97.

Sandbrook, C. G. (2006). *Tourism, conservation and livelihoods: The impacts of gorilla tracking at Bwindi Impenetrable National Park, Uganda*. Unpublished manuscript, London, UK: University College London.

Sandbrook, C. G. (2010). Putting leakage in its place: The significance of retained tourism revenue in the local context in rural Uganda. *Journal of International Development*, 22(1), 124-136.

Scheyvens, R. (1999). Ecotourism and the empowerment of local communities. *Tourism Management*, 20(2), 245-249.

Seiler, N., & Robbins, M. M. (n.d). Ranging on Community Land and Crop-Raiding by Bwindi Gorillas. Accessed on 03 August from: <http://www.berggorilla.org/en/home/news-archive/article-view/ranging-on-community-land-and-crop-raiding-by-bwindi-gorillas/>

Sicotte, P., & Uwengeli, P. (2002). Reflections on the concept of nature and gorillas in Rwanda: Implications for conservation. *Cambridge Studies in Biological and Evolutionary Anthropology*, 17. 163-186.

Sims, K. R. (2010). Conservation and development: Evidence from Thai protected areas. *Journal of Environmental Economics and Management*, 60(2), 94-114.

Sowards, S. K. (2006). Identification through orangutans: Destabilizing the nature/culture dualism. *Ethics & the Environment*, 11(2), 45-61.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: SAGE Publications, Inc.

Stevens, T. H., Echeverria, J., Glass, R. J., Hager, T., & More, T. A. (1991). Measuring the existence value of wildlife: what do CVM estimates really show? *Land Economics*, 390-400.

Stronza, A. (2008). The bold agenda of ecotourism. *Ecotourism and Conservation in the Americas*, 7, 3-17.

Strydom, H., & Delport, C. S. L. (2002). Sampling and pilot study in qualitative research. *Research at Grassroots*, 333-338.

Thomas, N., & O'Kane, C. (1998). The ethics of participatory research with children. *Children & Society*, 12, 336-348. doi: 10.1111/j.1099-0860.1998.tb00090.x

Tumusiime, D. M., & Sjaastad, E. (2014). Conservation and development: Justice, inequality, and attitudes around Bwindi Impenetrable National Park. *Journal of Development Studies*, 50(2), 204-225.

Turinawe, E., Clive, J., Robbins, M. (2014). Conservation Education for Primary Schools Neighboring Bwindi Impenetrable National Park Annual Report – 2014. Unpublished manuscript, Leipzig, Germany: Max Planck Institute for Evolutionary Anthropology.

Uganda Bureau of Statistics (2010). Main source of household earning. *UBOS: Uganda National Household Surveys Report 2009/2010*. Accessed on 23 July 2015 from: <http://www.ubos.org/UNHS0910/chapter7.Average%20Monthly%20Household%20Income.html>

UNEP (2009, 13 Oct.). Carbon finance is key to better protection of gorillas and elephants to maintain health of African rainforests says UN Ambassador. Washington, DC: UNEP/CMS Convention. Accessed on 20 August 2015 from: <http://www.unep.org/Documents.Multilingual/Default.Print.asp?DocumentID=599&ArticleID=6341&l=en>

UNESCO (2014). 2014 state of conservation report for Bwindi Impenetrable National Park World Heritage Site in Uganda. Accessed on 23 May 2015 from: whc.unesco.org/document/135188

UWA. (2000). *Community conservation policy*. Unpublished manuscript, Kampala, Uganda.

UWA (2014). *Tariffs 2014-2015*. Unpublished manuscript, Kampala, Uganda: Uganda Wildlife Authority.

Weidner, S. (2006). *The quest for authentic experiences in wildlife tourism- A review of issues*. Unpublished manuscript, Stralsund, Germany: Stralsund University of Applied Sciences.

Whittington, D. 2002. Improving the performance of contingent valuation studies in developing countries. *Environmental and Resource Economics* 22, 323–367.

World Bank (2013). Uganda. Accessed on 31 May 2015 from: <http://data.worldbank.org/country/uganda>

Zaninka, P. (2001). The impact of (forest) nature conservation on indigenous peoples; the Batwa of south-western Uganda: A case study of the Mgahinga and Bwindi Impenetrable Forest Conservation Trust. *Forest Peoples Programme*, 165-194.

Appendix 1: LR Interview Questions

ID #:

Sex:

Village of residence:

Level of education:

Occupation:

1. What has been your experience with BINP? (Park authorities/staff/management, etc.)
2. Would you say this has been generally negative, positive or neutral?
3. Is there anything you think the Park could do to improve?
4. What has been your experience with the mountain gorillas? (Any encounters or important events?)
5. In what ways have you seen the images of gorillas? (eg. in photos, videos, books, handcrafts, t-shirts)
6. What words would you use to describe gorillas?
7. Do you think of them negatively, positively or neutral? Why?
8. What does conservation mean to you?
9. Do you think that the Park should continue to protect the mountain gorillas? Why or why not?
10. Would you ever want to see a gorilla in the wild, as the tourists do? Why or why not?
11. Would you ever be interested in experiencing some of the other opportunities the Park offers to tourists (eg. birding, nature walks, mountain biking, visiting Lake Bunyonyi)? What would be your preference?
12. What has been your experience with, or impressions of, the Eco-tourists? Is this generally negative, positive or neutral?
13. In general, do you think the Park and its Eco-tourism program help or don't help the local communities? Why or why not?

Appendix 2: ET Interview Questions

ID #:

Sex:

Country of origin:

Level of education:

Occupation:

1. How was your gorilla trekking experience? What were some of your impressions?
2. What were some of the factors that influenced your decision to participate in this particular ecotourism opportunity?
3. In what capacity had you seen gorillas, or the images of gorillas, before this experience? Did this inform your ideas and expectations of gorillas before coming out to Uganda?
4. What words would you use to describe gorillas?
5. How would you define conservation? What does it mean to you?
6. Did your ideas about mountain gorillas/ conservation changed at all after gorilla-trekking? Did you learn anything new?
7. What has been your experience with BINP (Park authorities, staff, management, etc.)? Has this been generally negative, positive or neutral?
8. Based on your experience, is there anything you think the Park could do to improve?
9. What has been your experience with, or impressions of, the local residents, if any? Has this been generally negative, positive or neutral?
10. What are your feelings about the Park and its mountain gorilla ecotourism program, on the whole?
11. What do you hope your conservation impact will be, either during your stay or after you leave?

Appendix 3: Daily Work Plan

LR interview days

- 9:00-9:30 Breakfast/ Informal conversation
- 9:30-12:00 Office work/ Data entry
- 12:00-13:00 Meet translator at an agreed upon location and travel to that week's village (See Appendix 4). Break for lunch.
- 13:00-17:00 Interview local residents of Ruhija, Mburameizi, Katoma or Rwesanziro, depending on week
- 17:00-18:00 Travel back to ITFC research station
- 18:00-19:00 Organise/ prepare for next day's activities
- 19:00-20:00 Dinner/ Informal conversation
- 20:00-21:00 Daily journal entry/ Prepare for bed

ET interview days

- 7:30-8:30 Find tourists at UWA outpost before their trek to recruit potential interview participants. Arrange time/place to meet post-trek
- 9:00-9:30 Breakfast/ Informal conversation
- 9:30-13:00 Office work/ Data entry
- 13:00-14:00 Lunch/ Informal conversation
- 14:00-18:00 Conduct semi-structured interviews with Eco-tourists
- 18:00-19:00 Organise/ prepare for next day's activities
- 19:00-20:00 Dinner/ Informal conversation
- 20:00-21:00 Daily journal entry/ Prepare for bed

Appendix 4: Monthly Work Plan

JUNE						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
				ARRIVE 12	PREP 13	OFF 14
PREP 15	PREP 16	PREP 17	ET 18	ET 19	ET 20	OFF 21
LR Ruhija 22	LR Ruhija 23	LR Ruhija 24	ET 25	ET 26	ET 27	OFF 28
LR Mburameizi 29	LR Mburameizi 30					

JULY						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
		LR Mburameizi 1	ET 2	ET 3	ET 4	OFF 5
LR Katoma 6	LR Katoma 7	LR Katoma 8	ET 9	ET 10	ET 11	OFF 12
LR Rwesanziro 13	LR Rwesanziro 14	LR Rwesanziro 15	ET 16	ET 17	ET 18	OFF 19
ET 20	ET 21	ET 22	PREP 23	DEPART 24		

ET= Eco-tourist
LR= Local resident

Appendix 5: LR Information Sheet

Department of Social Sciences,
Faculty of Humanities and Social Sciences,
Gibbs Building,
Gipsy Lane,
Oxford OX3 0BP
United Kingdom

Study title

Patterns of wildlife value orientations at Ruhija sector, Bwindi Impenetrable National Park, Uganda: Implications for mountain gorilla (*Gorilla beringei beringei*) conservation

Invitation paragraph

Mountain gorillas are endangered and face many threats. One of the goals of conservation is to understand and work with communities who share their environment with endangered species. You are invited to take part in a research study that will compare what Eco-tourists and local residents think and feel about the mountain gorillas at Bwindi Impenetrable NP (BINP). Before you decide whether or not to take part, it is important that you understand why the research is being done and what it will involve. Please take time to read or listen to the following information carefully.

What is the purpose of the study?

The purpose of the project is to learn what different people think about mountain gorilla conservation at Bwindi. For 5 weeks, I will interview local residents and Eco-tourists about their ideas and opinions.

Why have I been invited to participate?

Your ideas and opinions are valuable and the information you provide will help to understand the effects of mountain gorilla tourism at Bwindi Impenetrable NP. I will randomly ask residents for interviews from four villages in Kitojo Parish. Eco-tourists will also be randomly selected.

Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part, you can stop at any time without giving a reason.

What will happen to me if I take part?

After reading/listening to the contents of this information sheet, I will answer any questions you may have about the project. If you decide to participate in the research, I will ask you to sign the consent form or give verbal consent. When you are ready, I will begin the interview, which will be recorded (if you give permission). I will also write your interview responses in my notes.

What are the possible disadvantages and risks of taking part?

You may express either positive or negative feelings during the interview. All information provided by you will be kept confidential at all times and will be anonymous. Only the research team will have access to the information you provide to us. Personal details relating to you, like name or address, will not be needed for this study.

What are the possible benefits of taking part?

Although there may be no personal benefits to you in this study, the information you provide may contribute to future management of community-supported conservation programs at Bwindi.

Will what I say in this study be kept confidential?

All information collected about the individual will be kept strictly confidential. Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material. All data from this study will be protected in accordance with the University's policy on Academic Integrity.

What will happen to the results of the research study?

All information provided by you will be stored anonymously on a computer. The results from this research project will be available in my MSc dissertation and a final report which I will submit to the Uganda Wildlife Authority and the Institute for Tropical Forest Conservation.

Who is organizing and funding the research?

I am conducting this research as a MSc Primate Conservation student in the Department of Social Sciences, Oxford Brookes University. The project is in affiliation with the Institute for Tropical Forest Conservation (ITFC).

Who has reviewed the study?

The study has been reviewed by project supervisor, Prof. Catherine M. Hill, as well as Oxford Brookes' Humanities and Social Sciences Faculty Research Ethics Officer, Maggie Wilson. It has received official approval from the Uganda Wildlife Authority and the Uganda National Council for Science and Technology.

Who may I contact with future questions/issues I have regarding the project?

Principal investigator: Alexandra Lebron (ally.lebron-2014@brookes.ac.uk)

Project supervisor: Catherine M. Hill (cmhill@brookes.ac.uk)

Research Ethics Officer: Maggie Wilson (mvwilson@brookes.ac.uk)

Thank you for taking the time to read/listen to this information sheet. Please let me know if you have any further questions.

Appendix 6: ET Information Sheet

Department of Social Sciences,
Faculty of Humanities and Social Sciences,
Gibbs Building,
Gipsy Lane,
Oxford OX3 0BP
United Kingdom

Study title

Patterns of wildlife value orientations at Ruhija sector, Bwindi Impenetrable National Park, Uganda: Implications for mountain gorilla (*Gorilla beringei beringei*) conservation

Invitation paragraph

The mountain gorillas of East Africa have been listed as Endangered since 2000 and continue to face significant threats to their survival. One of the most important ways to achieve conservation success for this species is to understand and work with communities who are most impacted by mountain gorilla conservation. You are invited to take part in a research study that will compare what two user groups of the Park, Eco-tourists and local residents, think and feel about the mountain gorillas at Bwindi Impenetrable NP. Before you decide whether or not to take part, it is important that you understand why the research is being done and what it will involve. Please take time to read the following information carefully.

What is the purpose of the study?

The aims of the project are to understand how mountain gorillas are perceived by different user groups at BINP. Over the course of 5 weeks, interviews with local residents and visiting Eco-tourists will be conducted. The interviews will then be compared to identify any trends or dissimilarities in responses.

Why have I been invited to participate?

Your ideas and opinions are incredibly valuable and the information you provide will help to understand the effects of mountain gorilla tourism at Bwindi Impenetrable National Park. In order to get a representative survey of the population, individuals will be randomly selected from four villages in Kitojo Parish. Eco-tourists will also be selected at random.

Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What will happen to me if I take part?

After reading/listening to the contents of this information sheet, I will answer any questions you may have about the project. If you decide to participate in the research, I will ask you to sign the consent form or give verbal consent. When you are ready, I will begin the interview, which will be recorded (if given permission by the interviewee) and/or detailed in my notes.

What are the possible disadvantages and risks of taking part?

You may express either positive or negative feelings in your responses. All information provided by you will be kept confidential at all times and will be anonymised. Only members of the research team will have access to the information you provide to us. Personal details relating to you (such as name or address) will not be recorded for this study.

What are the possible benefits of taking part?

Whilst there may be no personal benefits to your participation in this study, the information you provide may contribute to the future development of community-supported conservation programs at Bwindi.

Will what I say in this study be kept confidential?

All information collected about the individual will be kept strictly confidential. Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material. Data generated by the study will be retained in accordance with the University's policy on Academic Integrity.

What will happen to the results of the research study?

All information provided by you will be stored anonymously on a computer. Analysis of the information obtained will be undertaken by the principal researcher at Oxford Brookes University. The results from this analysis will be available in my MSc dissertation and a final report submitted to the Uganda Wildlife Authority, as well as in one or more of the following sources: published paper in a peer reviewed academic journal; conference presentation of the research findings; meetings with community residents during the study.

Who is organising and funding the research?

I am conducting this research as a MSc Primate Conservation student in the Department of Social Sciences, Oxford Brookes University. The project is in affiliation with the Institute for Tropical Forest Conservation.

Who has reviewed the study?

The study has been reviewed by project supervisor, Prof. Catherine M. Hill, as well as Oxford Brookes' Humanities and Social Sciences Faculty Research Ethics Officer, Maggie Wilson. It has received official approval from the Uganda Wildlife Authority and the Uganda National Council for Science and Technology.

Who may I contact with future questions/issues I have regarding the project?

Principal investigator: Alexandra Lebron (ally.lebron-2014@brookes.ac.uk)

Project supervisor: Catherine M. Hill (cmhill@brookes.ac.uk)

Research Ethics Officer: Maggie Wilson (mvwilson@brookes.ac.uk)

Thank you for taking the time to read/listen to this information sheet. Please let me know if you have any further questions.

Appendix 7: Consent Form

Title of Project

Patterns of wildlife value orientations at Ruhija sector, Bwindi Impenetrable National Park, Uganda: Implications for mountain gorilla (*Gorilla beringei beringei*) conservation

Name, position and Oxford Brookes contact address of Researcher:

Alexandra C. Lebron, MSc Primate Conservation

email: ally.lebron-2014@brookes.ac.uk

**Please initial
box**

1. I confirm that I have read/listened to and understand the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
3. I agree to take part in the above study.

Please tick box

Yes No

4. I agree to the interview being audio recorded
5. I agree to the use of anonymised quotes in publications

Name of Participant

Date

Signature

Name of Researcher

Date

Signature

Appendix 8: Ethics Approval Form

**OXFORD
BROOKES
UNIVERSITY**

Faculty Ethics form E3

Faculty of Humanities and Social Sciences

Decision on application for research ethics approval

The Faculty Research Ethics Officer and a member of the Faculty Research Committee have considered the application for research ethics approval for the following research:

Project title:	Comparing ideas about mountain gorillas, as understood by local residents and Eco-tourists at Bwindi Impenetrable National Park, Uganda
Name & Department of Principal Investigator:	Ally Lebron MSc in Primate Conservation
Name of supervisor (if student):	Kate Hill

Please check the appropriate box:

1. The Faculty Research Ethics Officer / Committee gives ethics approval for the research project. *Please note that research protocol laid down in the application and hereby approved must not be changed without the approval of the Faculty Research Ethics Officer / Committee.* ☒
2. The Faculty Research Ethics Officer / Committee gives ethical approval for the research project subject to the following: ☐
3. The Faculty Research Ethics Officer / Committee cannot give ethics approval for the research project. The reasons for this and the action required are as follows: ☐
4. The research will also require approval from: ☐
☐ NHS REC
☐ Another external Research Ethics Committee

Signed: *M.V. 15/12/15* Date: *22/4/15*

Signed: _____ Date: _____