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The Ecology of Infancy and Early Childhood in Rural Senegal; A Five Year Old Can Boot but not Foot, an Exploration of Where Biology Meets Culture

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SIT Study Abroad

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The Ecology of Infancy and Early Childhood in Rural Senegal; A Five Year Old Can Boot but
not Foot, an Exploration of Where Biology Meets Culture

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Acknowledgments

A special thank you to my family in the village of Ndiane. Thank you for your hospitality, for giving me a home, and a family. *Tey, namm naa leen*. Today I miss you all.

You'll always have a place in my heart. *Ba beenon yoon*, Until next time.

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Abstract

This research project explores the life stages of infancy and early childhood in the village of Ndiane in the Thies region of Senegal. I will discuss how biology meets culture to influence children, parenting styles, and expectations of the life stage. How does ecology, the interaction of physical, biological and cultural landscapes, characterize childhood and the intertwined belief systems that influence parenting? The information was gathered using a combination of participant observation and free list interviews.

Keywords: Ecology, Biology, Developmental Psychology, Human Development, Public Health

The Ecology of Infancy and Early Childhood in Rural Senegal; A Five Year Old Can

Boot but not *Foot*, an Exploration of Where Biology Meets Culture

Infancy and early childhood are biologically and developmentally mandated life stages, yet the experience of childhood varies across the globe. The variations point to the powerful influence of culture and environments on human societies. The two Wolof words in the title are *Boot* and *Foot*, which mean to carry a baby on your back and to do laundry, respectively. This paper discusses how the portrait of daily life, boot and foot included, is shaped by the physical, biotic, and cultural realities of the village Ndiane, Senegal. I will draw from current literature on biosocial and evolutionary aspects of infancy and childhood in combination with exploratory field research.

Background

Infancy and Childhood

The nature of infancy and childhood are largely a result of biology and evolutionary forces, yet often cultural and social forces over ride this biology (Small, 1998). As social animals, humans are susceptible to social pressures to fit in, which can be seen in the diversity of parenting cultures despite our shared biology. Childhood takes on many faces around the world; therefore it is an exciting cultural topic to explore in order to better understand Senegalese culture. First though, I present a discussion on the reasons infancy and childhood as unique life stages exist for humans.

From an evolutionary survival perspective, it is engrained into the core of human adults to be invested in their offspring, to care for them, protect them and ensure that they are the best possible vector to pass on their genes (Small, 1998). When humans evolved into bipedal

animals, the pelvis was restructured rendering the birth canal smaller. Additionally, the human head size in relation to the rest of the body increased which meant that human babies needed to be born before the head size exceeded the constraint of the birth canal. As a result, human babies are born neurologically and physically early. A significant amount of development is left to happen outside the womb, thus infancy and childhood is a biologically dictated life stage (Small, 2001).

For the survival of our species, it is necessary for parents to be interested in their offspring, especially infants. Human infants are *altricial*, meaning they come into this world almost completely helpless (Small, 1998). The needs of human babies exceed the mother's resources and capacity to care for the infant (Hrdy, 2011). Therefore, often human cultures utilize a system of *alloparenting*; actors other than the mother assist in caring for the infant and fulfilling the demands of infancy and childhood (Hrdy, 2011). From the very beginning, the human life experience is not just biological, but social as well. Human child birthing is a much more challenging process compared to other primates (Hrdy, 2011). The baby is delivered facedown which therefore demands that someone is there to catch the baby, clear the airways, pull the placenta and hand the baby to the mother (Small, 1998). The process leaves both mother and baby exhausted therefore the presence of other caregivers is critical, hence the need for alloparenting. I will argue that this is reflected in the familial structure in Rural Senegal and influences daily life.

This mode of child rearing where there is alloparental assistance in the care and provisioning of young is called *cooperative breeding* (Hrdy, 2011). Recent evolutionary theorists have favored the Theory of Cooperative Breeding to explain why humans evolved from other primates (Hrdy, 2011). The idea is that in evolutionary history humans were reproductively more

successful, that is they had more offspring who lived, when they shared the responsibilities of child rearing. For this to work, humans had to cooperate, however other primates also cooperate. So, humans are hardwired to cooperate but even more distinguishing is the human impulse to share (Hrdy, 2011). Humans are compelled to connect with other humans and share and begin to display this at an early age (Hrdy, 2011). I will explore whether these supporting characteristics of The Cooperative Breeding Theory are present in childhood in Rural Senegal.

Babies and children are driven to engage physically and emotionally with their caregivers and conversely human adults possess the ability to sense the needs of infants. “For only by eliciting nurturing from others as well as his mother, could one of these little humans [infants] hope to stay safe and fed and survive (Hrdy p. 31, 2011).” However, more often than not, culture overrides this perfectly designed system (Small, 2001). As social animals, fitting in to match cultural norms often takes priority. Therefore this research includes the belief systems of the caregivers in order to examine the characteristic of the cultural influences. This intersection, the push and pull of biology and culture, is the inspiration for this research.

Cross-cultural Childhood Studies

Since the culture of childrearing is diverse, cross-cultural explorations of childhood offer a place to learn about one’s own culture, the human species, and the world. In 1925 anthropologists Margaret Mead and Ruth Benedict pioneered the field of studying children cross culturally (Small, 2001). Mead in particular established that parenting styles are largely a result of culture (Small, 1998). Since then, many anthropologists have completed ethnographies on children in different communities. I have found many examples of such studies on the continent of Africa, but not any specific to rural Senegal. One of the most in depth and classic studies on children is that of the !Kung San people of Botswana and Namibia (Small, 1998). Research

studies such as the !Kung San study offers a glimpse into an experience of childhood and parenting that challenges the common Western belief that there is one right way to do childhood and parenting (Small, 2001).

Relevance

It is important to understand the culture of childhood and parenting in the context of health problems. According to the World Health Organization, the majority of Senegalese live in rural settings, 57% of the population (“Senegal” 2014). The mortality rate for children under five years-old is 60 out of 1000 live births (“Senegal” 2014). Malaria, Prematurity and acute respiratory infections being the top three causes of these deaths (“Senegal,” 2014). These illnesses are preventable, curable or both. Understanding culture is key to developmental goals because it can help determine why these inequalities persist after many years and suggest where to place the emphasis of future health efforts. Is the problem a result of belief systems, lack of knowledge, lack of resources, or infrastructure? Cultural studies can help us find the answer to these questions. Understanding the culture of childhood in rural Senegal is crucial to making the improvements on child health that are still needed.

Specific Objectives

I intend to gain an understanding and description of infancy and early childhood in Ndiane. How does human biology interact with the local culture to characterize childhood? How are the realities of the landscape of rural Senegal—physical, biotic and cultural—reflected in the characteristics of infancy and early childhood? I specifically focus on infancy and early childhood up to ten years old. I recognize daily life looks very different for an infant and a ten year old, but these are the ages that tend to spend time together. Additionally, it is necessary to have a wide age range in order to include the household chores and work that children are able to

do as they develop more refined motor skills. Therefore this age range limits the risk of excluding potential defining characteristics of childhood in rural Senegal that are seen in the older children.

I observed the daily lives of children and their caregivers in order to discover what activities and interactions that are present in their daily lives and the nature of these experiences. In addition to the observations, I conducted structured interviews with caregivers to uncover the belief systems that influence and are reflected in features of rural Senegalese childhood.

Methods

Location

I am interested in how physical and cultural environments influence infancy and childhood; therefore I chose to do my research in the village of Ndiane in the region of Thies, Senegal. A village is an excellent venue to explore these topics; life is intertwined with the physical environment and cultural traditions are strong in the rural setting. I chose Ndiane because I already had a connection to the village through my previous stay there with SIT. Therefore, I had my homestay family who was willing to provide housing for me, as well as the necessary contacts to safely live and research in the village for two weeks.

Population Sample

Cluster Sampling. I used cluster sampling in order to limit my travel time and assure accessibility of my sample. Cluster sampling takes advantage of the natural pre-existing groups of people, such as towns, schools, hospitals and so on (Bernard, 2006). Therefore I chose to focus on the three households within the compound of my host family and the compound of an additional family in Ndiane. Living in the first compound gave me an in to observe the other two families and more people to interview. The second compound was included in my study to

ensure that my family's compound is not an anomaly in the village. Additionally, there are two women in the second compound that are able to write in Wolof and were therefore valuable resources for me. Therefore my population sample is also a convenience sample.

I conducted free lists with 26 women ages 20 to 75. The women were all selected from their households within the two compounds. They were selected based on presence, availability and desire to participate in the study. I did not include men because they were not around the households during the times the interviews were conducted.

Demographics of Sample. To respect the anonymity of my participants I will not include names of the compounds, families and individuals in this paper. The following demographics are a summary of who was present while I was in the household. Due to time constraints and constant population mobility, I was not able to get the exact, age, gender and family relations for each member of the households other than my own. The following are estimates.

Compound 1

Family 2 (host family)

	Girls	Boys
Baby (0-12 months)	1	0
Toddlers (12-36 months)	1	2
Kids (3-5 years old)	3	2
Kids (5-10 years old)	7	1
Total:	14	5
	19	

Family 2

	Girls	Boys
Baby (0-12 months)	3	2
Toddlers (12-36 months)	3	3
Kids (3-5 years old)	1	4
Kids (5-10 years old)	7	7
Total:	14	16
	30	

Family 3

	Girls	Boys
Baby (0-12 months)	2	2
Toddlers (12-36 months)	1	2

Kids (3-5 years old)	1	5
Kids (5-10 years old)	3	7
Total:	7	16
	22	

Compound 2

Family 4

	Girls	Boys
Baby (0-12 months)	0	0
Toddlers (12-36 months)	1	0
Kids (3-5 years old)	0	2
Kids (5-10 years old)	3	2
Total:	4	4
	8	

Participant Observation

Participant observation includes immersing yourself in the culture, participating in some aspects of life and recording what you can (Bernard, 2006). Participant observation is the foundation for cultural anthropology and is used to study a culture as an outsider. I chose to do participant observation because I think observing what people do, doing it with them, and experiencing it, is the best way to learn about their lives. Words can only go so far; therefore it was important that I was a participant observer in my research.

My participant observation lasted for two weeks. I had my own room in my family's home and I observed between the hours of 8:00am to 9:00pm. I kept three journals while in the field; a note pad for quick jottings, time-log, and formal notes written at the end of the day. It was difficult to write while observing; therefore I relied on writing down jottings throughout the day. At the end of each day I spent time writing more thorough field notes, which I labeled using a coding system I created to help me keep track of my information. In addition to the days with my family, I spent three full days in three other households. I passed the day with them and

joined them in their daily activities. I helped with household chores, shelling peanuts, picking hibiscus flower petals, choosing beans, and removing peanuts from their roots. These daily activities were mindless and allowed me to be more natural as I observed. I spent a lot of time with the mothers to observe their interactions with the kids. I did spend a lot of time with the kids but I found it easiest to observe the lives of the kids when I was not in their group. My presence in a group of kids undoubtedly changed their behaviors.

While I observed everything, I focused my attention on work and play. These two aspects of childhood are essentially a universal component of childhood across the globe and I wanted to see them in the rural Senegalese context. I sought to discover the nature of play in the village. Who played with who? How much? With what? I also strived to understand the place of work in childhood. What does this work like for the kids? How do they respond to it? I observed the nature of the activities to try to gain a better understanding of the experience of childhood. In addition to focusing on these two aspects of childhood, I remarked upon how the physical environment of the village shapes daily life, thus culture and the experience of childhood.

Structured Interviews

Free Listing. To better understand the belief systems within the culture I conducted free lists with mothers and women within the two compounds. *Free listing*, is a data collection technique used to elicit terms, phrases or items belonging to a *cultural domain* (Munck et al, 1998). I used the methods outlined by H. Russel Bernard in his book *Research Methods in Anthropology: Qualitative and Quantitative approaches* (2006). A cultural domain is group of things that people from a culture believe goes together (Bernard, 2006). For example, you can gather a list of all things a population considers food. Since it is open ended, free listing also produces results that are in the local language and thus a more complete understanding. Cultural

domain analysis helps understand how a culture views the world. Additionally, free listing is a wise choice for rapid assessments; it is a quick, inexpensive and relatively simple way to gather a lot of information quickly (Munck et al., 1998).

Free list questions¹

1. Describe a good child?
2. Describe a good parent?

My target population of mothers and adults involved in caregiving is a busy population. Therefore I chose to do just two topics in order for it to be short, not exhausting and to minimally stressful. I conducted the interviews in Wolof with the women who were present, available and wanting to participate. I asked the questions, someone helped explain it and then I encouraged them to say more when they slowed down. I conducted the interviews with three different helpers. The first day, a nine-year-old girl ended up accompanying me because she understood the questions and could explain them. She wanted to be with me and her mother was happy to have her help. She was able to explain the process for me when I was unable to. The second day my brother who speaks French accompanied me. The final round I had two women who are able to write Wolof. They did not write for me, but when needed sounded out the words slowly for me so that I could accurately write them. This worked really well since they knew which sounds I needed to hear to spell the words. Additionally, they were able to take me around the compound to help me find women to interview. I will discuss the limitations of having different helpers in my discussion.

Free List Data Analysis

¹ See Appendix A for Wolof translation

I started the analysis by translating the responses to English. Next, I standardized similar responses. For example, I coded “Bathe until clean” and “Be clean” as simply Bathe. For further details see Appendix B. To create my data set, I listed the standardized responses into a plain text document and then imported the data into Anthropac Software for analysis (Borgatti, 1996).

Anthropac is a software designed to analyze data for cultural domain analysis studies. Free analysis is based on two principles: (1) Things most important will be mentioned before things less important; and (2) When people know a lot about the subject, they will have longer lists (Munck et al., 1998). Anthropac also counts the frequency of each item, the percentage of informants who included it, and the average rank on the lists for each item. And finally it uses the frequency and rank to determine the salience; a value that uses average rank and frequency of the items to determine which is the most salient, or important. After processing in Anthropac, I exported the data to Excel to make the charts.

Ethical considerations

I was careful to take as many ethical precautions as possible since my research involved children. The academic director, Souleye Ndiello, called the village chief to gain the initial permission for me to stay in the village and to conduct research. Next, I asked the head of my family through my brother who was able to explain my research to the family. And finally, upon arriving to the village I asked permission from each parent present in the household. I was mostly only able to ask permission from the mothers because a large percent of the men are away during the day and throughout the week to work outside the household.

With the help from a SIT language instructor, Mame Binta Fall, I translated an explanation of my research and consent form into Wolof (see Appendix A). I then read the Wolof and asked whether or not they wanted to participate in the research. I did this with the

help of my brother who could help clarify my Wolof to the individuals. We went to each heads of each of the households and as many parents as present. I asked each interviewee at the time of the interview. I chose to gather oral consents because of the high illiteracy rate in the village and to try to adhere to the norms of a society that is orally based rather than written. I decided asking for signatures was not worth the risk of alienating my participants. I wanted to respect their confidentiality as much as possible and the nature of my research does not require names of individuals, therefore I feel oral consents are sufficient.

While I did take the time to gain consent from my population I must also note that it is unclear whether or not individuals agreed even if they were not comfortable. I did not have anyone say no. I believe this is in part a cultural implication of the culture of hospitality in Senegal. People were happy I was there and wanted to help me and cater to me in anyway they could. I am confident that my observation and interviews did not hurt anyone, but it is still a limitation to my ethical precautions. Additionally, children under the age of 18 do not have the faculties to make an informed decision, therefore I had to rely on consent from the parents. Overall, I attempted to be as transparent and honest as possible about my presence and research.

Results

Observations

Family structure. Families in Ndiane are large and extend beyond the nuclear family model of two parents and their children. The village is composed of familial compounds with the households within. The households include several generations; sometimes from grandparents to grandchildren. Households include the children of the oldest father in the household, their spouses, and their children. According to Islam, men are allowed to have up to four wives. Therefore many of the households were also organized around a polygamous marriage. Most

households are organized around the grandparents, which typically include an elder man and his two or three wives.

Physical and Built Environment

The environment of Ndiane is dry. The homes are built with cement or millet stalks on sand and fields surround the compound. Animals, such as horses, goats, donkeys, sheep, graze in the fields during the day, but are mostly housed within the households. Chickens, goats, and sheep are often free to roam around the households. Ndiane is an agriculture and livestock based society therefore daily life revolves around farming, animal care, and household chore. The village does have electricity, but there are no streetlights or roads. There are also several wells in the village in addition to water taps with an improved water supply. The taps are not constant therefore families keep large containers of water and still spend time carrying the water to fill the reservoirs. Cooking is done with fires with wood that is collected from the forest. Overall, the people live closely with the land, eat what they cook and do most things by hand without the help of machines.

Work and play. I observed great variation between the nature of work and play in between individuals of different ages and gender. For a summary of the observations see Appendix C.

Free List Results

What makes a good child? I collected 25 lists, which average approximately 7 items long each. After coding, the question produced a total of 45 different items. The longest list is 16 items and the two shortest lists come in with two items. The top five most salient items are as follows².

² For a complete table the 15 most frequent items. See Appendix D table D2

Rank	ITEM	Salience
1	Respect Parents	0.251
2	Have Motivation	0.243
3	Study	0.237
4	Have discipline	0.234
5	Listen	0.222

For a complete list of the top 15 most salient items see Appendix D Table D1.

Overall, the top 10 items do not have much variation in their respective saliency value. For example, “Bathe” scored the same as “listen,” with a saliency of 0.222. The highest saliency value is “respect parents” scoring 0.251 and the lowest is “be open,” with a score of 0.003.

The top most frequently listed items are as follows:

Rank	ITEM	Frequency
1	Work	12
2	Study	11
3	Respect Parents	10
4	Have discipline	10
5	Help	10

See Appendix D Table D2 for a complete table the 15 most frequent items.

What makes a good parent? For the second question, I collected 26 lists averaging approximately 12 items long. After coding, there are a total of 44 different items listed. The longest list is 14 items and the shortest three lists are three items. The five items with the most saliency are as follows³.

Rank	Item	Saliency
1	Educate	3.07

³ For a complete list of the top 15 most salient responses see Appendix D, Table D3

2	Feed	0.287
3	Take Care of	0.203
4	Be a good example	0.195
5	Work	0.178

Education is ranked significantly more salient than the rest. Education scored 3.07 while the next item, feed, scored only 0.287 in salience. “Educate” and “Work” are the two most frequently listed items, 11 times each. “Feed” follows at 10 counts, “Pray” with 8 and “Take Care of” with 7 (Appendix D, Table D4).

For the complete list of calculations and data sets from Anthropac see Appendix D, Figures D1 and D2.

Discussion

Ecology

In Ndiane there are many interactions between biology, the physical environment, and culture. The extended family structure of the households creates a milieu that supports the Cooperative Breeding Theory. Large families, with many adults, mothers and children present, help accommodate the needs of human infants and young children. Older siblings are able to help with childcare so the mother can work. For example, if an infant is crying, I observed mothers giving the baby to an older sibling to *boot*, or carry the baby secured on their back with fabric. Entertaining a fussy baby, or “boot”-ing, does not require the fine motor skills or strength needed to complete other household tasks. This distinction is the inspiration for my title. A mother can *foot*, the Wolof word for doing laundry, while the five-year old boots. This arrangement works for all parties, the sibling is entertained by her assigned responsibility and the mother literally has a weight of her shoulders to work more freely. Biology demands that children and infants have attention and also offers effective babysitters: older siblings and kids. I

noticed that kids are excellent at many care-giving tasks, especially soothing and distracting. Kids naturally are more imaginative, creative, and less inhibited in the arena of being silly compared to their adult counterparts, therefore they are efficient at this task. The large family size in Ndiane is a tool in childrearing and an unmistakable part of childhood within the village.

In addition to having many children present, the polygamous family structure also provides a network of knowledge, support, additional watching adult eyes, and helping hands for the mothers. I theorize, while I cannot seek to confirm the hypothesis in this study, that polygamy became allowed and supported by the Islam religion in order to validate the need for alloparenting. Biologically, it is easier to have more children with more than one wife and therefore subsequently not only have more mothers but also child caregivers. While this is not the explicit origin of polygamy in Islam, I do believe that the familial structure of polygamy can make life easier for some groups of people, especially in the demanding environment of subsistence agriculture. Therefore it makes sense that it became endorsed. During my time in the field I observed that having more people is an asset not a burden. It is an easier way to spread the labor and necessary for the demands of agriculture.

For example, tasks such as picking peanuts from their roots go much quicker when a giant family of 30 is all involved. The same pile completed in one day, would take a family of four days to complete. Additionally, a large family with mixed ages is useful in the division of tasks in a developmentally and biologically appropriate way. As mentioned early, children are actually excellent caregivers. Strong women are needed for carrying water, firewood and the portions harvest, and pounding millet just to name a few. Additionally, strong men biologically more fit for and needed for labor-intensive tasks, such as loading bags of peanuts onto carts. The elderly also have an important role. Someone has to sit and sort beans, shell peanuts or pick

*Bissap*⁴ leaves. Therefore those who are not as fit to do the labor-intensive tasks have a place completing tasks that have to be done. This system is beneficial because it offers an additional level of attention and care for infants and toddlers. I often observed babies and toddlers spending time with their grandmothers. Again, this seemed enjoyable for both parties. The grandmothers enjoy the company and the young children often seek comfort and attention from their grandmother. I even observed a grandmother offer her nipple to a baby to comfort her. The grandmother is often there when the mother cannot be, and is therefore an integral part of the experience of childhood.

The large families also make adequate food preparation, cooking and serving possible despite the large size. Women take turns having days to cook for the household. A woman has a few days spent managing the kitchen. Because of the familial structure, she can be assured that her kids are safe and focus on the work. Frequently though, the kids end up staying with their mother to be close to her and observe. Observation is key to learning in the society. On the days the woman is not cooking, she prepares the beans, peanuts and other raw ingredients needed for the meals. Therefore the large familial system intuitively makes it easier to feed a family. However, it is important to note that I spent my time in the field during a time of plenty because of the harvest. I am not sure if this particular observation would hold true year round.

I was unable to map the genealogy of families, other than my own, but I do not think it is a shortcoming for this particular project. The difficulties surrounding creating family trees proved just as interesting. For example, I noticed that children call any mother “yaay⁵” and any

⁴ hibiscus flower that is grown and cultivated to use in the national dish of rice and fish and juices

⁵ Yaay: mother in Wolof

grandmother “moom.”⁶ Therefore I could not rely on name calling as a data source. Moreover, I believe it is a Western idea of needing to write down and map family relations because people had a hard time understanding how to organize the family when talking to me. Therefore I decided it was wise to focus my energy and attention elsewhere. Overall, I learned the family is a unit and titles are not needed to make this true. In Wolof, a word for family, *mbokk*, also means share. Your family is whom you share with, not exclusively shared biology.

Just as human biology demands a large capital of human resources for childrearing, the biotic environment and built environment of Ndiane also demands a large capital of labor resources. Children are a part of this labor resource. The society sustains their livelihood largely on subsistence agriculture, subsidized by family members who leave to work for money or sell products or services within the community. Furthermore, this work is done predominately by hand or with the help of livestock. There are not machines to do the work for the people. As a result, the labor demands are high and mandate that the children help with work.

During my time in the field, I observed that overall the work for kids does not seem overbearing nor is it a thorn in their happiness. The age and gender divided tasks appropriately match the interests and skills of the kids. The boys have fun riding the horses to and from the field and most little boys also have a great time scaring away animals. Often work is turned into play, therefore I define work as an activity that contributes to the household affairs. I cannot help but to compare the childcare young kids often provide to that of the phenomenon of playing “dolls” in America. Rather than pretending to feed, bathe and carry their baby dolls, girls in the village were actually doing this with real humans. Kids like to be with their older counterparts; working allows this. Imitating elders and wanting to be with them is all a product of the biology

⁶ Moom: grandmother in Wolof

of being social animals. While at times the responsibility of work is burdensome, overall children caring for children, and chores, agree with human nature of thinking and feeling what others feel, the drive to give, and to connect.

I consistently saw the raw impulse of giving that Sarah Hrdy outlined in her book *Mothers and Others* in the young children (Hrdy, 2012). Kids are constantly attempting to give things to each other. Kids can say the word “am,” in Wolof, “have” at a young age and do so frequently. They even hear it as an infant. I consistently watched mothers say, “am” as they offered their breasts to their infants. Therefore this culturally encouraged behavior is also confirming the Cooperative Breeding Theory of human evolution. Biology, the economy and culture mandates that people give.

The early involvement of children to perform chores also seems to encourage rapid development of well-tuned motor skills. For example, I observed a five year old pick up a knife to help me peel vegetables. She had far superior knife skills to me. I previously thought it was developmentally impossible for someone of her age, to have fine motor skills; especially with a knife. Therefore this early start appears to accelerate the development of motor skills.

Limitations to Observations

As with any ethnographic study, there are limitations to the accuracy of my observations. My time in the field, two weeks, is relatively short. Daily life varies from week to week and from different times during the year. Therefore I am only using a small snapshot of time and life to describe the ecology of infancy and childhood. Additionally, whenever there is an outsider observing, there is a risk of people changing how they would normally behave. I attempted to reduce *reactivity*, the fact that people often change their behavior in response to being observed, by participating in daily life (Bernard, 2006). However, it is important to note that reactivity is a

limitation in participant observation. Furthermore, by the end of the two weeks I was only starting to lose my status as an exciting novelty for the community. On a note of success; during my time in the field, I did gain excellent rapport with many of my participants. Strong *rapport*, or a trusting relationship, theoretically makes it easier to trust that the observed behaviors are genuine (Bernard, 2006). The strong rapport should reduce the confounding variable of reactivity.

In addition to reactivity, it is also important to acknowledge human limitations to objectivity. As a human with unique experiences and life story, it is impossible to completely remove all opinions from observations. The goal is to transcend our knowledge and biases when taking measurements and observing (Bernard, 2006). Throughout the study I have practiced being explicitly aware of my own ideas and experiences of what childhood and infancy means. I strongly believe there is not one right way to raise a child, so I kept that in mind throughout the study. For this study, I felt it was out of the scope to do a comparison to Western culture. However, a cross-cultural study of infancy and early childhood in Rural Senegal and another sphere is a potential area for further study.

Discussion of Free List Results

Kids. The list of the top 15 most salient items for what makes a good kid does not have one item that is significantly more salient than the others. Refer to Appendix E, Graph E1 for a visual representation of the relative importance of all items gathered. From an ecological perspective I think some of the items can be grouped together. “Respect parents (rank 1),” “have discipline (4),” “listen (5),” “Teggin (8),” “respect elders (11),” and “greet (14),” all address politeness, cultural norms and essentially being well-behaved. These items are important because a child needs to adhere to these principles in order to continue to be accepted by the extended

family and therefore cared for. If a child is disrespectful and unruly then it is a threat to the system of alloparenting and cooperative breeding that is essential in the village life.

In the context of the labor demands of subsistence agriculture, it is essential that children be helpful and a valuable asset rather than a burden. “Have motivation (2),” “work (7),” “stay at house (12),” and “help (13)” all address this need for productive little citizens. Next comes learning and the different components of learning; “study (3),” “education (9),” and “school (15).” Study includes religion and academics and includes a dimension of choice for the child. A child has to partly choose to study validating the high salience of motivation. Next, the high saliency of education stresses the importance of education in the village, which includes religious, behavioral (good from bad), and life skills. And finally, school, a child needs to go to school as part of their education. It seems that these three components of learning—studying, education, and school—are the foundation to the first two groups of adherence to social norms and usefulness. Without education, formal or informal, it would be impossible to expect kids to be well-behaved and helpful.

Left on the list is “Bathe (6),” and “Pray (10).” I am fascinated that bathing ranks more important than praying. The emphasis on bathing is an interesting topic and presents an area to focus on for future studies. I see three possible explanations to the importance of bathing. The first is that bathing is a form of respecting those around you and therefore ensuring acceptance into the group. There is a Wolof proverb “Lekkal lu la neex, waaye solal lu neex nit ña” which translated to English means “Eat whatever you like, but dress in a way that pleases others (Shawyer, 2009).” Essentially this means act in a way that is pleasing to others; therefore supporting the results indicating the importance of being respectful. Bathing then, is a form of

respect and conformity and would therefore fall into the category of ensuring continued care by adhering to cultural expectations.

Alternatively, it is possible that the importance of bathing stems from the value of water as a purifier in Islam. “Islam ascribes the most sacred qualities to water as a life-giving, sustaining and purifying resource (Chantal, 2014).” As a religion that was born in harsh deserts, the religious text of the Quran frequently praises the importance of water, purity and cleanliness. My third possible explanation is simple; the environment of Ndiane is extremely dusty and sandy which therefore mandates frequent bathing. Children can get worms and skin infections from the sand and therefore it is wise to remove this sand. Therefore it could simply be a matter of practicality. It would be interesting for future study to explore where bathing falls in the social consciousness of the community; respect, religion, or necessity and preventative health?

Parents. The results from the free list question about what makes a good parent indicate that educating the children is indisputably the most important dimension of parenting. For a visual representation of the significance see Appendix E, graph E2. In the Senegalese context, education includes religious, life skills, behavior and discipline. Islam is an integral part of life in the village, therefore it is important that parents teach their children Islam and the corresponding moral code. One of my respondents told me that kids don’t know anything, you have to teach them.⁷ This overall theme of needing to educate children is visible throughout daily life; it is observed in action and speech—adults frequently deliver scolding speeches to teach children how to behave.

The majority of responses coded as “educate” in the free lists came from the Wolof word *yar*, which as a verb means “to educate” (Camara, 2006). Yet the noun version of *yar* translates

⁷ Translated from Wolof “xale yi xamul dara”

to “whip or switch” (Camara, 2006). Therefore the link between physical discipline and education is encoded in the language; “only by extension did the word come to mean discipline, moral education, and education more broadly (Ware, 2014, p.42).” I observed this link during my time in the field and does confound whether the results suggest the dramatic importance of education, or if it actually means discipline.

Most notable in my observations of the link between education and discipline, are the times I helped the kids with their homework and they told me I needed to hit them when they got an answer wrong. I did not comply with this request and it was startling to me and my western framework surrounding physical punishment, yet to the kids it is unquestionably linked to their education. Despite the technical ban on physical punishment in the school system by the Senegalese government, it is absolutely still a common place. Even in Dakar, a thirteen-year old girl showed me the scars on her wrist from her primary school education. Additionally, my brother from my village family, who works in Dakar, explained to me that his kids go to school in Thies because his brother is there and he can “bien frappé les enfants⁸” when they don’t properly memorize their lesson in French.

Therefore the original meaning of *yar* is presently even intertwined with formal primary education. While in Ndiane, I also observed the moral and behavioral dimensions of education, which lean towards the side of discipline. Sometimes this was through jokes, for example a mother breaking of a tree branch and pretending she was going to hit her newborn baby because it was crying and “dafa reew,⁹” so she needed to teach it. Yet in other instances it was more serious. I did observe a mother using a similar stick to whip her seven-year-old son to correct his behavior. I missed the events leading to it, but I heard the process; both the whip and the cries.

⁸ Literal English translation, “hit the kids well”

⁹ Is rude.

This was startling to me and I will admit difficulty observing objectively. However, this belief that education includes physical punishment is a part of the culture in Ndiane and Senegal. The ambiguity of the distinction between education and discipline is a limitation of the results of my free list results.

After educate, “feed (2)” and “take care of (3)” are the most salient items. There was a constant emphasis on working to provide for your kids. “Work” ranks 5th, “clothe” ranks 9th and “go to the hospital” ranks 10th. I expected the theme of “work and pray only” to be common responses, but I am surprised by the salience and frequency of “go to the hospital.” Senegal as a nation spends 5% of their national GDP on health expenses and the per capita expenditure is 96 US dollars (“Senegal” 2014). Both of these indicators are well below the regional averages (“Senegal” 2014). Therefore it is surprising that over and over again I heard “if your child is sick, go to the hospital.” This finding is actually exciting, it suggests that this is an area for further exploration in order to improve health indicators. From this study, one can conclude that the society’s attitudes towards modern medicine are positive. They want to utilize the health system when it is needed and have faith they can help them. Therefore, these findings point to a lack of accessibility, both supply of health care facilities and access to resources to pay for it. For example, the World Health Organization estimates an average of 0.6 physicians and 4.2 nurses or midwives per 10,000 people. Development projects should focus on increasing accessibility of health care.

Difficulties Encountered

During my fieldwork I encountered many difficulties. I learned a lot about the challenges of doing Western style research in rural Senegal. I originally hoped to find someone who speaks French and Wolof to accompany me to each free list interview. This proved impossible for

several reasons. For one, people often seemed to not understand why I could not wait for my brother who speaks French to return over the weekend. Many responses to requests for help were returned with, “Why not wait for your brother? Just wait for him.” I naively thought the school teachers would be a valuable resource. However, their French was limited, or perhaps more accurately, their desire to speak French was limited. Overall they were not interested in helping with the research process. There was one male teacher “interested” in helping me. Yet, I believe he was mostly romantically interested and I did not feel comfortable with him. This certainly was a reminder of the potential difficulties of being a woman researcher in the field.

I did successfully find two women who can write Wolof. They were able to spend one afternoon attending interviews with me, however the magnitude of daily work does not allow further leeway than that. I did not feel comfortable asking for them to sacrifice several afternoons of work time to help me. Therefore I had to settle on having different assistants during my interviews.

I posed the prompts in Wolof each time, and my assistant then repeated and explained it in his or her own words. Therefore the delivery and content of the prompts changed slightly from interviewee to interviewee. This is a limitation because it adds unnecessary variables. Additionally, the interviews were often conducted not only with children present, but other men or women. Therefore, often people other than the subject suggested items, thus influencing the particular list. I decided this risk was not worth moving to a private locale at the cost of being inconvenient and making the subject too uncomfortable. The settings of the interviews were helpful because for the most part they were able to stay relaxed and not stressed by the experience.

The biggest limitation to my free list interviews is certainly the language. While I am capable of hearing Wolof and writing it quickly with adequate accuracy, it is impossible I did not miss some items. It is also possible that the subjects changed their responses in order to use vocabulary or expressions they thought would be recognizable to me. Another consequence of the method was that often items had to be repeated for clarity, which disrupts the train of thought for the participant. Translation from Wolof also presents many opportunities for error. The English expression “lost in translation” is indeed a real problem. I attempted to translate as accurate as possible through talking to people and referring to more than one dictionary but it is important to note. And finally, there is the possibility of human error when creating the dataset before importing into Anthropac. I edited and improved each data set several times. For example, if I accidentally wrote “be polite” and “polite” then that changes the results. The process requires diligence, attention to detail and patience. I had a difficult time using Anthropac. The software is great for the purpose of this study, but the interface was not extremely user friendly.

Overall the difficulties experienced in the field were all opportunities to learn more about the society and my topic and then maybe I will use Anthropac again in the future.

Conclusion

In conclusion, I discovered many areas of infancy and early childhood in Ndiane that are inextricably linked to the physical, biotic and cultural environment. I found that the belief systems surrounding childhood actually compliment the environment of the society. The economy and labor demands of the land dictate an active lifestyle for both the children and adults. The parents said they want their kids to be educated, well-behaved and helpful; all of which mitigate the difficulties of their environment. An interesting extension of this research would be to conduct a study to determine how society classifies the items that were found to be

salient. Are they derived from practical, religious, or moral values? Understanding the collective thought behind the results would add more dimension and help clarify some of the ambiguities from this study. Additionally, increasing sample size and duration of the project would enhance the credibility of the study and therefore its potential use as a vector to improve maternal and child health in rural Senegal. I believe that a sociological perspective on childhood in future health and development projects could help close the gap and improve the historically stubborn child and maternal health statistics in Rural Senegal.

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Appendix A
Wolof Translation For the Field

Free List Questions

1. Waxal Naka xale bu baax wara mel. Waxal bu bari.
2. Waxal naka waajur bu baax wara mel. Lan war waajur def pur toppando ay doomam? Waxal lu bari.

Summary of research objectives

Damay gëstu ci mbiru nekkinn ak definnu xale yi ak ci mbiru seeni gëm gëm ak gëm gëmu seeni waajur ak seeni mbokk, li Dundu bes bu nekk ak nekkinu waa wilaas bi mëna indee coojorte ci dundu xale yi. Dindinu xale yi dafa ute ci biir adduna bi. Waye begg naa jang lu bari ci mbiru adda senegale ak cosaanu ak dundinu Senegal yi. Beggoon naa xam itam lan la xale yi nekk ci wilaas yi di dund ak lan la nit ni xalaat ci xale yi.

Methods

Dinaa seetlu ak bind li xale yi di def ci suba ba ci ngoon. Dinaa laj waajur yi.

Consent

Ndax men naa def gestu bi? Ndax d'accord nga man bind li sa doom di def ci suba ba ngoon. Yow doo soopi dara ci sa dundin. Doo soopi dara itam ngir man. Dinna yendu ak yeen ak dinna bind li ma gis. Buma paree dinna suturaal nepp bumay bind sama papier. Boo tambale ak man, men nga arrette saa yu la neexee.

Tannal benn:

- Deetdeet "I do not wish to be included in the research" Begguma bokk ci gëstu bi.
- Waaw, "I agree to participate in the study and understand I can change that at any time." Nangu/d'accord naa bokk ci gëstu bi. Tey xam naa ne men naa arête saa yu ma neexe.

Appendix B
Free list codes

Table B1: Question 1

Code	Description of Responses Included And Further connotations
Education	Includes the Wolof word “Yar” which means education with a connotation of punishment being included. Additionally in the Senegalese context this also can include religious education.
Bathe	Bathe until clean, be clean
Be a good example	Children need to be a good example for younger kids, to teach the other kids
Be open	
Be thankful	
Compassionate	Have compassion, to be compassionate
Disciplined	Have discipline, to be disciplined
Do good	Dafay baax, leave bad things, don’t do bad
Follow Example of Parents	
Follow Islam	Literally follow Islam, but also includes religious practices such as fasting, liking Allah, etc.
Greet	Cultural tradition
Have Courage	
Help	Be useful, help with household work
Help mother	
Initiative	Translated from phrases that included wanting to do the expectations parents have of children such as wanting to follow Islam, work, study, etc.
Intelligent	Often translated from the Wolof expression “dafa yeewu,” literally “to be awake” and means intelligent
Kersa	Modesty
Know Culture	Follow cultural norms, learn cultural behaviors
Know parents	Know your parents well
Learn	Can have a connotation of punishment
Learn Quran	
Like mother	Like your mother
Listen	Listen to parents, elders, etc., Follow advice
Motivated	Translated from “yaawu bu baax” an expression meaning wake up well and have drive, putting a lot of effort into everything you do
Peaceful	Pass days with peace, have peace with people
Play with kids	
Polite	Translated from: “Yaru”

Pray	Pray, say prayers
Principle	
Respect Elders	Give elders respect, know who has higher levels of status for respect
Respect everyone	Respect, have peace with everyone, be kind
Respect parents	Includes mentions of mother and father separately
Responsible	Respect needs, do what needs to be done
Share	
Sit	Sit in style that the culture prefers (for example around the bowl), sit still rather than running around, be calm
Stay at house	Don't wonder, be there for the family
Study	Wolof: Jang
Teach younger kids	
Teggin	Diplomacy
Walk slowly	
Work	House hold work, field and livestock tasks, work for money

Table B2: Question 2

Bathe	Bathe your children, make sure they're clean
Be a good example	Kids watch at all times, so behave with this in mind
Be disciplined	Disciplined, respects needs
Be educated	have education
Clothe	Clothe, buy nice clothes
Compassionate	have compassion, be compassion
Discuss	Talk to your kids, family
Educate	From the Wolof word "yar," meaning to educate. The word has a conotation of punishment because there is a belief that punishment is needed in order to learn.
Do Good	Leave what is bad, don't do bad things
Enter in school	Not specified whether it is French or Quranic school
give	give children money, needs
Feed	Give children enough food, buy food, give water
Follow islam	have religion
Follow tradition	Do what your parents did
Go to hospital	If your kid is sick, take him or her to the hospital
Have money	To take care of your children
Have values	

Help	Help your children
Help family	Contribute to house hold work, take care of parents in old age
Honest	Be honest
Initiative	Translated from phrases that included wanting to do the expectations parents have of children such as wanting to follow Islam, work, study, etc.
Keep track of	Keep track of your kids, know what they do, are they playing to much? Not studying?
Know your kids	
Let them grow up	Allow the kids to grow up, sometimes that means leaving them to be kids, keep them alive to grow up
Like all kids	
Like family	
Motivated	
Peace	Live peacefully, have peace with people
Pray	Pray for children, pray for enough food, say your prayers
Proper appearance	Includes dress elegantly, be pretty
Put on good path	Put your children on a good path, the right path (both religious and moral)
Respect children	
Respect everyone	
Respect family	
Respect husband	Respect husband, listen to husband, discuss with him
Respect neighbors	
Sacrifice	Make sacrifices so your kids have and do what the want/need
Stay at house	
Take care of	Take care of children, responsibility for the wellbeing of your children
Teach	Teach right from wrong, culture, how to behave
Teggin	Diplomacy
Watch	Watch over your kids
Work	For money and household work such as laundry, cooking, cleaning, etc.

Appendix C

Summary of Observations						
Play		<i>Under 5 years old</i>	<i>Over 5 years old</i>			
		<ol style="list-style-type: none"> 1. Mixed aged play groups. <ol style="list-style-type: none"> a. 12 months- 5 years old during school hours b. The older kids seem to also be entertained when they play with or entertain younger kids c. Mixed gender play groups 2. Free to play most of the day <ol style="list-style-type: none"> a. kids run around the households and stay near the compound but can roam 	<ol style="list-style-type: none"> 1. Mixed age play groups <ol style="list-style-type: none"> a. 12 months- 10 years not during school hours b. Same gender play groups 2. Less time to play 			
	Type of Play	<ol style="list-style-type: none"> 1. Mimic adult behaviors: pretend to breastfeed, <i>boot</i>, do laundry, horse and chariot, praying ritual, etc. 2. There are not many toys present, therefore anything is a potential toy 3. Kids are able to entertain themselves with just what is around them 				
Dancing, chasing, wrestling, singing, running						
Work		<i>Under 5 years old</i>	<i>Over 5 years old</i>			
		<ol style="list-style-type: none"> 1. Fetch things for adults 2. Trips to the boutique 3. Catching or chasing animals 4. Help care for infants (<i>boot</i>, <i>coo</i>, <i>sing</i>) 5. Occasionally help cut vegetables 6. Shell peanuts 	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><u>Girls</u></td> <td style="text-align: center;"><u>Boys</u></td> </tr> <tr> <td> <ol style="list-style-type: none"> 1. Fetch things for adults 2. Carry water 3. Childcare (bathing, comforting, potty training) 4. Laundry 5. Wash dishes 6. Help in kitchen 7. Process food harvested: Shell peanuts, Pick <i>bissap</i> leaves, choose and sort beans, pound millet </td> <td> <ol style="list-style-type: none"> 8. Livestock care (herding, feeding, watering) 9. Ride horses to the field to carry harvest 10. Field work 11. Make and serve <i>Attaya</i> </td> </tr> </table>	<u>Girls</u>	<u>Boys</u>	<ol style="list-style-type: none"> 1. Fetch things for adults 2. Carry water 3. Childcare (bathing, comforting, potty training) 4. Laundry 5. Wash dishes 6. Help in kitchen 7. Process food harvested: Shell peanuts, Pick <i>bissap</i> leaves, choose and sort beans, pound millet
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Appendix D
Presentation of Data

Table D1: Salient Responses for Question One; Good Kids

Rank	ITEM	Salience
1	Respect Parents	0.251
2	Have Motivation	0.243
3	Study	0.237
4	Have discipline	0.234
5	Listen	0.222
6	Bathe	0.222
7	Work	0.218
8	Teggin ¹⁰	0.207
9	Education	0.196
10	Pray	0.175
11	Respect Elders	0.156
12	Stay at House	0.144
13	Help	0.143
14	Greet	0.131
15	School	0.115

Table D2: Frequency of Responses for Good Kids

Rank	ITEM	Frequency
1	Work	12
2	Study	11
3	Respect Parents	10
4	Have discipline	10
5	Help	10
6	Listen	8
7	Pray	8
8	Have Motivation	7
9	Bathe	7
10	Teggin	7
11	Respect	7

¹⁰ A value in Wolof that means having diplomacy in the way one interacts in the world.

	Elders	
12	Stay at House	7
13	Education	6
14	Greet	5
15	School	5

Table D3 Salient Responses for Good Parents

Rank	Item	Saliency
1	Educate	3.07
2	Feed	0.287
3	Take Care of	0.203
4	Be a good example	0.195
5	Work	0.178
6	Pray	0.178
7	Respect Family	0.17
8	Respect Husband	0.153
9	Clothe	0.102
10	Go to Hospital	0.1
11	Follow Islam	0.092
12	Teach	0.085
13	Teggin	0.083
14	Keep track of	0.083
15	Stay at house	0.077

Table D4: Frequency of Items for Good Parents

Rank	Item	Frequency
1	Educate	11
2	Work	11
3	Feed	10
4	Pray	8
5	Take Care of	7
6	Be a good example	7
7	Respect Family	6
8	Respect Husband	5
9	Follow Islam	5
10	Teach	5

11	Clothe	4
12	Go to Hospital	4
13	Teggin	4
14	Keep track of	4
15	Bathe	4

Figure D1
 Anthropac Feed Question One
 SORTED BY SMITHS

	ITEM	FREQUENCY	RESP PCT	AVG RANK	Smith's S
1	EDUCATE	11	42	3.818	0.307
2	FEED	10	38	3.400	0.287
3	TAKE CARE OF	7	27	3.571	0.203
4	BE A GOOD EXAMPLE	7	27	3.000	0.195
5	PRAY	8	31	4.125	0.178
6	WORK	11	42	6.545	0.178
7	RESPECT FAMILY	6	23	2.500	0.170
8	RESPECT HUSBAND	5	19	3.400	0.153
9	CLOTHE	4	15	6.500	0.102
10	GO TO HOSPITAL	4	15	3.250	0.100
11	FOLLOW ISLAM	5	19	5.200	0.092
12	TEACH	5	19	6.400	0.085
13	TEGGIN	4	15	4.000	0.083
14	KEEP TRACK OF	4	15	8.000	0.083
15	STAY AT HOUSE	2	8	1.000	0.077
16	BATHE	4	15	6.750	0.075
17	PUT ON GOOD PATH	3	12	3.333	0.065
18	DISCIPLINE	3	12	3.667	0.062
19	INITIATIVE	3	12	8.333	0.060
20	HELP FAMILY	3	12	5.333	0.059
21	LIKE ALL KIDS	2	8	4.500	0.057
22	PROPER APPEARANCE	2	8	2.500	0.054
23	BE PEACEFUL	4	15	5.750	0.049
24	FOLLOW TRADITION	2	8	4.000	0.045
25	RESPECT EVERYONE	2	8	5.500	0.045
26	HONEST	1	4	1.000	0.038
27	MOTIVATED	1	4	1.000	0.038
28	HELP	3	12	8.000	0.034
29	HAVE MONEY	2	8	8.500	0.034
30	KNOW YOUR KIDS	1	4	2.000	0.032
31	ENTER IN SCHOOL	3	12	8.667	0.030
32	LIKE FAMILY	2	8	4.500	0.030
33	SACRIFICE	3	12	10.333	0.029
34	GIVE	3	12	8.333	0.028
35	COMPASSIONATE	2	8	4.000	0.026
36	RESPECT NEIGHBORS	1	4	3.000	0.023
37	HAVE VALUES	1	4	9.000	0.019
38	BE EDUCATED	1	4	5.000	0.019
39	DISCUSS	2	8	8.000	0.018
40	BE OPEN	2	8	7.500	0.017
41	RESPECT CHILDREN	1	4	5.000	0.013
42	BE KIND	1	4	5.000	0.013
43	WATCH	1	4	3.000	0.013
44	LET THEM GROW UP	2	8	9.500	0.009
	Total/Average:	154	5.923		

Respondent-Level Statistics:

	1	2	3	4
	Length of	Frequency	Avg Freque	Corr w/ Fr
	-----	-----	-----	-----
1	5.00	35.00	7.00	0.04
2	7.00	34.00	4.86	-0.22
3	13.00	64.00	4.92	-0.31
4 WATCH	5.00	17.00	3.40	0.61
5	5.00	29.00	5.80	-0.64
6	3.00	13.00	4.33	-1.00
7	6.00	41.00	6.83	-0.75
8	6.00	32.00	5.33	0.18
9	16.00	91.00	5.69	0.23
10	12.00	64.00	5.33	-0.38
11	3.00	18.00	6.00	0.87
12	2.00	13.00	6.50	-1.00
13	10.00	51.00	5.10	-0.41
14	6.00	24.00	4.00	-0.78
15	7.00	27.00	3.86	0.06
16	5.00	35.00	7.00	-0.38
17	4.00	24.00	6.00	0.59
18	6.00	37.00	6.17	0.19
19	5.00	15.00	3.00	0.15
20	3.00	15.00	5.00	-0.76
21	6.00	43.00	7.17	-0.12
22	4.00	23.00	5.75	-0.91
23	3.00	27.00	9.00	0.94
24	5.00	17.00	3.40	-0.07
25	5.00	31.00	6.20	-0.89
26	2.00	16.00	8.00	-1.00

Freelist indicator matrix saved as dataset C:\FLMAT
 Aggregate frequencies and salience measures saved as dataset C:\FLSTATS
 Resp-group correlations saved as dataset C:\FLRESP

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Figure D2
 Anthropac feed for Question Two
 SORTED BY SMITHS

	ITEM	FREQUENCY	RESP PCT	AVG RANK	Smith's S
1	RESPECT PARENTS	10	40	4.000	0.251
2	MOTIVATED	7	28	2.143	0.243
3	STUDY	11	44	5.273	0.237
4	DISCIPLINE	10	40	3.900	0.234
5	LISTEN	8	32	3.625	0.222
6	BATHE	7	28	2.857	0.222
7	WORK	12	48	5.417	0.218
8	TEGGIN	7	28	3.571	0.207
9	EDUCATION	6	24	2.667	0.196
10	PRAY	8	32	5.000	0.175
11	RESPECT ELDERS	7	28	4.429	0.156
12	HELP	10	40	6.800	0.143
13	STAY AT HOUSE	6	24	5.167	0.136
14	GREET	5	20	4.000	0.131
15	SCHOOL	5	20	5.000	0.115
16	BE POLITE	4	16	3.750	0.106
17	INITIATIVE	5	20	6.800	0.078
18	FOLLOW ISLAM	3	12	4.667	0.078
19	FOLLOW EXAMPLE OF PARENTS	4	16	5.250	0.070
20	RESPECT EVERYONE	3	12	5.667	0.065
21	WALK SLOWLY	2	8	3.500	0.058
22	STAY WITH MOTHER	3	12	6.333	0.051
23	KNOW CULTURE	3	12	7.000	0.048
24	PEACEFUL	2	8	4.000	0.046
25	LIKE MOTHER	2	8	5.500	0.045
26	COMPASSIONATE	3	12	7.000	0.043
27	TAKE CARE OF KIDS	3	12	8.333	0.043
28	KNOW PARENTS	1	4	1.000	0.040
29	HAVE COURAGE	1	4	1.000	0.040
30	SHARE	2	8	2.500	0.040
31	DO GOOD	3	12	6.333	0.038
32	LEARN QURAN	2	8	8.000	0.038
33	KERSA	1	4	2.000	0.037
34	SUTURA	1	4	2.000	0.036
35	PRINCIPLE	1	4	2.000	0.033
36	LIKE WHERE YOU LIVE	1	4	3.000	0.029
37	GROW UP	2	8	8.000	0.024
38	SIT	2	8	7.000	0.020
39	INTRINSIC MOTIVATION	1	4	8.000	0.012
40	INTELLIGENT	1	4	11.000	0.011
41	LIKE FATHER	1	4	10.000	0.010
42	STAY WITH FAMILY	1	4	9.000	0.008
43	HAVE SUCCESS	1	4	10.000	0.004
44	BE THANKFUL	1	4	10.000	0.004
45	BE OPEN	1	4	14.000	0.003
	Total/Average:	180	7.200		

Respondent-Level Statistics:

	1	2	3	4
	Length of	Frequency	Avg Freque	Corr w/ Fr
	-----	-----	-----	-----
1 A	5.00	35.00	7.00	0.23
2 B	9.00	53.00	5.89	-0.44
3 C	6.00	40.00	6.67	0.10
4 D	9.00	57.00	6.33	-0.17
5 E	8.00	50.00	6.25	-0.06
6 F	6.00	36.00	6.00	0.63
7 G	6.00	46.00	7.67	0.56
8 H	11.00	73.00	6.64	0.37
9 I	14.00	67.00	4.79	-0.08
10 J	7.00	37.00	5.29	-0.48
11 K	10.00	60.00	6.00	-0.24
12 L	7.00	53.00	7.57	-0.35
13 M	12.00	70.00	5.83	-0.18
14 N	3.00	20.00	6.67	-0.40
15 O	3.00	11.00	3.67	0.00
16 P	7.00	50.00	7.14	0.14
17 Q	5.00	38.00	7.60	0.49
18 R	3.00	20.00	6.67	0.24
19 S	6.00	52.00	8.67	0.25
20 T	9.00	67.00	7.44	-0.37
21 U	3.00	24.00	8.00	0.00
22 V	9.00	72.00	8.00	-0.28
23 W	9.00	61.00	6.78	0.23
24 X	9.00	44.00	4.89	-0.46
25 Y	4.00	36.00	9.00	0.63

Freelist indicator matrix saved as dataset C:\FLMAT

Aggregate frequencies and salience measures saved as dataset C:\FLSTATS

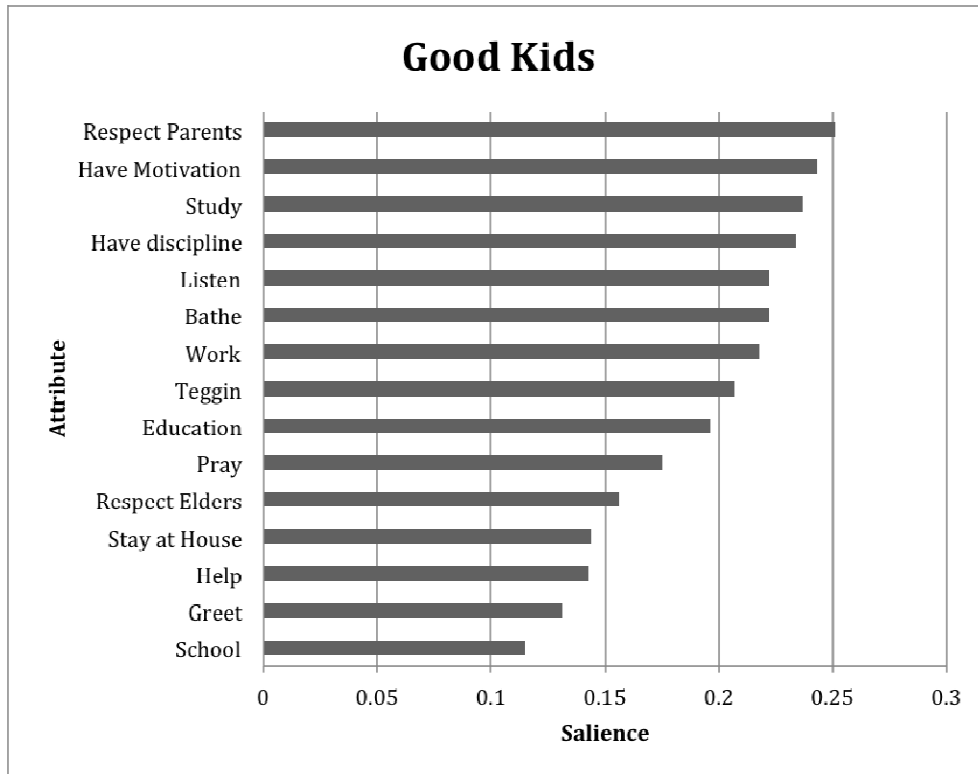
Resp-group correlations saved as dataset C:\FLRESP

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Appendix E

Graph E1



Graph E2

