Cards, Creatures and Almost Anything:  
A Study of Children’s Trading

A dissertation submitted to the  
Kent State University Graduate School of Management  
In partial fulfillment of the requirements  
for the degree of  
Doctor of Philosophy

by  
Marie A. Yeh  
Summer, 2013
Dissertation written by
Marie A. Yeh
B.S., University of Maryland, College Park, 1992
M.S.Ed., Old Dominion University, 1996
Ph.D., Kent State University, 2013

Approved by

___________________________________
Robert D. Jewell, Chair
Doctoral Dissertation Committee

___________________________________
Alfred Guiffrida, Member
Doctoral Dissertation Committee

___________________________________
Cesar Zamudio, Member
Doctoral Dissertation Committee

Accepted by

___________________________________
Representative
College of Business Administration

___________________________________
Dean’s Office
College of Business Administration
Acknowledgements

This dissertation has been a long, rewarding journey that was inspired by my son, Sean, and that came to fruition through the staunch belief and faith of my advisor, Bob Jewell. To have the faith and support of such a supportive, intelligent and caring person as him, who as an advisor facilitated my growth and learning like I never have faced before and likely never will again, is an experience for which I will forever be grateful. I am also very grateful to my committee members, past and current, which include Al Guiffrida, Larry Marks, Mike Mayo and Cesar Zamudio, whose comments, feedback and assistance were incredibly helpful. To have been allowed the luxury of working on this dissertation without going to the poor house, I give thanks to the most helpful of department chairs, Pam Grimm, Kent State’s Graduate Student Senate and Beth Brandt. I also thank the children and their parents as well as the staff that so patiently work with them on a daily basis with little monetary reward for their support and cooperation in working with the hundreds of children who participated in this work. Finally, this work would not have been possible without the unwavering support from my loving husband, John, and the two greatest, smartest children in the world, Madi and Sean, who helped me stay sane and whole through this process and who inspire me every day to make myself a better person and the world a better place. I am incredibly lucky to have been blessed to have the love and support of the world’s finest people.
## TABLE OF CONTENTS

**CHAPTER 1: INTRODUCTION**

Outline of Dissertation ................................................................. 17

Children as Consumers ........................................................................ 18

How Do Children Get What They Want? ........................................ 18

Consumer Socialization ...................................................................... 21

Social Learning & Socialization Agents ........................................... 22

The Cognitive Developmental Approach to Consumer Socialization .... 26

The Gap in Understanding Children as Consumers ................................. 32

Addressing the Gap through the Study of Children’s Trading ................. 37

The Socio-Cultural Framework ............................................................ 38

Theoretical Contribution ..................................................................... 40

**CHAPTER 2: AN EXPLORATION OF CHILDREN’S TRADING**

Children’s Trading ............................................................................. 44

Barter ................................................................................................. 51

Play .................................................................................................... 63

A Conceptual Model of Children’s Trading ........................................... 66

Study One ............................................................................................ 70

Methodology ....................................................................................... 70

Arranged Non-Participant Observation .............................................. 72
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>74</td>
</tr>
<tr>
<td>The Sample</td>
<td>75</td>
</tr>
<tr>
<td>Age as Factor.</td>
<td>75</td>
</tr>
<tr>
<td>Gender as Factor.</td>
<td>76</td>
</tr>
<tr>
<td>Snowball Sampling</td>
<td>77</td>
</tr>
<tr>
<td>The Data</td>
<td>79</td>
</tr>
<tr>
<td>Analysis</td>
<td>82</td>
</tr>
<tr>
<td><strong>Study One Findings</strong></td>
<td>84</td>
</tr>
<tr>
<td>Antecedents of Trading</td>
<td>85</td>
</tr>
<tr>
<td>Parents</td>
<td>86</td>
</tr>
<tr>
<td>Siblings</td>
<td>91</td>
</tr>
<tr>
<td>Peers</td>
<td>92</td>
</tr>
<tr>
<td>The Existing Relationship between the Child and Trading Partners</td>
<td>93</td>
</tr>
<tr>
<td>Socio-Cultural Context</td>
<td>95</td>
</tr>
<tr>
<td>A Place with Critical Mass</td>
<td>96</td>
</tr>
<tr>
<td>Traded Goods</td>
<td>97</td>
</tr>
<tr>
<td>Aspects of the Child</td>
<td>100</td>
</tr>
<tr>
<td>Motivation to Trade</td>
<td>106</td>
</tr>
<tr>
<td>The Trading Process</td>
<td>110</td>
</tr>
<tr>
<td>The Stages of Trading</td>
<td>111</td>
</tr>
<tr>
<td>Actions in Trading</td>
<td>115</td>
</tr>
<tr>
<td>The Valuation Process</td>
<td>116</td>
</tr>
</tbody>
</table>
Perceptual Attributes........................................................................................................... 117
Cognitive Attributes............................................................................................................. 118
Value Derived from Contexts .............................................................................................. 119
The Valuation Array ............................................................................................................. 121
The Valuation Ratio .............................................................................................................. 126
The Negotiation Process .................................................................................................... 126
Factors that Influence the Enactment of Negotiation ......................................................... 127
Actions in Negotiation ......................................................................................................... 130
Persuasion ............................................................................................................................ 132
Stipulations .......................................................................................................................... 133
Commentary of Third Parties ............................................................................................. 135
Having More Than Two Parties .......................................................................................... 136
Fairness and Ethics in Trading ............................................................................................. 138
Group Norms and Dynamics ............................................................................................... 141
Socialization ........................................................................................................................ 146
Trader’s Regret ..................................................................................................................... 152

Study One Discussion ......................................................................................................... 153

CHAPTER 3: CHILDREN AND THEIR VALUATION OF TRADED OBJECTS .......... 169

The Determination of Value ................................................................................................. 169
Conjoint Analysis .................................................................................................................. 171
Different Methods/Models of Conjoint Analysis. ............................................................... 172
Rationale for Use of HB Conjoint Analysis. ........................................................................ 174
## Hypothesis Development

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1</td>
<td>177</td>
</tr>
<tr>
<td>Age’s Effect on Valuations</td>
<td>177</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>179</td>
</tr>
<tr>
<td>Gender’s Effect on Valuations</td>
<td>179</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>182</td>
</tr>
</tbody>
</table>

## Study Two

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Design</td>
<td>187</td>
</tr>
<tr>
<td>Dependent variables</td>
<td>187</td>
</tr>
<tr>
<td>Covariates</td>
<td>188</td>
</tr>
<tr>
<td>Prior Knowledge</td>
<td>189</td>
</tr>
<tr>
<td>Attitudes</td>
<td>190</td>
</tr>
<tr>
<td>Stimulus Creation</td>
<td>191</td>
</tr>
<tr>
<td>Pretest of Stimulus</td>
<td>192</td>
</tr>
<tr>
<td>Participant Recruitment</td>
<td>194</td>
</tr>
<tr>
<td>Procedure</td>
<td>194</td>
</tr>
<tr>
<td>Pretest of Study 2</td>
<td>195</td>
</tr>
</tbody>
</table>

## Study Two Results

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>196</td>
</tr>
<tr>
<td>Estimation and Analysis</td>
<td>196</td>
</tr>
<tr>
<td>Counts</td>
<td>196</td>
</tr>
<tr>
<td>Hierarchical Bayesian Estimation</td>
<td>199</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Model Fit</td>
<td>200</td>
</tr>
<tr>
<td>Hypothesis Testing</td>
<td>201</td>
</tr>
<tr>
<td>Cluster Analysis</td>
<td>208</td>
</tr>
<tr>
<td>Additional Analysis</td>
<td>213</td>
</tr>
<tr>
<td>Study 2 Discussion</td>
<td>223</td>
</tr>
<tr>
<td>The Valuation Process of Trading</td>
<td>225</td>
</tr>
<tr>
<td>Interdependence and Social Value Orientation</td>
<td>226</td>
</tr>
<tr>
<td>Hypothesis Development</td>
<td>228</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>229</td>
</tr>
<tr>
<td>Study Three</td>
<td>230</td>
</tr>
<tr>
<td>Methodology</td>
<td>230</td>
</tr>
<tr>
<td>Dependent variable</td>
<td>230</td>
</tr>
<tr>
<td>Independent variable</td>
<td>230</td>
</tr>
<tr>
<td>Covariates</td>
<td>231</td>
</tr>
<tr>
<td>Pretest of Study 3</td>
<td>233</td>
</tr>
<tr>
<td>Stimulus Modifications</td>
<td>233</td>
</tr>
<tr>
<td>Procedures</td>
<td>235</td>
</tr>
<tr>
<td>Study Three Results</td>
<td>237</td>
</tr>
<tr>
<td>Sample</td>
<td>237</td>
</tr>
<tr>
<td>Hypothesis Testing</td>
<td>237</td>
</tr>
<tr>
<td>Disaggregating Trade Behavior Using Logistic Regression</td>
<td>239</td>
</tr>
</tbody>
</table>
Cross-tabulation .......................................................... 246

Panel Logistic Regression .................................................. 249

Comparison of Conjoint Estimations with Study Two Results .............. 249

Study Three Discussion ................................................................ 253

CHAPTER 4: SUMMARY AND CONCLUSIONS ..................................... 256

Contribution to the Literature ..................................................... 257

Contribution to Marketing Practice .............................................. 260

Future Research ........................................................................ 263

REFERENCES ........................................................................... 267

APPENDIX A ........................................................................... 288

APPENDIX B ........................................................................... 289

APPENDIX C ........................................................................... 291

APPENDIX D ........................................................................... 293

APPENDIX E ........................................................................... 294

APPENDIX F ........................................................................... 296

APPENDIX G ........................................................................... 299

© Marie A. Yeh
LIST OF FIGURES

Figure 1. Children’s Products’ Packaging Featuring Trading as a Marketing Ploy ........ 15
Figure 2. Social Learning Model (Moschis and Churchill 1978) ....................................... 23
Figure 3. A Model of Children’s Trading based on the Literature ..................................... 67
Figure 4. Triangulation of Data around Children’s Trading ........................................ 71
Figure 5. Possible Inventory Valuation Curves for Different Children ...................... 122
Figure 6. Original Model of Children's Trading ............................................................. 155
Figure 7. A Model of the Antecedents of Trading .......................................................... 156
Figure 8. A Model of the Trading Process .................................................................... 157
Figure 9. Study 2 Trading Cards Stimulus Examples ................................................ 193
Figure 10. Count Relationship between Damage and Rarity ........................................ 198
Figure 11. Perceptually Salient Attribute Importance Estimations by Age Category .... 206
Figure 12. Cognitively Salient Attribute Importance Estimations by Age Category .... 207
Figure 13. Valuation (in Utils) of Animal Type by Age Category ............................... 218
Figure 14. Valuation (in Utils) of Animal Type by Gender ........................................... 219
Figure 15. Valuation (in Utils) of Health Levels by Age Category ............................. 219
Figure 16. Valuation (in Utils) of Health Levels by Gender ......................................... 220
Figure 17. Valuation (in Utils) of Damage Levels by Age Category .............................. 220
Figure 18. Valuation (in Utils) of Damage Levels by Gender ....................................... 221
Figure 19. Study 3 Trading cards stimulus .................................................................... 234
Figure 20. Means by Social Value Orientation and Age Category ............................... 239
LIST OF TABLES

Table 1. Group Observation Composition and Data................................................................. 80
Table 2. Counts for Aggregate Data for Study Two (n = 354).............................................. 197
Table 3. Significant Univariate Effects for Age Category......................................................... 204
Table 4. Significant Univariate Effects for Gender .................................................................. 205
Table 5. Attribute Importance Cluster Centroids and Significance Levels by Sample ........ 211
Table 6. Cross-Tabulation Results between Gender/Age Category and Clusters for Total Sample................................................................................................................................. 214
Table 7. Mean Utils for Each Level of Attributes (Animal Type, Health and Damage) 216
Table 8. Logistic Regression Results for Model 1................................................................. 240
Table 9. Logistic Regression Results for Model 2.................................................................. 241
Table 10. Logistic Regression Results for Model 3................................................................. 241
Table 11. Logistic Regression Results for Model 4................................................................. 244
Table 12. Logistic Regression Results for Model 5................................................................. 246
Table 13. Cross-tabulation of Social Value Orientation by Trade or Not for Children Under 8........................................................................................................................................ 247
Table 14. Cross-tabulation results of Social Value Orientation by Trade or Not for Children 8 to 12 ........................................................................................................................................ 247
Table 15. Panel Logistic Regression Results of Model 4......................................................... 248
Table 16. Significant Univariate Effects for Age Category......................................................... 252
CHAPTER 1: INTRODUCTION

“What do you call a consumer who wants to buy everything you have [and], doesn’t care what it costs ...? A marketer’s dream? Nope. You call them kids.”

(AdRelevance Intelligence Report, 2000 as cited in (Marwick 2006))

As the above quote vividly demonstrates, children are of tremendous interest to marketers as they represent 1) a primary market, as children, ages 5 to 18, engage in approximately $180 billion in purchases with their own money (American Academy of Pediatrics Committee on Communications 2006); 2) an influence market, affecting and shaping another $200 billion of their parents' spending a year (American Academy of Pediatrics Committee on Communications 2006) and; 3) a future market, as they are the next generation of consumers of all goods and services (McNeal 1992). Learning how children obtain the things they want is significant to marketers, for despite their size, influence and potential as a market, children have elusive tastes and interests as they quickly lose interest in objects moving onto the latest fad, television show, or toy of the minute (Zimmerman 2010). Understanding how children determine what objects are more valuable than others as well as how they come to make acquisition decisions would not only enhance our ability to successfully market to children but also enhance our general understanding of children overall.

However, as will subsequently be discussed, our understanding of children’s consumer behavior and decision making is limited particularly for young, elementary-
school aged children. While a large body of literature has examined issues related to how children become consumers examining age differences (see John 1999; John 2008 for review) among relevant consumer cognitions and abilities, research on young children’s actual consumer behavior and related decision-making has received scarce treatment in the literature. A notable exception is the well-explored phenomenon of the nag factor (Bridges and Briesch 2006) which explores how young children influence their parents to acquire desired objects (Atkins 1978; Belch et al. 1985; Berey and Pollay 1968; Flurry and Burns 2005; Jenkins 1979; Mangleberg 1990; Palan and Wilkes 1997; Rust 1993; Szybillo and Sosanie 1977; Ward and Wackman 1972). Studying children’s direct engagement in acquisition is difficult as children’s purchases are most often mediated by their parents who may 1) control access to money and purchase opportunities and 2) influence, even forbid, the purchase decision (Childers and Rao 1992). This assumption that young children’s participation in the marketplace is mediated by their parents combined with the inherent difficulties in studying children may explain the sparse treatment of children’s direct consumption behaviors.

However, to get around these constraints, children as young as preschoolers are able to obtain desired objects without their parent’s involvement through the act of trading. When children trade, they co-construct their own marketplace using goods they own as currency to barter with other children to acquire and dispose of objects to meet their own wants and desires. This dissertation undertakes an examination of this consumer phenomenon of children’s trading. Children’s trading is defined by this work as an act where children use goods they own to obtain goods that are new to them from
other children. Theoretically, an examination of children’s trading contributes to the
general understanding of consumer socialization as its enactment embodies important
aspects of the socialization process particularly as it relates to how children’s parents and
peers contribute to their acquisition of skills, knowledge, and attitudes relevant to their
functioning as consumers.

Additionally, when children trade, they engage in barter where the entire
consumption cycle unfolds as acquisition and disposition occur simultaneously for both
parties with both acting as a buyer and a seller. As children enact barter, consumption and
possession of the good also take place thereby creating a microcosm of the consumption
cycle that may offer insight into children’s consumer decision-making and the underlying
valuation process that occurs in barter. As a form of exchange, barter has not been well-
explicated in the literature.

This dissertation specifically evaluates a particular kind of children’s trading,
where children exchange goods that are specifically designed by the manufacturer to
be traded, such as trading cards (e.g., Topps’ baseball cards), gaming trading cards
(e.g., Pokémon), and various other small toys (Squinkies, silly bandz, etc.). This type
of trading is the focus of this dissertation because objects marketed as goods to trade
comprise a multi-billion dollar industry. Globally, the trading card game industry
estimates retail sales at approximately $2.1 billion annually (David-Marshall et al.
2009). Trading cards also enjoy a robust life on the secondary market. On a specific
Figure 1. Children’s Products’ Packaging Featuring Trading as a Marketing Ploy
day on eBay, using the average asking price for trading cards listed, the value of the secondary market is just shy of $1 million ($938,385) for 605,370 items with an average “rare” item selling for $5.09 (David-Marshall et al. 2009). At the height of the craze over silly bandz, its creator, BCP Imports, Inc., estimated their annual sales at $100 million and estimated the market (including copycat companies) to be valued at $200 million plus with a potential for $1 billion in sales globally (Horovitz 2010). In their recent relaunch, Crazy Bones, small collectible figurines that are commonly traded, sold more than 23 million figurines in the UK and Spain from March through December 2008 (iToys 2012). Spin Master, the makers of the collectible and tradable Bakugan and Zoobels toys, estimated their sales of upward of $650 million (Rockwood 2010).

Many marketers interested in children understand that making a toy tradable makes it more appealing to children (Horovitz 2010). “Kids love to trade, and that, says Yale child psychologist, Dorothy Singer, is a key to Silly Bandz’s success” (Horovitz 2010). Indeed, marketers motivate children to trade as a marketing tactic. The packaging of Silly Bandz uses the slogan ‘Collect ‘em Trade ‘em’ Wear ‘em’ (See Figure 1).

Squinkies, small squishy plastic figures, prominently encourage children to ‘Trade ‘Em!’ on their packaging (See Figure 1). “A collectible toy that sparks a craze is the toy industry's Holy Grail” (Zimmerman 2010). Managerially, understanding the mechanism of trading among children may be of interest to the makers of these products, particularly in regard to using trading as a marketing tactic.
Consequently, toy manufacturers strive to create products with not only a long cast of characters that makes them collectible, but also with rarity as a quality for certain items in the collection achieved by restricting the number produced or constraining the outlets in which some kinds of the items are made available (Zimmerman 2010). Manufacturers deliberately limit distribution/production in order to prompt repeat trips to the store as children strive to find desired, hard to find items. But these trips are mediated, controlled, and sometimes, forbidden, by children’s parents. Due to these restrictions, some children use trading with other children in possession of similar items in order to obtain hard to find goods.

**Outline of Dissertation**

This dissertation begins with a review of the literature on children and their consumer socialization then discusses the deficits that remain in our understanding of children as consumers. Then the next chapter will review literature relevant to children’s trading and then present the methodologies and results for Study One, a qualitative investigation of children and their trading behavior. The third chapter presents the theoretical framework, methodologies and results for studies two and three. Study Two specifically investigates children’s preference and valuation of the commonly traded good of trading cards with Study Three adding a trading context to examine its effect on preferences and valuation. The dissertation ends with a discussion of the theoretical contribution and managerial implications of this work.
Children as Consumers

In marketing, children are studied under two different perspectives. The first assumes that children’s participation in the marketplace is mediated by their parents assuming that young children need to influence their parents in order to obtain desired objects. Children function as influencers and this nag factor has been the focus of much study in children’s consumer research. The second assumes that children are not yet consumers but are developing into one as they grow older. The assumption here is that children are not capable or ready to participate in the marketplace which again, assumes that children do not directly participate in the marketplace. The extant literature in both schools of thought is reviewed.

How Do Children Get What They Want?

For the purposes of this dissertation, the economic action to be studied is children’s acquisition. How do children get things they want? Within the marketing literature, this question has been answered by examining how children influence their parents to obtain desired goods. Marketers have long targeted children counting on the “nag factor” or “pester power.” The nag factor describes children’s persistent requests for anything from food to clothing to toys with the goal of influencing parents’ purchases of these items (Bridges and Briesch 2006). Parents’ mediating role in purchasing for children has made it critical for researchers to understand how children use negotiation strategies on their parents to get what they want. Berey and Pollay (1968) first studied how children influence the purchase decision for breakfast cereal surveying children, ages eight to 11 and their teachers and conducting interviews with parents. Their findings indicated
that a child’s level of assertiveness did not significantly affect the mother’s purchase behavior of the cereal. In a survey of parent’s perceptions of their children’s role in family decision-making, Jenkins (1979) found that while children were perceived to influence vacation decisions, the parent’s perceptions of children’s influence on most purchases was low.

Generally, children seem to have the greatest influence over products that they will use and less influence over products used by the entire family and over those decisions with higher costs (Mangleberg 1990). Children’s influence also seemed to vary based on the stage of the decision process with children’s influence being greatest during the problem recognition stage with subsequent declines in influence as the purchase decision progresses (Belch et al. 1985; Szybillo and Sosanie 1977). Children’s influence also grows as children age (Atkins 1978; Jenkins 1979; Ward and Wackman 1972). In observations of children shopping with their parents, Rust (1993) found age differences in how children influenced their parent’s purchases. Children under the age of four were very direct in how they influenced their parents pointing or even grabbing items off the shelf that they wanted their parents to purchase. Older elementary-aged children engaged in more discussion and compromise with their parents.

Using in-depth interviews with adolescents and their parents, Palan and Wilkes (1997) classified influence strategies used by adolescents and parental responses to these strategies within the context of family purchasing behavior. Bargaining strategies (strategies used with the intention of creating agreement between family members based on mutual gain and mutually satisfactory outcomes) like money deals (offer to pay for
all or part of the purchase), other deals (offer to do certain behaviors in exchange for purchase), and reasoning (use of logical, practical arguments) were among those strategies used most and perceived as most effective by adolescents and parents.

Nicholls and Cullen (2004) propose a model of the child-parent purchase relationship based on two dimensions, self-realization (the act of understanding and creating oneself through purchase and consumption choices) and the desire for control. Pester power occurs when children attempt to achieve self-realization through consumption which conflicts with the parents need to control unnecessary or inappropriate expenditures. Here children are exploring the boundaries of their identity while parents are attempting to establish normative behaviors for the child. In doing so, parents block a child’s path towards self-definition through consumption which can cause considerable conflict.

Flurry and Burns (2005) hypothesized that a child’s influence in family decision making could be explained by the child’s active (as perceived by the child) and passive (as perceived by the mother) social power, their preference intensity and their decision history. They conducted dyadic survey research with matched pairs of mothers with their children who were in the 4th and 5th grade. Results suggest that children perceive exhibiting product knowledge, rewarding parents with “good” behavior and selecting items that parents would approve of are the best ways to positively influence purchase decisions. Negative actions that sanction parents may also be a useful influence technique. Parents perceive their children to be influential by 1) the nature of their
legitimate right to participate in decision-making and 2) their knowledge/expertise in the product category.

In summary, even very young children seem to be capable of influencing their parent’s purchase behavior using a repertoire of strategies to influence family decision making growing and developing as they age. Children’s influence, however, is limited depending on the purchase decision being made and the price of the purchase restricting children’s ability to obtain new things. How young children acquire things on their own, without parental influence or supervision, is largely ignored because it is assumed that children’s acquisition behavior is almost always mediated through their parents, an assumption that this work calls into question.

**Consumer Socialization**

Other studies of children within the field of marketing reside within the framework of *consumer socialization*, defined as the processes by which people acquire skills, knowledge, and attitudes relevant to their functioning as consumers in the marketplace (Ward 1974). Ward first coined the term in 1974 when he discussed the growing interest in understanding the development of patterns of thinking and behaving which comprise consumer behavior in children and adolescents. Consumer socialization does not focus solely on children as socialization can occur throughout the life cycle. For the purposes of this research, however, this dissertation reviews only the consumer socialization literature focusing on children to include adolescents as much of the research was conducted with adolescents. Limiting his reference to socialization behavior specifically to marketplace interactions and children, Ward (1974) conceptualized
consumer socialization as learning processes that are directly related to acquisition of consumption-related skills, knowledge and attitudes as well as the skills and knowledge children acquire about consumption and the factors that influence various motivational bases for consumption.

Moschis and Churchill (1978) were the first to present two dominant models for studying consumer socialization, the cognitive development model and the social learning model. In the cognitive development model, the patterns of thinking and behaving which comprise consumer behavior are thought to develop as a function of qualitative changes in cognitive structures that occur in stages as a person ages (John 1999; John 2008; Moschis and Churchill Jr. 1978). While the cognitive developmental approach emphasizes age and changes that occur within the individual child, the social learning approach emphasizes external influences, known as socialization agents, on the child’s development into a consumer.

Research on consumer socialization has generally proceeded from one of these two frameworks. As the treatment of consumer socialization historically began with the examination of socialization agents, a review of studies that utilize social learning as the general framework will be presented first followed by a review of works that rely on the cognitive developmental approach.

Social Learning & Socialization Agents

Based primarily on the social learning model, Moschis and Churchill (1978) were the first to offer a conceptual model for consumer socialization (see Figure 2) which had three main elements, antecedent variables, socialization processes and

22
outcomes. Antecedent variables were defined as aspects of the social setting within which learning took place. Operationally, antecedent variables used in their study included characteristics of the child, like gender, and the child’s social environment like social class. The socialization process they argued includes both the socialization agent, defined as the source of influence that transmit norms, attitudes, motivations and behaviors to the learner, and the type of learning involved (Moschis and Churchill Jr. 1978).

Figure 2. Social Learning Model (Moschis and Churchill 1978)

Types of learning through which the learner acquires consumer related cognitions and behavior include processes such as modeling—the imitation of the agent’s behavior by the learner, reinforcement—the use of rewards and punishments to reinforce the learner’s behavior, and social interaction—a less well-defined mechanism that may be a combination of the previous two types (Moschis and Churchill Jr. 1978). Socialization agents examined in their study included the family, mass media, the
school, and peers. Outcomes for consumer socialization were defined broadly as any
cognition and behavior relevant to a number of consumer behaviors with specific
measures of consumer affairs knowledge, consumer activism (socially desirable
consumer behaviors), consumer finance management, attitudes towards price,
materialism, economic motivations (cognitive orientation towards function and
economic features of products) and social motivations (cognitive orientations towards
conspicuous consumption) in their study.

Various socialization agents and their role in consumer socialization have been
the subject of research over the years to include parents and peers. The role of parents in
children’s consumer socialization has been well examined. In a survey of over 800
adolescents, ages 12 to 18, Moschis and Churchill (1978) found that parent-adolescent
communication about consumption was positively correlated with learning about
economic motivations for consumption as well as the performance of socially desirable
consumer behaviors. Specifically, parents have been found to play a mediating role in
the effect of advertising on children (Reid 1979; Rossiter and Robertson 1974).
Parenting styles (Carlson and Grossbart 1988), parent’s consumption orientation
(Carlson et al. 1990) and mother’s co-shopping with children and its impact on their
consumer socialization goals, communication about consumption with their children
(Grossbart et al. 1991), how they restrict and monitor consumption and media exposure
and their views on advertising have also been examined.

The role of peers in consumption has also been well-researched. Much of the
research however, has examined how peers influence adults’ and adolescent
consumption behaviors (Amaldoss and Jain 2008; Bearden and Etzel 1982; Childers and Rao 1992; Cotte and Wood 2004; Mandrik et al. 2005; Singh et al. 2003). Fauman (1966, as cited in Ward 1974) examined the influence of peers on brand perceptions among high school students and found that these perceptions remain stable over time, suggesting that peer influence had developed and taken hold well before the 10th grade.

Among adolescents, Moschis and Churchill Jr. (1978) demonstrated that peers were an important socialization agent contributing to the learning of materialistic values—the emphasis on possessions and money for personal happiness and social progress—and social motivations for consumption which they defined as having a cognitive orientation related to the importance of conspicuous consumption. Communications with peers about consumption was also positively related to social utility reasons—a means of gathering information about life styles and behaviors associated with uses of products—given for viewing television programming and advertising. These findings are confirmed in a follow-up study (Churchill Jr. and Moschis 1979) that surveyed adolescents finding that peers were an important source of consumer information teaching them materialistic values and social motivations for consumption. More recently, Lueg, Ponder, Beatty and Capella (2006) examined how different socialization agents influence adolescents’ choice of shopping channel, internet or mall, and found that peer communication about the channel influenced time spent shopping in that channel as well as future intent to shop using that channel.

Dotson and Hyatt (2005) find that as children get older they are more influenced by peers which runs counter to the trend in parental influence where their influence
decreases as children age. This makes much sense and is consistent with other developmental research on peer influence (Berndt 1979; Brittain 1963; O'Brien and Bierman 1988) which demonstrates the growing influence of peers on children’s behavior as they age. How young children are influenced by peers has not been the subject of exploration as it pertains to consumer socialization, likely due to two implicit assumptions; that 1) younger children, ages five to eleven, do not engage in the marketplace like pre-teens and adolescents do and that 2) when they do, the influence of parents are of primary importance as parents control young children’s participation in the marketplace.

**The Cognitive Developmental Approach to Consumer Socialization**

Most consumer socialization studies in the marketing literature have followed the cognitive developmental approach. In the cognitive developmental paradigm, consumer relevant cognitions and abilities are examined with respect to age, with the underlying assumption that age levels per se correspond to different developmental stages that would affect a child’s cognitions and abilities. The objective of research using this approach is to characterize what children know and how they think as consumers at different ages.

Within the marketing literature, Capon and Kuhn (1980) examined age differences in consumer information processing. Subjects in kindergarten, fourth grade, eighth grade and college were asked to rate their liking of notebooks that combined four different attribute dimensions that varied dichotomously (i.e., color-red/green, shape-long & thin/short & wide, etc.). Individual ANOVAs were run for each subject using their rating as the dependent variable and the four dimensions as independent variables. These
ANOVA results were categorized by their pattern of effects (i.e., no significant effects were categorized together, one main effect, interaction effects only, etc.). When these categorizations were further examined by age group, distinct patterns of responding to these multi-attribute objects emerged with more individuals demonstrating a single main effect of a dimension as they aged. But only adults displayed more than one main effect which Capon and Kuhn (1980) supposed was due to a greater ability to have preferences based on more than one dimension of an object.

John and Whitney (1986) demonstrated compelling evidence for the cognitive developmental approach. They proposed that as children become more experienced and informed, cognitive abilities undergo changes in content and organization with categorization abilities becoming more complex, more multidimensional, and more stable in character. Cognitive schemas for consumer concepts become more complex, complete, and abstract as children age. Therefore, they proposed that consumer socialization can be thought of as resulting in the development of memory structures to organize children's information about consumer subjects, and suggested that changes in children's consumer knowledge can be determined by examining changes in categorical and schematic memory structures. In a study of 135 elementary school children ages four to ten, findings strongly supported the presence of age differences in children's incorporation of individual experiences into memory scripts with distinctive differences by age in children's pattern of script development. Young children simply fail to use the variety of strategies utilized by older children and adults to facilitate the encoding and retrieval of information. Knowledge bases, which consist of information about concepts
and relationships among these concepts, develop with age as children gain experience in specific domains.

Younger children have also been shown to differ from older children in their perceptions and understanding of a product’s packaging (Soldow 1985), how they categorize products (John and Sujan 1990), how they perceive and reason about prices (Fox and Kehret-Ward 1990), understanding of economic events (Leiser et al. 1990), and how they react to advertising (Roedder 1981). Age differences have also been the focus in the examination of a number of different consumer related cognitions and behavior to include: altruistic behavior (Harbaugh and Krause 2000), decision-making (Gregan-Paxton and John 1995; Moschis and Moore 1979), the development of materialism (Chaplin and John 2007), consumer knowledge (John and Whitney Jr. 1986), self-brand connections (Chaplin and John 2005), brand name meanings, awareness and recall (Achenreiner and John 2003), brand preferences and perceptions (Bahn 1986), consumption constellations (Chaplin and Lowrey 2010), motivations for collecting (Baker and Gentry 1996), prosocial donation behavior (Blake and Rand 2010), their understanding about the production of goods (Berti et al. 1982), supply and demand (Leiser and Halachmi 2006; Thompson and Siegler 2000), the social significance of goods (Belk et al. 1982; Belk et al. 1984), the concept of money (Berti and Bombi 1981), and children’s choice behavior (John and Lakshmi-Ratan 1992).

Children also have been shown to differ significantly from adults. For example, Webley and Plaisier found no evidence that children ages five to 12 used mental accounting while evidence of adult’s use of mental accounting is quite substantial. But
not all research has supported differences between adults and children. Using economic exchanges commonly understood by both children and adults, Gianinno and Crittenden (2005) found no differences between children’s and adult’s understanding of these economic exchanges.

Deborah Roedder John (1999) formally conceptualized a developmental sequence to characterize the development of consumer knowledge, skills and values among children. This conceptual framework presents a series of stages, with transitions occurring between stages, as children’s cognitive and social abilities develop. These consumer stages are grounded in the cognitive developmental stages proposed by the work of Piaget (1969) and the social development work of Selman (1980). Piaget (1969) proposes four main stages of cognitive development starting in the sensorimotor stage, ages birth to two, where infants gain knowledge of the world through their physical actions in response to sensory stimuli. Children, ages two to seven, are in Piaget’s preoperational stage and are limited to perceiving readily-observable aspects of the environment and are centrist in their thinking focusing only on a single dimension of an object or person.

John’s perceptual stage (1999) mirrors Piaget’s preoperational stage although she adds Selman’s (1980) social perspective taking stage of egocentrism. In the perceptual stage—the first in John’s framework—children, ages four to seven, have an orientation toward immediate and readily observable perceptual features. They make distinctions based on a single dimension of an object and have encoding and organizational constraints in their cognitive abilities. Decisions are based on very limited
amounts of information, usually a single perceptual dimension. In addition, she proposes that children in this stage are egocentric, only seeing the world from their own perspective.

In Piaget’s (1969) concrete operational stage, children, ages seven to 11, are able to think more logically and more abstractly. They are able to sort and classify objects based on multiple dimensions and their relational properties as well as to understand the perspective of others. This matches John’s (1999) analytical stage, where children, ages seven to 11, are able to recognize and use underlying dimensions of an object. They are able to discriminate on more than one attribute of the object as well as make generalizations drawn from their own experience. Children in this stage have the ability to influence and negotiate for desired items better as they begin to be able to understand another’s perspective.

In the last of Piaget’s stages, formal-operation, children of ages 11 and up, are capable of even more complex thought about both concrete and hypothetical situations. John’s last stage—the reflective stage—children, ages 11 to 16, possess consumer knowledge that is more nuanced and complex. They are capable of reflective thinking and can and do focus on social meanings in consumption. In this stage, children have a heightened awareness of other’s perspectives and often feel the need to conform to group norms.

John’s stages of consumer socialization are insightful in furthering our understanding of children and explaining how age might affect their development of consumer-related cognitions and behaviors. In addition, it is very useful and highly
pragmatic for both academics and practitioners in understanding how children of various ages might respond to various marketing strategies as well as in understanding what measures need to be taken to protect children from predatory marketing practices.

However, the stages view focuses on age as the primary factor driving the transition from one stage to the next but there is little doubt that other factors such as the social environment play an important role as well in children’s consumer socialization (John 1999). In addition, the stages view of children’s cognitive development has been subjected to considerable challenge. In particular, the work of Piaget, upon which John’s consumer stages are based, has been challenged in the field of child development as progression through these stages is not always as predicted. Siegler (1998) argues that development may seem stage-like if a child’s competence is assessed every few months as changes in their competence appear abrupt. However, analysis on a smaller time scale may portray a more continuous process for development rather than a progression through stages. Piaget’s stages often lack consistency as it is often difficult to classify children into specific stages because their abilities across domains often differ greatly (Moses and Baldwin 2005). These stages also do not maintain consistency across cultures (Rogoff 1998). Experience and training also has been demonstrated to alter children’s abilities that they are supposedly incapable of according to the cognitive developmental view (Keenan 2002).

For example, Peracchio (1992) was able to eliminate age differences in learning when experimental materials and response formats were made congruent with subject’s encoding and retrieval abilities. She theorized that age differences in children’s
acquisition of event knowledge were due to differences in their ability to encode new information, as young children do not employ organizational strategies to form representation of events in their memory. Instead they rely on their everyday experiences to provide strategies to enhance learning. When new information was presented using multiple exposures in an audiovisual vs. aural format using response choices that incorporated the context of the information, age differences disappeared. Thus when experimental materials and responses formats are congruent with young children’s knowledge characteristics and learning strategies, age differences in learning are not seen. More recent research has increasingly focused on domain-specific developments as acquisition of knowledge within a specific domain may differ greatly (Keenan 2002). In addition, Piaget underestimated young children’s abilities as they can understand and learn more than previously thought (Siegler 1998). At the same time, it has been demonstrated that adolescents and adults often fall well short of the formal operational stage identified by Piaget (Moses and Baldwin 2005)

The Gap in Understanding Children as Consumers

While extant research has extensively investigated age and socialization agents as factors that drive children’s development of consumer-related knowledge, skills and abilities, gaps in the literature remain, particularly in our understanding of young, elementary-school aged children. Within the social learning framework, gaps exist in how socialization agents influence young children. Socialization agent research has primarily focused on adolescent children as it has been demonstrated that peers play a
greater role in influencing adolescent behavior than parents. Even research focused on the role of parents as socialization agents has involved older adolescent children likely due to the survey methodology most often employed. How peers influence young, elementary-school aged children’s development as consumers is not well-explicated in the literature. Research is also missing on the actual learning processes through which consumer socialization occurs (Ekstrom 2006). These processes are difficult to capture as consumer learning seems to occur through subtle processes rather than through purposeful, systematic parental training (Ward 1974).

The developmental stages and social learning frameworks have been additionally criticized in the account they provide of children. Both the cognitive developmental and social learning paradigm approach children as incomplete and focus exclusively on how they become complete resting on an authoritative view of the world not taking into account a notion of difference between children and adults (Silvers 1975). Silver (1975) criticizes these approaches to understanding children because each characterizes children as faulted members of society. By viewing children as works in progress, “the child forever stands in the shadows of adults as the analysis draws an asymmetrical comparison where the child is evaluated by the features of the adult” (p. 8, Silvers 1975).

Corsaro (1992) advocates for an interpretive reproductive approach to the study of children. By interpretive, he means children and their creation of their own unique peer cultures as they take information from the adult world to address their own concerns should be studied (Corsaro 1992). By seeing how children appropriate
information from the adult world and apply it to their own world, we can see their interpretation of that world. Reproductive captures the idea that children are not simply internalizing information and experiences gleaned from their culture but are actively contributing to the production of that culture.

As children reach a certain age, they acquire abilities and capabilities as a result. The interpretive-reproductive framework assumes a two-way relationship between the child and agents in his or her environment that is cyclical. In this view, socialization is a social and collective process where children shape and share in their own developmental experiences (Corsaro 1992). As children learn, they act on their environment to alter and change it which in turn alters their experiences and environment affecting those in their lives which affects what they learn and so on in a cyclical manner. The field of marketing acknowledges this view of children in studying the nag factor as it demonstrates how young children influence their parents to indirectly participate in the marketplace.

Previous research, especially those using the cognitive developmental framework, also tend to study cognitions and abilities that contribute to consumer behavior such as knowledge of money or categorization skills. Young children’s consumption behavior and actual engagement in the marketplace have not been well-studied. Martens, Southerton and Scott (2004) point out that the study of children and consumption surprisingly has yielded little empirical research conducted with children; those that do interpret children’s consumer culture negatively (Best 1998; Chin 1999). For this reason, Best (1998) advocates that researchers “should observe children playing with toys,
talking to children about their play... (p. 208)” Yet, studies of children’s actual consumption activities remain scarce and relatively little is known about how children engage in consumption practices and the significance these practices might play in their everyday lives (Martens et al. 2004).

In an examination of kids and commerce, Zelizer (2002) points out that the economic world of children is largely uncharted due to persistent assumptions that children are remotely involved in processes of production, consumption and distribution. She illustrates a variety of economic activity in which children are actively engaged and proposes that children establish social relations where they negotiate understanding and practices of the other participants through these acts. Interestingly, children’s trading is absent from her review of how children function as economic producers, consumers and distributors.

Levison (2000) argues that children are ignored as economic agents—those that contribute to the accomplishment of an economic purpose or result—because they lack power vis-à-vis adults. While “[y]oung and old alike seemed to have preferences which direct their behavior, subject to constraints...children are modeled as puppets, subject to family or parental utility functions and the ensuing ‘family’ decisions” (p. 126, Levison, 2000). She argues that economists should consider children as economic agents in their own right with preferences, upon which they act to the extent possible given the constraints placed upon them by adult restrictions.

Webley and Lea (1993) criticize children’s research for focusing on adult economic problems rather than on how children solve the economic problems they face.
The cognitive development approach to economic socialization assumes a monotonic process of adaptation to the economic behavior and concepts of adults (Webley and Lea 1993). Current investigations of children’s economic socialization seek to answer the question, “how do children come to understand the adult economic world?” with economic socialization studies focused on children’s learning and capabilities of adult economic behaviors, like the understanding of money, saving, and work earnings (Webley and Lea 1993). In contrast, they advocate for research that answers the question, “how do children come to solve the economic problems they face?” suggesting that research should focus on how children come to understand their own economic problems.

Study is needed on children’s practices for constructing meaning and exploring their interpretations of these practices because children have a world distinctive from our own; a world with a different purpose than that of adults (Silver 1975). “To understand the practices of children as they go about their routines, we cannot subordinate them to our experiences, to our construction of knowing, and to our forms of knowledge. Rather we are called upon to compose practices that reveal the child’s interpretive meanings as reasonable and practical to their purposes-at-hand, and in doing so, to recognize their forms of organizing the world as an alternative to our own” (p. 8, Silver 1975). If an understanding of children as consumers is really to be advanced, study of children engaged in actual consumer behaviors of their own choosing must be undertaken to understand their perspective of consumption.
Cook (2009) argues that investigating children’s consumption behavior is essential to understanding consumer culture and consumption in general. He argues that recognizing and acknowledging children as economic actors—individuals who have the capacity to shape their environment economically—disrupts individualistic assumptions about economic action that underlies most of consumption theory today as it demonstrates a dynamic relationship between the child as an economic actor and those in his or her environment. In order to understand this dynamic relationship, it is necessary to study children engaging in actual consumer behaviors (Corsaro 1992; Ekstrom 2006; Silvers 1975). In addition, a more comprehensive framework is needed to fully understand children as consumers unlike existing works which assume that a child is not a consumer already.

**Addressing the Gap through the Study of Children’s Trading**

Children’s trading is a remarkable activity children have spontaneously constructed as a way of obtaining objects they desire that works around the monetary and access constraints that they face. Using the socio-cultural framework subsequently discussed below, this dissertation proposes and demonstrates that studying children engaged in trading will advance our understanding of children as it demonstrates children acting on their own economic desires, creating their own social rules and co-opting language and objects from the adult economic world and modifying them to generate their own shared meanings and cultures using economic exchange. This behavior is embedded within a larger context as children’s trading is part of a culture created by
society, their families, and their friends, factors that by and large have been neglected in the consumer socialization literature. In order to fully understand how and why children trade, a new frame of reference needs to be incorporated into existing frameworks.

*The Socio-Cultural Framework*

De la Ville and Tartes (2010) propose an additional framework which will be called the socio-cultural approach for the study of children’s consumer behavior which is based heavily on the work of Vygotsky (1997), who believed that children actively explore their environment and are influential in shaping their own knowledge (Wertsch 1985). Vygotsky (1997) advocated that children acquire knowledge and skills deemed important by their culture through social interactions with more experienced and more knowledgeable members of their society. Consequently, social interactions are a necessary part of children’s cognitive development.

Vygotsky (1997) believed that development occurred at two sequential levels. First, interpersonal interactions between children and others trigger children’s development resulting in interpersonal growth. Later, children shift in their development from interpersonal growth to intrapersonal growth when they internalize knowledge and skills learned from interactions with others. This framework differs from social learning theory in that interaction with others is thought to directly affect intrapersonal growth in an interactional sense; that is, whereas social learning theory proposes a unidirectional influence from the socialization agent to the child, socio-cultural theory proposes that children develop and learn from others bi-directionally with a child in turn influencing those in their environment.
Using this framework, child consumer activities constitute a social activity mediated by various cultural tools where a child gradually assimilates a conventional language of consumption and a set of social standards relating to that consumption given a cultural context (de la Ville and Tartes 2010). Children thus develop as economic actors—individuals who have the capacity to shape their economic environment—within a complex cultural system. Consumption is seen as a mediated, joint social activity, not as a pure decision-making process (de la Ville 2005). The joint consumption activity has a cultural object, a product like a toy, on which attention is focused. In this framework, the self, other(s) and the object share in the co-construction of shared uses and meanings for consumption activity (de la Ville 2005).

In addition, a child’s consumption practices are framed within the normative demands of the family and its consumption style as well as those of their peers and their consumption style (de la Ville 2005). Children simultaneously learn how to consume from these norms and to consume within these norms. They must also deal with the sometimes contrary demands that occur when norms conflict; for example, when the style of dress of one’s peers conflict with parental standards of dress. These family and peer norms reside within and, in turn, are enabled and constrained by larger institutional consumption arenas such 1) organizations such as schools, retailers and the internet; 2) cultural consumption events like Christmas; 3) regulatory requirements and 4) ongoing sociotechnical design system innovations that evolve and disrupt existing consumption objects (de la Ville 2005).
Marketers also play a role in the consumer practices of children through the creation of mediating cultural tools such as packaging, brand characters and advertising. These tools, normative practices of family and peers, and the objects involved together mediate the child’s experience in any consumption activity. Throughout this process, a child, simultaneously, learns important information about social life and its normative practices (de la Ville and Tartes 2010). Given this framework, the focus of inquiry should be on how children participate in socio-cultural consumption activities (de la Ville and Tartes 2010).

**Theoretical Contribution**

This dissertation incorporates the socio-cultural framework for studying children’s trading as it captures the complexity of this behavior in a way that the cognitive developmental stages and social learning theories alone do not. However, the roles that age and learning from socialization agents play are not dismissed as it is clear that both play a critical and valid role in the enactment of this behavior. Therefore, a model for understanding children’s trading is developed that integrates all three theories in a framework that may be more broadly applicable for understanding children and their development in general.

Embedded within the process of trading is also a process of teaching and learning where young children, through their expression of agreement or disagreement to a trade, teach each other about the values and attributes of the goods they find important as well as rules and expectations for trading behavior. Peers serving as socialization agents have largely been demonstrated amongst adolescents and young adults (Carlson and Grossbart
This study demonstrates and explicates the role of young children serving as socialization agents for each other as when children trade socialization occurs.

This research also examines in more detail the process of valuation that underlies barter. As will be subsequently discussed, in barter, exchange occurs without money. Goods that are exchanged must differ from each other as there would be no reason to trade identical goods (Mishler 1979). Thus the relative value of inherently different goods must be determined. That is to say, that in order for trade to occur, one must assess the value of the good one is being offered to be of greater value than the good one proposes to give away in exchange. This dissertation empirically investigates this valuation process.

While the determination of value and how it affects consumer choices has been extensively studied among adults, how children determine value and how they make decisions based on this determination has not been well studied. When children are trading they are essentially making a discrete choice; thus this dissertation provides a context for studying how children make choice decisions. Learning how children use this valuation process when engaging in the act of trading may transfer to an understanding of children’s decision making that may help explain or predict other exchange behaviors, although study and analysis of these other behaviors would be necessary to demonstrate this and are beyond the scope of this dissertation and will be left for future study.
In addition, the study of trading will examine children as young as five engaged in the act of bargaining and negotiating with each other. Through trading, children make offers and counter offers as well as make use of a variety of persuasive communication techniques. This dissertation empirically investigates the process used by children to get what they want from each other. This will additionally illuminate children as consumers as they engage in a process of negotiation that is a fundamental part of business and marketing.

This dissertation will also contribute to the field of consumer socialization research methodologically. Most of the studies on children have used a single method, experimental design, surveys or interviews. These methodologies have limitations especially with regard to conducting research with children. Children’s ability to express what they know can be limited and vary greatly among children even of the same age as there is sometimes a gap between a child possessing conceptual knowledge and their being able to express it effectively (Moses and Baldwin 2005). This study overcomes that gap by using triangulation (Dreby 2010; Lever 1978), that is, the use of multiple methodologies to obtain multiple perspectives on a phenomenon. Here, non-participant observation, interviews with children and their parents, and choice experiments are utilized to further understand the phenomenon of trading.

In summary, studying trading in children will enable the advancement of our understanding of children as consumers and the accompanying process of socialization as well as the valuation and negotiation process of barter. In doing so, an integrated model for understanding children’s consumer behavior will be advanced as it will move our
understanding beyond traditional socialization frameworks which assume a linear transformation for the child where socialization agents’ transmission of knowledge or age drives a child’s learning and capabilities in a monotonically increasing, one-way relationship. Instead, children’s trading demonstrates that children are active economic agents who can shape and control their economic needs dynamically affecting their environment while factors in their environment in turn affect their actions.
CHAPTER 2: AN EXPLORATION OF CHILDREN’S TRADING

Children’s Trading

While not examined extensively, the study of children’s trading is not entirely new. Its study, however, most often is a tangential finding of a study whose primary focus is another phenomenon like play or language. Mishler (1979) was the first to cursorily study trading while conducting an analysis of children’s speech during three trading conversations in a first-grade classroom setting. Mishler’s focal interest in this examination was in how social structure emerges through and is constructed by language. Specifically, he examined how language is used by first grade children to determine when they are trading and how the trading sequence is set off by linguistic boundary markers. He defines the essential conditions for trading as simply two or more parties with tradable objects and trading motives. In his study, he finds that in order for an object to be tradable, it must differ from the object offered up for trade.

Mishler also mentions, although does not elaborate on, the fact that objects that are not identical must be assessed relative to each other on some standard of judgment. Trading requires the ongoing specification of those standards of values, the mutual assessment of the relative value of the objects and the determination of the general preferences and situational motives of the two parties. He finds this determination is accomplished through bargaining. Mishler (1979) noted that the bargaining to exchange
objects has a degree of orderliness and structure that is guided by rules that seem to be comprehended by both young speakers involved in a trade. The exact structure and rules used were not analyzed. Harper (2004) used a transcript from Mishler’s study to examine the characteristics of trading. He found that these young children seem to appreciate the contingency of the exchange contract and the conditionality placed on these contracts (Harper 2004).

Webley and Lea (1993) describe two studies of “swopping” behavior. Bardill (as cited in Webley and Lea 1993) conducted unstructured interviews with 30 children ages 6 to 8 while Traub (as cited in Webley 1996) conducted structured interviews and presented swopping scenarios to 60 children, 20 in each age group of 8, 10 and 12. These studies describe swopping as a very common behavior of middle childhood that peaks at age 9 or 10 declining by age 12. The general consensus among the children was that only goods of low value such as pencils, erasers, toys, football cards, stickers, books and food should be swopped otherwise parental disapproval was risked. The reasons children gave for swopping included economic and social motives (‘to get better things’ or “you do it with a friend’) as well as for the inherent fun of the activity.

In order to clarify social versus economic motives, Traub (as cited in Webley 1996) gave children a choice scenario where they are offered an “okay” pen from a friend versus a “really good” pen from a non-friend with the majority of children choosing the friend. Consistent with Henry (as cited in Webley 1996) who in a study of part-time trading among adults in a hidden, illegal economy described motivations for
trading as more social than economic, Webley and Lea (1993) conclude that “swopping is essentially an act with an economic form but a social function.”

Evaldsson (1993), in her history of marble play, found that children’s developing sense of selves were intimately linked to their possessions as well as to how they negotiated the value of marbles as objects as a part of trading and the game of marbles. Children’s status was gauged in relation to their possession of valued objects while they simultaneously negotiated the value of the objects in their play activities. In this collectively produced peer culture of playing marbles, a child often derived some sense of himself as a part of his identity in marble play. In marble activities, children control their self-interest and take chances as they put prized possessions at risk in a game. Ownership of prized objects as well as being a good player led to social differentiation as well as promoted and reinforced social groups (Evaldsson and Corsaro 1998).

In a study on children’s understanding of market forces, Leiser and Halachmi (2006) used barter rather than money with some children to separate out the difficulty children may have in understanding the concept of money and of acquisition by paying a monetary price. They reasoned that barter was based on social understanding of reciprocity that children in kindergarten already understand. However, they found that children answered questions involving money more easily than those involving barter with children reporting lower levels of understanding of the barter scenario overall. This gives some small indication that barter as a form of exchange is not the same as exchanges that use money as children had more difficulty understanding and evaluating scenarios involving barter.
Faigenbaum (2005) looked at children’s trading but as a part of a larger category of children’s exchange behavior to include gift giving and exchange of intangible goods (e.g., a promise of friendship). Faigenbaum (2005) defined an exchange episode as occurring between at least two individuals in mutual interaction with at least one of the individuals entitled to a certain item as its rightful owner or possessor where a voluntary transfer of such item occurs from one individual to another. He makes a distinction between exchanges based on associative reciprocity, when participants give goods to their peers due to friendship, and strict reciprocity, when children manifest enjoyment from the material value of the thing exchanged. Using observation on a public playground and in a public kindergarten class, an analysis of children’s speech and behavior during exchange episodes were analyzed for associative versus strict reciprocity. He found that kindergarten children engaged in more associative reciprocal exchanges than strict reciprocal exchanges, a pattern which reverses when children enter the first grade onward. Faigenbaum (2005) hypothesized that this result is due to a progressive change in children’s peer groups as they age, from an exchange culture based on associative reciprocity to an exchange culture based on strict reciprocity.

Similarly, children’s trading has been examined as a part of studies of children’s lunchtime behavior. In an ethnographic study of children’s school lunchtime behavior, Thorne (2005) examined how parents and children perceive and negotiate demographic and cultural shifts related to immigration, social class, race, the decline of public responsibility for children and the commercialization of childhood. While her analysis focuses primarily on how children constructed and negotiated differences in their
lunchtime practices, she touches upon trading of commercial food as a central practice in lunch time interactions. Those from better economic means come to school with plentiful, and highly tradable resources. Food exchange also differentiated relationships with sharing occurring between friends and trading occurring between those who were not. Children gave voice to an exchange rate between foods with a fruit rollup equaling a cookie or a big cookie equaling a popcorn ball.

Nukaga (2008) conducted participant observations of children’s food exchange in two predominantly Korean-American elementary schools to explore how children use food as a symbolic resource in negotiating group boundaries and peer interactions. While its occurrence was rare compared to gift-giving and sharing forms of food exchange, she found that trading was marked by mutual agreement on the exchange ratio prior to the transaction. She classified food exchanged for money or labor as trading whereas this work has defined children’s trading as moneyless exchange where a good is exchanged for a good. She also found trading to be a risky business in that participants could not rely on the goodwill of the other for a reciprocal relationship with the relative power of the children involved becoming more salient during trading exchanges than under other forms of food exchange.

Not surprisingly, Nukaga (2008) found that trading created, marked and strengthened the differential power among the participants. For example, Korean children often had more desirable food that only they possessed, such as seaweed. Thus when trading for this good, they were able to demonstrate power in the trading relationship. As the Korean children tended to be from more economically advantaged
families, trading also served to subtly mark class differences and help develop and reinforce children’s position in the class hierarchy. For example, one poorer African-American child who always bought the school lunch was viewed as begging for food as he had nothing to give in return and thus traded labor for food. Thus trading behavior contrasted from gift-giving and sharing which reinforced equal friendships whereas trading created, marked and strengthened the differential power among its participants. She concludes that when trading, kids marked class differences and developed a sense of their position within the class’ hierarchy.

While informative, these studies are largely descriptive of children’s trading. From these studies, children’s trading seems to be an activity that takes place during middle childhood. Goods used in swopping are small in value to avoid parental disapproval. The relationship between the parties involved also seems to matter. Motivations for trading are both economic and social. Bargaining and negotiating are inherently a part of the activity as children place value on the traded objects and then negotiate the value of traded goods amongst themselves. Older children tend to engage in trading more than younger, preschool-aged children and the activity seems to end prior to adolescence (Webley and Lea 1993). Trading uses specialized language that indicates initiation of an exchange as well as a bargaining and negotiation process as a part of the trade. Trading also reinforces differences and social status among children.

While these studies are a good foundation upon which to build in further explicating the phenomenon of children’s trading, their focus is generally on another phenomenon of interest rather than a focus on children engaged in consumption and
exchange behavior. Faigenbaum (2005), for example, simply categorized exchanges into
strict and associative reciprocity and described the differences. His discussion of
children’s barter is cursory and philosophical. His interest was in determining
developmental differences in engagement in strict versus associative reciprocity. Mishler
(1979) examined the use of language as it informs the structure of trading and focuses
primarily on the initiation of a trade with some attention provided to the bargaining in
which children engage. While more specifically focused on trading, his treatment of
children’s trading is limited to first graders and even then he only analyzes three very
brief instances of exchange. His examination is not of the trading as a form of exchange
and does not seek to understand the process of valuation that occurs.

The studies cited by Webley and Lea (1993) do examine trading as an economic
activity. However, the methodology used, interviews with children, limits the
examination of the exchange activity itself as interviews are retrospective in nature.
Evaldsson’s (1993) study of marble play perhaps comes the closest to understanding
trading as a phenomenon in which children engage although only as it occurs in marble
play where most often the trading is embedded in the play of the game. That is, the
exchange occurs as a result of play as children put up goods for trade and essentially
gamble on the outcome of the game to determine the act of exchange. In addition, these
studies examine the act of trading using marbles. Marbles, an ancient sport, are
relatively simple objects that ostensibly are made to be played in a game, although it
also is considered a collectible. While many traded objects manufactured today are also
designed to be played in a game, some are not. In addition, a specific marketing strategy
for today’s traded products, like Pokémon cards, Bakugan balls, and Crazy Bonz figures, is trading with the game play deemphasized. Many traded objects today are also a part of a larger franchise operation with the characters on these toys incorporated into television cartoon shows, as figurines, in movies, etc. These objects are more complex than marbles and therefore the engagement in their trade may be significantly different than that which occurs in simple products like marbles.

**Barter**

In its essence, children’s trading is barter. Therefore an understanding of what is known about barter will inform the research proposed here. Chapman (1980) proposed that barter has three defining characteristics. First, barter is characterized by objects that are directly exchanged with no intermediate object as a part of the transaction. Secondly, it is direct in the sense that no third party participates in the transaction such that in barter, the participants involved play identical roles as both are buyers and sellers. Lastly, Chapman (1980) describes pure barter as purely an economic transaction with the only motivation being the mutual acquisition of the other party’s goods involving no other obligation. She goes on to state though that “pure barter” only exists theoretically as in the real world, barter is a transaction between two social beings or groups and thus is influenced by the social and psychological situation. For the purposes of this dissertation, barter will be defined as an exchange that is characterized by objects that are directly exchanged between two parties, where each party involved is both a buyer and a seller,
with no intermediate object, like money, as a part of the transaction and where the ends are economic.

Barter is one of the, if not the, oldest forms of exchange, within which man has been known to engage and has been the foci for study by many fields such as economics, anthropology and sociology. The field whose study of barter is most relevant to this dissertation is that of anthropology. The study of barter from an anthropological perspective seeks to intuit its theoretical implications for understanding human culture (Barth 1971; Driver and Massey 1957; Malinowski 1953). In the anthropological literature, the words barter and trade are used as synonyms for each other and thus this discussion of their literature will as well.

In his examination of Kula, an extensive trading system that existed among the Trobrianders’ and other indigenous cultures of the South Sea Islands and the mainland of New Guinea, Malinowski (1953) views trade as the foundation of inter-tribal relations. He defines trade as an “exchange of indispensible or useful articles, done without much ceremony or regulation, under stress of dearth or need, in spasmodic, irregular intervals (p. 84-85).” The main characteristic of trade is mutual advantage where each side acquires what is needed and gives away a less useful article. He also observes that exchange is not done freely on a whim as it is subject to strict regulations such as only being done between pre-specified trading partners.

In their comparative study of North American Indians, Driver and Massey (1957) define trade as intertribal in character, involving goods used in everyday living. They describe trade as characterized by negotiation to determine the kind and amount of goods
to be exchanged with a competitive and even hostile tone. They also point out the role of trade in the process of cultural diffusion and growth. In her study of the Bushman in the Kalahari Desert of South-West Africa, Marshall Teddy’s (1958) accounts of barter highlights the role of the relationship between the two exchange agents with unequal power dynamics in relationships leading to trades that take advantage of the less powerful agent.

These anthropological accounts of barter stress the embeddedness of trade as exchange within a social matrix among communities of tribal organizations (Renfrew 1975). Indeed, Robbins (1947) defines “trading as a cooperative organization in communication to achieve economic ends” (p. 230). Through the study of its enactment, one can infer a culture’s criteria for value and its measure (Renfrew 1975).

Despite its embedded role in the culture of some societies, Chapman (1980) proposes that barter can be viewed as a cultural pattern in its own right as it allows for exchange to take place irrespective of the social or cultural definition of the partners. Barter liberates the individuals or groups from societal obligations and institutions and allows them to procure goods they need or desire. She distinguishes barter from other modes of exchange in that it can be invented on the spur of the moment, needing no tradition or specific learning. If two parties agree to exchange objects with no norm existing to counter their intentions to do so and with no one preventing the action, they will barter (Chapman 1980). Barter only requires the existence of commodities and the desire to trade.
While barter seems to prevail in primitive societies where money is not employed, barter also exists in societies where the use of money is the norm. The existence or dominance of the use of money in a society does not negate the occurrence of barter nor does it render it obsolete or replace it (Chapman 1980). Barter is practiced in both past and present economies (Dalton 1982); although in societies where money is a universal equivalent and standard medium for exchange, barter may have marginal effect on the dominant economy (Chapman 1980).

Barter has not prevailed to a larger extent in society due to the requirement of a double coincidence of need, where the prospective seller of goods must have a need for the goods the buyer wants to use in the exchange and vice versa. The search for such a match is onerous which accounts for the perception of barter as a highly inefficient process (Mpingarnjira and Oliver 2011). The use of money encourages the exchange of high-quality products eliminating the double coincidence of need and thus requires less transaction time than that needed in barter (Williamson and Wright 1994). But the rise in information technology has given growth to the barter trade industry which is comprised of third party organizations that facilitate the match between individuals and/or organizations and their barter exchanges although these organizations often assign credits or monetary valuations to goods eliminating the double coincidence of need (Bornhofen 1984; Mpingarnjira and Oliver 2011; Pacione 1997; Williams 1996). While eliminating the involvement of money, this practice no longer meets the definition of barter as it introduces a third party and does not usually result in a direct exchange of objects.
between two parties. Parties involved also do not play identical roles in the same exchange.

Barter also appears to become more prevalently practiced in times of economic crisis or in countries with economic instability (Kaikati 1976; Mir 2013; Pertot 1972). In a macroeconomic analysis, Marvasti and Smyth (1998) argue and demonstrate that domestic barter flourishes during economic downturns as well as during inflationary periods. Kaikati (1976) reported a reemergence of barter as a result of rampant inflation, persistent recession and widespread shortages of raw materials (e.g., the oil crisis). Egan and Shipley (1996) observe that during difficult economic times, demand for goods exist but firms do not have the monetary means to pay. Barter then allows firms to facilitate payments without the need for cash facilitating the continued flow of goods without needing adequate cash flows. The Economist (2002) reported the increased use of the “ancient business practice” of barter as a response to a sagging economy.

More recently, NPR (Antolini 2008) reported on barterers’ “comeback amid tight times.” Spain’s deep economic crisis has driven unemployment rates to 26% and a startling 55% among young people (Mir 2013). To get by, Spaniards are increasingly turning to barter (Mir 2013). In developing countries, barter allows for countries with unstable currencies to acquire capital goods (Kaikati 1976) where they otherwise would not be able to, due to lack of cash flow. In Russia, barter transactions have reached an unprecedented level. Aukutsionek (2001) reported that in Russia all industrial firms in his survey were involved in barter with barter representing as much as half or more of their
entire inventory turnover. Barter acts as a shock absorber allowing for adjustments in the economic environment to take place (Aukutsionek 2001).

Thus barter can be used as a strategic tool by firms to gain financial and marketing benefits (Huszagh and Barksdale 1986; Kaikati 1976; Mpingarnjira and Oliver 2011). Barter can help firms at an operational level conserve cash improving cash flow, generate incremental sales and profits, and maintain present product price integrity (Mpingarnjira and Oliver 2011). It also facilitates market access by allowing firms to enter new markets, facilitating transactions with governments and foreign partners, and reducing the impact of protectionist regulations in some countries. Barter also helps resolve issues involved in foreign exchange of currency and pricing reducing the impact of fluctuating currency values as well as guaranteeing payment.

Barter also has associated costs and problems. Negotiations of barter deals can be protracted and require considerable staff time and commitment (Kaikati 1976; Oliver and Mpingarnjira 2011). It may also be difficult to assign a monetary value to barter arrangements causing problems with financial and tax reporting (Kaikati 1976). Product quality may also be an issue as barter may result from excess inventory that has proven difficult to sell through normal channels (Mardak 2002).

From a review of the literature, a model of barter begins to emerge. Barter is a system that incorporates processes like bargaining and negotiation, valuation of goods, bundling of goods, etc. that may or may not result in a trade of goods. Barter can result in trade that is characterized by objects that are directly exchanged between two parties with no intermediate object, like money, as a part of the transaction. Its outcome is
economic. Goods exchanging hands is the primary goal for the trade as separate from other forms of reciprocal exchange like gift giving. In barter, the roles of the parties involved are identical, with both parties acting as a buyer and seller in the transaction.

In order for a trade to occur, both parties must see mutual advantage where each side acquires what is needed or desired and gives away a less useful or desired article. Achieving mutual advantage, however, is not easy due to a requirement of a double coincidence of need, where the prospective seller of goods must have a need for the goods the buyer wants to use in the exchange and vice versa. Thus barter often involves protracted negotiations and the enactment of explicit or implicit rules. As it also seems to prevail where money is either nonexistent, unavailable or considered unstable as a measure of value, it can be inferred that barter allows for exchange to take place irrespective of the economic situation of the parties involved. Parties only need goods of interest to the other party in order for barter to occur.

The existence of children’s trading parallels that of the existence of trading in past and present cultures. Children’s access and ability to use money is constrained. To get around these constraints, they create a marketplace with each other using barter to obtain items new to them. When the understanding of how barter exists from a socio-cultural perspective is overlaid on how the phenomenon of children’s trading occurs, it is anticipated that many of the theoretical findings seen at the socio-cultural level will also occur in the lives of children. As Renfrew (1975) stated about the anthropological study of trading, through the study of children trading, children’s criteria for value and its measure can be inferred. In addition, barter as a phenomenon has not been well-
examined in the marketing literature as a form of exchange, likely because it is a marginal form of exchange for adults in most developed countries. But barter is still practiced, especially during economic downturns, and is a more dominant form of exchange in less developed countries with less stable currencies. In barter, two parties arguably must see value in each other’s offerings. This valuation process of barter has not been examined.

Inherent in the process of barter is negotiation (Driver and Massey 1957), defined as a discussion between conflicting parties with the aim of reaching agreement over a divergence of interests (Pruitt 1998). These interests may include the distribution of scarce resources, work procedures, the interpretation of facts, or some commonly held opinion or belief (De Dreu et al. 2007). At its core, negotiation is about distributing and creating value (De Dreu et al. 2007). Value in negotiation situations can be about gains or losses or both simultaneously (Larrick and Blount 1997). In addition, while value is often material and tangible, it need not be and good negotiations take material as well as nonmaterial results into consideration (De Dreu et al. 2007). In negotiation, value is also relative to some comparison standard which influences the setting of one’s aspirations or the determination of one’s limits.

Negotiations can be based on a single dimension of value or multiple dimensions. When multiple issues are at hand, it becomes less and less likely that parties will disagree on each and every issue, see all issues as equally important and have the same rank order of issue importance (Raiffa 1982). When parties are not diametrically opposed to each other’s preferences on all issues, a negotiation has integrative potential
(Pruitt 1981) where the agreement has a higher joint outcome than 50-50 compromises or victory-for-one solutions (De Dreu et al. 2007). Integrative agreements are superior to distributive agreements, which focus on the distribution of outcomes that imply either an equal or unequal split of resources. In integrative agreements, both parties are happy with the agreement, feel self-efficacious and are motivated to accurately implement the negotiated agreement (O'Connor and Arnold 2001).

One arena of study in negotiations that may be of particular relevance to understanding children’s trading is the concept of shared mental models. A mental model is defined as a cognitive representation of the expected negotiation, a representation that encompasses understanding of the self, negotiator relationships, attributes about the other, and perceptions and knowledge of the bargaining structure and process (Bazerman et al. 2000). Mental models have been studied as either individually held cognitive concepts or shared models where negotiators quickly create shared understandings of the situation, the parties and the rules of acceptable behavior (Messick 1993). Of interest for children’s trading is shared mental models, and how the interaction itself, as it evolves in the negotiation, defines the meanings for the involved parties (Bazerman et al. 2000). The negotiation script is shared and dynamic, involving norms and rules for responsiveness, reciprocity and truth telling among other things (Bazerman et al. 2000). The collective scripts, norms and rules children use in the act of trading may inform understanding of negotiation.

What is known about children’s bargaining and negotiating skills in the context of acquisition is contained within the context of influencing familial purchases. As was
stated, this has been studied under the assumption that young children do not directly participate in the marketplace. But other studies have examined children’s bargaining and negotiation behavior directly. Eiser and Eiser (1976) examined how children’s competitive/cooperative/individualistic orientations affected the kind of information requested within the context of a hypothetical trading game between explorers and Indians among 6th and 8th graders. Children were given four alternative goods and made 20 trades with programmed partners. While they were told the value of the goods they received and the cost of the goods they sent, they did not know the corresponding information for their trading partner but could buy that information from the researcher. Differences were seen in subjects who were individualistic asking for more value information about their partner rather than their partner’s cost information.

Benton (1971) examined how friend/non-friend/neutral relationships and gender affected children’s views of bargaining outcomes about preference ranked toys. He found that the nature of the relationship made little difference to male children while it profoundly affected pre-negotiation attitude and bargaining behavior among girls. Boys’ bargaining behavior was based more on differential productivity with those experiencing success in the task finding a more favorable allocation more acceptable with equal allocations found less acceptable than those boys who failed the task. Using hypothetical stories and pictures, Harris, Nunez and Brett (2001) tested preschoolers and kindergartners to determine if they understood the conditional rules surrounding swapping situations finding that even very young children are sensitive to the obligations incurred in an exchange agreement.
The field of economics has also examined bargaining among children. Harbaugh, Krause and Liday (2003) studied the development of bargaining behavior in children ages 7 through 18 using ultimatum and dictator games. In the ultimatum game, one party is the proposer who suggests how to split some pot of money between the two parties. If the responder accepts the offer, they both keep the money; but if the responder rejects the offer, neither get any money. In economic theory, people responding rationally will always seek to maximize their utility which in this situation means that the proposer should offer as little money as possible as the responder has an incentive to accept any offer because rejection of the offer makes them both worse off than a small payoff. However, studies among adults (Guth et al. 1982) have found offers typically have a mean of about 40% of the endowment with differences across culture (Roth et al. 1991) and gender (Eckel and Grossman 1998). Dictator games follow the same rules except the responder has no opportunity to respond and must accept the offer.

Among children, Harbaugh et. al. (2003) found systematic changes with age with children making considerably smaller proposals than adults in both games with children accepting smaller proposals in ultimatum games. The youngest children, 2nd graders, made the lowest proposal and had the highest acceptance rates. Despite these differences, this study found that even in 2nd grade, children are rational and strategic in the behavior coming close to maximizing their utility given acceptance rates in the games. This suggests that young children are quite capable of engaging in bargaining and negotiation.
Harbaugh, Krause and Vesterlund (2007) conducted an additional study using ultimatum games with children, ages 8 to 18, adding amount of information as a treatment condition with one group knowing only their own and their partner’s outcome history and another group given information about how the entire group behaved. Again, they found that the proposals children make are very similar to those of adults and that children learn from their experiences. They also found some evidence of social referencing with children adjusting their proposals to reflect what they see others proposing. This effect, interestingly enough, increases with age suggesting that as children get older they are increasingly influenced by what others do, which is particularly significant since their payoffs did not increase by doing so.

These studies demonstrate that even very young children seem to understand at some level how to bargain and negotiate. These abilities, however, may systematically differ by age which may explain the emergence of trading during middle childhood as children’s abilities to engage in negotiation increase which may cause systematic differences in children of different ages trade.

In addition, in a negotiation parties depend on each other to acquire positive outcomes, avoid negative outcomes or both creating situations that involve interdependence between the parties (De Dreu et.al. 2007). Arguably negotiations are initiated because both parties see benefits from agreement and therefore have an incentive to cooperate with each other. However, each party also has a competitive incentive to maximize one’s personal gain. Problems caused by this conflict due to interdependence begs the question “why do people negotiate?” a question De Dreu et al. (2007) state as a
largely unanswered question in the literature examining negotiation. This question is relevant to the existence of children’s trading as children voluntarily engage in barter which can involve negotiation and interdependence. What might motivate children to engage in an act that could potentially lead to negative outcomes for them?

**Play**

One answer to this question may be found in examining the existing literature on children’s trading. Many studies that have captured the phenomenon of trading have examined play. For example, Faigenbaum (2005) and Evaldsson (1993) observed children on the playground trading. Therefore, children’s trading seems to occur with play or in places children play although trading has occurred in settings where play is not taking place such as during school lunch. Perhaps one motivation for engagement in trading is that it is form of play for children.

Defining what constitutes play, however, has been theoretically challenging as it has multiple forms, functions, characteristics, and contexts and is a phenomenon of cross disciplinary interest (Schwartzman 1976; Smith and Vollstedt 1985; Sutton-Smith 2001; Wood 2009). As such it has been defined according to a variety of different criteria from behavioral factors, to internal mood states and dispositions, to the social contexts that permit or provoke play activities (Wood 2009).

What defines play specifically though is a source of debate. For example, one of the most commonly agreed upon definitional criteria for play corresponds to a means over ends dispositional criterion. Means over ends assumes that children are less concerned with the outcome of their behavior than with the behavioral processes
involved. That is, play seems to not serve an apparent immediate purpose (Rubin et al. 1983). However, rule-bound play, as is the case with sports, blurs the distinction between play and work (Sutton-Smith 1997) as it does have a specific purpose. Rather than having a definitive categorization of play versus work, Pellegrini (1991) proposed that characteristics of play can be conceptualized along a continuum from pure play to non-play such that the more characteristics of play an event possesses the more playful the event. Other characteristics thought to encompass play include positive affect, intrinsic motivation, non-literality, active engagement, symbolic activity and representation, control and autonomy, and dependence on internal rather than external rules (Krasnor and Pepler 1980; Rubin et al. 1983; Smith and Vollstedt 1985; Wood 2009)

However, research into how to define and understand play has been criticized for reflecting the perspective of adults primarily considering the views of parents, practitioners and theorists (Glenn et al. 2012; Singh and Gupta 2012; Sutton-Smith 1966; Sutton-Smith 2001). As the position of this dissertation is that the same is true in our field’s study of children’s consumer behavior, literature that examines children’s point of view on defining play is deemed to be of most relevance.

In interviews with kindergarten children where they were asked to classify their activities in the classroom as play or work, characteristics that defined play included the activity being voluntary where children could choose to participate (King 1979). This sentiment is echoed by Huizinga (1950) who describes play as free. “The need for it is only urgent to the extent that the enjoyment of it makes it a need… It is never imposed
by physical necessity or moral duty. It is never a task. It is done at leisure, during “free
time” (p. 8, Huizinga 1950). Another aspect that characterized play was the degree of
standardization imposed on them by the teacher. The more dimensions of the activity
that were under the child’s control the greater the likelihood the activity was labeled as
play. The activities labeled as play were also not seen as important to the educational
function of the classroom.

Using unstructured focus groups, Glenn et.al. (2012) examined the meaning of
play among children ages 7 to 9 and found that children see almost anything as an
opportunity for play and would play almost anywhere with almost anybody.
Interestingly, children did not depict play as fulfilling any particular purpose or
outcome. These results were consistent with Rubin et.al. (1983) who defined play as an
activity where the means is more important than the ends although children viewed
games and sports as play including play that involved rules and structure that had some
goal orientation (Glenn et.al. 2012; King 1979). However, play was fun. Activities that
were boring, were not considered play. Miller and Kuhane (2008) also found that fun
was at the core of children’s choice in play activity.

Regardless of how it is defined, play is typically seen as playing an important
function in children’s development (Pelligrini 1991; Pelligrini and Smith 1998a; Sutton-
Smith 1997; Wood 2009). Many theories of play then propose it to work towards later
development; that is, play serves as practice for skills needed for adult behaviors (Bruner
1972; Piaget 1962; Vygotsky 1978) although evidence for this view is not strong
(Pelligrini and Smith 1998a). Alternatively, many view play as serving a more
immediate function in development where children use play to make a specific adjustments within the specific period of development in which they reside (Bjorklund and Green 1992; Pelligrim and Bjorklund 1997). The many benefits of play include (a) increased physical activity which may facilitate brain development and function (Berliner 2001; Pelligrim and Smith 1998b), (b) promotion of mental health enabling children to take risks, think through decisions and gain self-confidence (Mental Health Foundation 1999), (c) promotion of cognitive learning (Bennett et al. 1987) and (d) the promotion of social learning in the development of friendships, social networks, social skills and competence as well as the management of conflict, aggression and inter-group relations (Blatchford and Sharp 1994; Blatchford 1998).

Children’s trading maps onto children’s criteria for play quite well as it is an activity unmediated by adults engaged in voluntarily. Interviews with children report that they find trading fun (Webley and Lea 1993). It appears to be done when children have free time to play during recess or while at the playground. The role of trading as a form of play in terms of children’s development, however, has not been examined.

A Conceptual Model of Children’s Trading

This dissertation combines the literature from psychology, anthropology, sociology and marketing to develop a conceptual model of children’s trading (see Figure 3). By examining children’s trading, this research examines children’s actual exchange behavior and in doing so, integrates the social learning, cognitive developmental and socio-cultural views of the child as all of these views influence trading behavior. This research does not argue that the social learning or cognitive
developmental stages views of children are not legitimate, but rather that these views are not sufficient on their own to develop a full picture of children as consumers.

Figure 3. A Model of Children’s Trading based on the Literature

In integrating the three approaches to studying children, this model acknowledges that the critical factors in these approaches — age in the cognitive developmental view (John 1999) socialization agents such as parents, peers and media in the social learning view, and culture as created by peers (Moschis and Churchill Jr. 1978), family, institutions (i.e., schools and toy manufacturers) and society in the socio-cultural view
(de la Ville 2005; Vygotsky 1997)—are all factors that will affect a child’s engagement in and enactment of trading. This is depicted in the model by the inner most part of the model which are two children, labeled Child A and Child B, who possess characteristics that may influence his or her engagement in and enactment of trading. Consistent with cognitive developmental theory, age should be a critical factor as should other characteristics of the child such as gender, prior knowledge and experience with trading. These children are embedded within a larger network of socialization agents, labeled Influences, that shape the child and the factors associated with being a consumer. As consistent with the socio-cultural view, these factors are dynamically interrelated with the child not only being influenced by these factors but also the child actively influencing these factors in return. These factors also interact with each other; for example, a child’s peers experience these same influences when they in turn influence the child. This dynamic interplay is illustrated by embedding the child within these factors.

Research question 1: How do parents, peers and other socio-cultural factors influence children’s engagement in trading and what kinds of learning takes place? In particular, how do young children’s peers act as socialization agents in trading?

This model of trading next assumes that the trading interaction occurs between two children consistent with previous literature on barter that states that in order for trading to occur at least two parties with items of mutual interest with the desire to trade are needed for trading to occur (Chapman 1980). As informed by the anthropological literature, the tenor of these trades is affected by the nature of the relationship between the parties (Faigenbaum 2005; Marshall Thomas 1958; Webley and Lea 1993). Trading can also be used to enact differentiation in relationships
defining and reinforcing differences in status and power (Marshall Thomas 1958; Nukaga 2008; Thorne 2005).

Research question 2: How does the nature of the relationship affect the act of trading between children?

In addition, implicit and explicit rules have been found to inform the exchange process of barter (Malinowski 1953).

Research question 3: What implicit and explicit rules do children use when they enact barter?

The objects subject to trade must differ (Mishler 1979) from another in order for trade to be desired. In order for a trade of goods to take place, the goods entertained must be of mutual advantage to both parties where each side acquires what is needed and gives away a less useful article (Malinowski 1953).

Research question 4: What comprises this determination of mutual advantage? Specifically, what is the decision and valuation process where the value of one's owned good is compared to the value of the good to be obtained from another?

Due to this double coincidence of need (Mpingarnjira and Oliver 2011) barter becomes less efficient than exchange that involves money. This inefficiency, as well as the nature of the relationship between parties and the normative rules that are embedded in that relationship, may result in the engagement of bargaining and negotiation behavior which is seen less often when an exchange uses money although it certainly still occurs (Kaikati 1976; Oliver and Mpingarnjira 2011).

Research question 5: What strategies do children use in trading to bargain and negotiate with each other in order to get something that they want? And what factors may influence that process?
Of interest here is also the rationale for children’s engagement in this activity. De Dreu, Beersma, Steinel and Van Kleef (2007) state in their review of the psychology of negotiation that the answer to the question, “Why do people negotiate?” which has largely been ignored in negotiation research is about dealing with the problems caused by interdependence. But when children trade, they voluntarily engage in the act of trading that creates interdependence between each other almost deliberately introducing interdependence into their relationship.

*Research question 6:* What purpose does this act of trading then serve for children that they would choose to create an activity with interdependence between themselves?

**Study One**

These research questions are addressed in Study One which also seeks to further explicate a model of children’s trading. As an exploratory study which examines children’s trading using non-participant observation and interviews with both children and their parents, the overarching goal of this study is to gain a deeper understanding of children as consumers through their enactment of barter.

**Methodology**

Study One uses multiple methodologies to triangulate different perspectives on the phenomenon (see Figure 4). First, non-participant observation is used to observe children in typical trading sessions arranged by a parent who is asked to invite their child’s friends over to trade a good of mutual interest. Next, semi-structured interviews were held with both the children observed trading and with one of their parents.
Triangulation is a technique that can consist of using multiple and different sources, methods, investigators and/or theories (Denzin 1978). Here triangulation occurs using both sources and methods. The analysis will be triangulated using three sources of information, observations, interviews with observed children and interviews with parents. Using these three methods provides three perspectives on children’s trading, the researcher as the observer of children’s behavior, the child’s and one of the child’s parents. Triangulation across sources and methods improves the validity of findings (Lincoln and Guba 1985) through the development and confirmation of evidence for an interpretation (Wallendorf and Belk 1989). Triangulation is also necessary because research with children must be sensitive to the notion that children might possess conceptual knowledge (competence) without being able to express it effectively under all circumstances (Moses and Baldwin 2005). In other words, sometimes, some children
cannot verbalize their thoughts. Using multiple methods and informants addresses this performance issue. Having the perspectives of their parents from interviews and of the researcher from observations allow for a more complete understanding as these perspectives offer insight into children’s behavior that children may not be able to articulate themselves.

**Arranged Non-Participant Observation**

Anecdotal information about where children trade indicates that children trade at school, on the bus and in and around their homes and neighborhoods. When children will trade with each other is hard to predict. Faigenbaum (2005) and his colleagues were able to hang about a public playground to capture children engaging in exchange situations in Buenos Aires. However, such a methodology is problematic as children are considered a vulnerable and protected population as they well should. Happening on children who spontaneously trade by hanging about a public playground and recording their spontaneous play would not be tenable under stringent human subject review policies. In order to observe trading among young children, trading situations were facilitated by asking a parent of a child known to trade to arrange for a trading event where one to three of the child’s friends will be invited over to play with the purpose of trading a specified object with each other. During the height of the silly bandz craze, trading parties have been held by retailers like A.C. Moore where children are invited to come to trade silly bandz with other children (Arbogast 2010). Therefore, an arranged trading play date creates a quasi-realistic setting for children’s trading to occur.
Parents were asked to invite children with whom their child plays to their home for a trading play date. The size of the groups ranged from two to four children and was left up to the discretion of the parent. Children were asked to trade goods they normally trade with the invited children. Goods used included Pokémon cards and silly bandz. The exact good(s) to be traded was dictated by the interest of the children involved. Consequently, a couple of children brought other items (i.e., bouncy balls and squishies) with them which were also traded. It was a prerequisite for children to participate to have collections of goods that they trade.

Observations began with informed assent procedures (see Appendix A) then children were instructed to trade as they normally would amongst themselves. As a part of the assent procedures, children were told they may trade for as long as they wished to trade. Any child who wanted to discontinue trading could stop at any time. Observations were video recorded. While video recording is found to be intrusive by some (Hirschman 1986), Belk, Wallendorf and Sherry (1989) only found it problematic in the first few moments of the recording if it was problematic it all. Consistent with their findings, subjects habituated to the presence of the equipment and generally behaved as they naturally would (Belk et al. 1989). Occasionally the children would notice the cameras and clown for the camera but they almost always then seemed to ignore it. Field notes and analytical memoing were recorded during and after the observations.

The length of the observations were dictated by the children in each group; thus the observation lasted anywhere from 10 minutes to over an hour. This was necessary for ethical as well as theoretical reasons. The hope was to capture children trading
naturalistically; therefore, they should only trade if it is a desired activity. How long an observation of a focal activity of research interest should last is dictated by the length of the cycle over which the phenomenon of interest manifests itself (Wallendorf and Belk 1989). For example, in their ethnographic research of the swap meet, Belk, Sherry and Wallendorf (1989) observed a swap meet for four days (a microcycle), the typical length of a swap meet. Thus the length of the observations for trading is dictated by however long children determine they want to engage in the activity.

**Interviews**

Children were interviewed, individually, immediately after the observation. Interviews were semi-structured falling between structured interviews and unstructured interviews. Structured interviews have questions that have been formulated ahead of time with respondents answering within a structured framework and definition of the problem whereas unstructured interviews have a non-standardized format where the problem of interest is expected to arise from the respondent’s reaction to a broad issue (Lincoln and Guba 1985). Completely unstructured questions would have been difficult for children to respond to. Therefore, a general outline of questions (see Appendix B) was used with spontaneous follow-up question that were based on children’s action during the observation and children’s responses to structured questions. Observed events of interest were brought up during the subsequent interview to gain an understanding of underlying motivations for making or rejecting an actual trade that occurred during the observation as well as what they like and value about the objects obtained through the trade.
Questions were asked with the understanding that children will have a varying ability to convey this information verbally.

Semi-structured interviews with one of the children’s parents were also held. Children, particularly young children, often have difficulty expressing themselves or remembering past events. Parents also may have valuable contextual information about their child regarding their trading history and their consumer behavior. Additionally, parents may have insight into their child’s motivations and what they value about the objects being traded and the trading process itself. The extent of parent’s involvement will also be assessed as it is a premise of this study that children’s trading is a consumer behavior that occurs largely unmediated by adults. Asking parents their level of involvement in their children’s trading allowed for the assessment of whether this is an accurate assumption. Interviews with parents also provided additional information about the social context within which the child lives (see Appendix B for interview guides)

The Sample

The study sought to sample from children who were known to engage in trading. But it also deliberately sampled children along two factors, age and gender.

Age as Factor. Study One sampled by age based on John’s stages of consumer socialization (1999). Despite the problems that have been associated with work based on Piaget’s cognitive development stages (Siegler 1998; Moses and Baldwin 2005), age differences unquestionably do exist. Sampling on the framework will allow the comparison of these results with what has been done in the field. Therefore, this study will sample in two age groups, children ages five to seven who are kindergartener through
2nd grade, and children ages eight to eleven who are in 3rd through 5th grade in an attempt to have adequate representation from both age groups. While children trade with other children who might not be the same age, as children often play in mixed age groups, an attempt was made to arrange for groups to be homogeneous in age category, but as is often the case with field work, the kids who showed up were the ones observed. Two of the nine groups were with children from both age categories. Overall, 15 children ages 5 to 7 and 16 children ages 8 to 11 participated in the study.

**Gender as Factor.** Gender was also used as a sampling factor as groups were kept gender homogeneous as gender differences that have been demonstrated in other aspects of children’s play may also be seen here. The play of girls and boys as well as their choice of toys has been shown to be qualitatively different. Boys spend more time outdoors in active, physical play than girls (Cherney and London 2006; Harper and Sanders 1975) and choose to play with primarily masculine toys while girls choose feminine or neutral toys (Martin et al. 1995). The way boys and girls play and the games they play have also been shown to differ with boys’ play and games demonstrating more complexity than girls (Lever 1978).

These differences are recognized by those who produce the products that children trade as seen by the dominance of male-focused trading card games. Anecdotally, the single good, Silly Bandz, that girls seem to trade are also traded by boys. But there are a number of trade-focused products whose target market is boys, even though there may be some girls who also like them. Therefore, not only are there differences between how
girls and boys play together but the availability of items designed to be traded differ greatly for girls and boys. Overall, nine girls and 22 boys participated in the study.

**Snowball Sampling.** The snowball sampling technique (Goodman 1961; Heckathorn 1997) was used where parents of children who were known to engage in trading activity were approached. Then during the parent interview process, parents were asked to refer other children known to them to trade to the study. Pragmatically, the snowball sampling technique was the most viable method for gaining access to children. “[G]etting in and gaining the acceptance of the people being studied.” (p.33, Lofland et al. 2006) can be problematic in doing exploratory field work. As children are a protected population who must be accessed through parents, referrals from other parents was essential to being able to conduct this study. In addition, the data collection setting of hosting a play date and the subsequent interviews with the children and a parent was a significant time commitment on the part of parents creating another barrier. Snowball sampling allowed for access to the sample of interest that would have been difficult to obtain in any other way. However, there are problems with sampling in this way. Ideally, snowball sampling should be initiated with a random sample (Goodman 1961) which was not the case in this research or in most cases where this sampling technique is used (Heckathorn 1997). In this case, the sampling began with parents who were known to have children who traded.

Overall, a total of 31 children participated in the study, 28 in the observations and 29 in interviews. Two of the children who participated in the observation were not interviewed, my son (who was invited to one of the trading observations) and another boy
who did not bring goods to trade and disappeared into the neighborhood to play before he could be interviewed. Three additional girls who were in the 8 to 11 age bracket were interviewed as it was not possible to find a group of older girls who still traded. 18 parents from 17 families were interviewed for the study as well. Two children, brothers, were from a divorced family and lived half time at each household. Subsequently, both parents were interviewed, but this was the only family in which both parents were interviewed. The parent interviewed was the mother in all families except for the divorced couple previously mentioned.

Because of the sampling methodology, the children sampled were very homogeneous in terms of social class and race. The majority of the participants were Caucasian with only one Latino and one Asian child. The snowball sampling technique primarily sampled in two small Midwestern municipalities. The first was a fairly affluent (median household income: $117,361) community with just over 22,000 residents of whom 94.3% are white (U.S. Census Bureau 2010). The second community was considerably less well off (median household income: $26,923) community with just under 29,000 residents of whom 83% are white (U.S. Census Bureau 2010). All of the children were from middle to upper middle class households with at least one parent who was college educated. This homogeneity limits the ability to generalize findings.

Sampling only middle to upper middle class children is not inherently a problem for the study. An assumption made about trading behavior among children is that families must have enough discretionary income to be able to spend on tradable goods. While this does not preclude low-income children from trading items, having less income may place
constraints on their trading behavior that might alter the design of the study. For example, low-income children may barter services in exchange for goods if they do not have reciprocal goods to trade. While this provides a valuable context in which to study the valuation of a good and the negotiation and bargaining process, it is difficult to arrange for this to occur in order to observe the event. Therefore, this study is limited in its ability to look at variations in this behavior both by social class and by limiting the behavior studied to be good for good trading.

In addition, the goal for Study One is not to gain an understanding of all children who trade but to be able to develop themes and theoretical ideas about the underlying processes that children use to determine value, make decisions based on this valuation and bargain and negotiate with each other. The nature of the study is limited in its ability to make generalizations from the findings. This study only makes statements about the children in the study with some conjecture as to their applicability to other similar children. Future studies should look at race and social class to determine if these factors moderate these processes as well as broaden its geographic focus. In addition, follow-up studies must be created either through replication or through other methodologies to confirm findings.

*The Data*

Overall, nine trading groups were conducted with 28 children, ages five to 11, participating. Observations lasted for as long as the children wished to continue trading and lasted anywhere from just less than 13 minutes to an hour for a total of almost five hours of observation. See Table 1 for full descriptions of group compositions. Field notes
were taken during the observation as well as immediately afterwards for a total of 26 typed pages of handwritten field notes. Observations were videotaped and transcribed for 140 pages of transcription data. 29 children were interviewed for approximately seven hours of interview time. Two children were not interviewed from the observation but three children, a group of older girls, were additionally interviewed as it was not possible to observe older girls trading. It was intended to observe both girls and boys in trading but given the snowball sampling method, a trading observation for girls, ages 8 to 11, was unable to be held. Those contacted were no longer actively trading. These three girls were interviewed in a group in order to capture retrospective perceptions of past trading activity. 18 parents were interviewed from 17 families for almost 11.5 hours of interview time. Interviews were transcribed for 278 pages of data. Overall the data set is comprised of over 443 pages of field notes and transcripts with over 188,000 words.

Table 1. Group Observation Composition and Data

<table>
<thead>
<tr>
<th>Group</th>
<th>Gender</th>
<th>Grades (Ages)</th>
<th>Grp Size</th>
<th>Length of Observation hr:min:sec</th>
<th># of Exchange Attempts</th>
<th>Good Traded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grp A</td>
<td>Boys</td>
<td>3rd Grade(Ages 8,8,8,9)</td>
<td>4</td>
<td>0:49:05</td>
<td>66</td>
<td>Pokémon</td>
</tr>
<tr>
<td>Grp B</td>
<td>Boys</td>
<td>2nd Grade (Ages 7,8,8,8)</td>
<td>4</td>
<td>0:20:50</td>
<td>39</td>
<td>Pokémon &amp; Bouncy Balls</td>
</tr>
<tr>
<td>Grp C</td>
<td>Girls</td>
<td>1st and 2nd (Ages 7,7,7,7)</td>
<td>4</td>
<td>0:39:40</td>
<td>136</td>
<td>Silly Bandz</td>
</tr>
<tr>
<td>Grp D</td>
<td>Boys</td>
<td>K and 1st (Ages 6,7)</td>
<td>2</td>
<td>0:15:10</td>
<td>25</td>
<td>Silly Bandz</td>
</tr>
<tr>
<td>Grp E</td>
<td>Boys</td>
<td>3rd and 5th (Ages 8,8,10)</td>
<td>3</td>
<td>0:37:20</td>
<td>24</td>
<td>Pokémon</td>
</tr>
<tr>
<td>Grp F</td>
<td>Boys</td>
<td>1st, 3rd, &amp; 5th (Ages 7,8,11)</td>
<td>3</td>
<td>0:34:55</td>
<td>68</td>
<td>Pokémon</td>
</tr>
<tr>
<td>Grp G</td>
<td>Girls</td>
<td>K and K (Ages 6,6 )</td>
<td>2</td>
<td>0:12:50</td>
<td>23</td>
<td>Silly Bandz &amp; Squishies</td>
</tr>
<tr>
<td>Grp H</td>
<td>Boys</td>
<td>K, 1st, 2nd and 4th (Ages 5,7,7,9)</td>
<td>4</td>
<td>1:00:58</td>
<td>37</td>
<td>Pokémon</td>
</tr>
<tr>
<td>Grp I</td>
<td>Boys</td>
<td>K and 1st (ages 6,7)</td>
<td>2</td>
<td>0:26:20</td>
<td>25</td>
<td>Pokémon</td>
</tr>
</tbody>
</table>
In conducting an interpretive, qualitative inquiry, sufficient time in a context is necessary to develop an understanding of a phenomenon (Wallendorf and Belk 1989). That is, were nine group observations adequate to be able to understand the various aspects or themes that are embedded within that context? In assessing the adequacy of this data collection, the length of the cycle over which the phenomenon of trading manifested should be considered (Wallendorf and Belk 1989). In this data collection, 443 exchange attempts were observed with a low of 23 exchange attempts in a group and a high of 136 in another. An exchange attempt was classified by identifying a child’s initiation of a trade either by offering his or her own object up for trade or requesting another’s object. An exchange attempt was carried through when the initial object was no longer a part of the transaction and considered terminated by either 1) the object exchanged hands or 2) the object was no longer under consideration between two parties either through rejection of the object or non-engagement. 37% of exchange attempts resulted in a successful exchange of goods. Thus a fair number of exchanges, both successful and unsuccessful, were captured in the data collection.

A second criterion for determining the adequacy of your data collection in interpretive work is achieving redundancy in the data where further observations and/or interviews offer no new insights (Belk, Sherry and Wallendorf 1988). By and large, redundancy was perceived in the general themes found in each group. Given the number of exchange attempts and the redundancy in the data as well as time and monetary constraints, the data collected was deemed adequate for this initial investigation into the phenomenon of children’s trading.
**Analysis**

Grounded theory methodology (Glasser and Strauss 1967) was the basis for analyzing the data. Grounded theory is accomplished by the systematic and intensive analysis of data, sentence by sentence, or phrase by phrase, using constant comparison of the data that has been extensively collected and coded in order to produce a theory that is grounded in the data (Strauss 1987). The analysis process begins with the transcription process. Digitally captured audio and video were transcribed word for word. Observations were transcribed non-linearly in terms of time in order to capture an entire exchange situation in sequence. In groups that were larger than two, sometimes, separate exchange situation occurred simultaneously. Therefore, observations were transcribed by exchange episodes carrying a transaction through from beginning to the end. Overlapping conversations were indicated using a time stamp. Transcribing chronologically did not make sense for analysis because different conversations occurred simultaneously making it confusing to understand the transcript.

As transcription occurs, memoing—sporadic written briefings regarding one’s emerging interpretations of the data or sense of the project—were written. In memos, thoughts and ideas regarding the analysis process were recorded as emerging themes and properties occurred (Lofland et al. 2006). Coding proceeded as an iterative process (Strauss 1987). First, the data went through an initial process of open coding to develop concepts that fit the data. Next a process of axial coding occurred analyzing one category of coding at a time to be able to develop more abstract and conceptual connections between and among the codes. As themes and theoretical constructs emerged from the
data, a process of selective coding then was completed where larger themes became key codes. Conditions, consequences and other factors that related to the key code or themes were then sought (Corbin and Strauss 1990; Strauss 1987). This process continues until theoretical saturation occurs and no new insights or relationships are seen (Flick 2009). As new themes emerged, the data was recoded and themes reformulated until no new findings emerged.

Another structure for conducting the analysis of children’s trading followed Turner’s (1997) “processual symbolic analysis.” The approach provides a framework for interpreting this behavior at three levels of meaning: exegetic, operational and positional. Exegetic meanings represent the emic perspective relating meaning from the native’s point of view (Geertz 1976). Exegetic data are derived from the children’s direct statements either in response to questions from the researcher or as a part of the trading activity observations. Operational meanings are derived from a third party frame of reference by a third party as he or she observes the actions and statements and relates the way they are used, the contexts of their occurrence and the composition of the groups involved (Katriel 1987). In operational analysis, meaning is derived from what people do and say as part of their ongoing social activities rather than on what they say as a reflection of themselves. Operational data and analysis is derived from the non-participant observations of the trading and parent interviews. Positional meanings examine the relationship of the symbols and meanings in the focal behavior to other symbols and meanings found in the culture (Katriel 1987). As this study was conducted within a rather homogeneous setting, interpretation at this level is best left to future study.
when study of children’s trading in other cultures can be examined and compared with those of the current study.

Data was also assessed by case (Flick 2009), that is to say, the analysis will occur around each child (see Figure 4). Each data set for each group observed individually was analyzed at the group level for coding to determine themes and patterns and then these were compared to patterns and themes found in the other group data for similarities and differences (Flick 2009). In this way the data triangulates on the phenomenon of children’s trading.

**Study One Findings**

Findings indicate that children’s trading has distinct temporal stages. There are events that occur prior to the enactment of trading that affect both whether or not a child engages in trading as well as how they go about the process of trading. These antecedents can be thought of as aspects of children’s life experience that have occurred prior to the engagement in a trading episode that may influence the enactment of trading. Consistent with the framework proposed by de la Ville (2005), children’s trading as a consumption practice is framed/influenced within the normative demands of the family, their peers and other socio-cultural conditions. These demands influence what, who, when, where and how children trade.

Next the trading activity itself, the goods involved and the factors that alter its enactment among children are examined. Observations demonstrate that this process of trading has distinct temporal stages as well with some outcome, positive or negative, at the end. This trading process then begins again, playing out over and over again until
children tire of the activity. Through this process there occurs learning and social interaction that have lasting effects on the development of the child that serve to influence and alter both whether or not a child engages in trading as well as how they go about the process of trading the next time. In other words, this process is cyclical. The outcomes from trading serve as antecedents to the next episode of trading, if there is one.

A detailed picture of the processes children engage in during trading emerges. Several processes co-occur within and among the children to include valuation, negotiation, persuasion, socialization and group dynamics. Each is discussed in its own right as if each process were distinct from the others when in fact these processes are enmeshed within each other during the process of trading. The outcomes of trading occur at the end of the process most of which are temporally seen in the immediate aftermath of a trading exchange during the observations. But it can be inferred from parent interviews that some of these outcomes last beyond the trading activity.

**Antecedents of Trading**

The act of children’s trading does not exist in a vacuum. Children come into the trading situation with attitudes and knowledge about 1) the objects that are traded, 2) the norms and behaviors involved in the activity of trading, and 3) the other children with whom they interact while trading. Findings confirm the integral role parents and peers play in consumer socialization and serve to answer the first part of research question 1. How do parents, peers and other socio-cultural factors influence children’s engagement in trading? Elaboration of the role these factors play in very young children’s acquisition behavior has not been discussed in previous literature. The role of siblings also seems to
be a critical determinant of trading behavior. The influence of socio-cultural institutions and the media are also explicitly discussed by parents. In addition to socialization agents influence on children and their enactment of trading, other antecedent factors emerged from the data. Aspects of each specific child also influences the enactment of this behavior to include their relationship with the objects traded, having a place with critical mass, their personality and their motivations for trading. Each antecedent is discussed in turn in bolded and italicized headings. Then subthemes within these antecedents are italicized as headings. Additional themes found within the subthemes are then italicized and underlined within the body of the text.

**Parents.** The role of parents in their children’s socialization and learning is undisputed as critically important. But what role do parents play in their children’s enactment of trading? This dissertation contends that children engage in trading to get around the constraints that are placed on them through their parent’s control of their participation in the marketplace making children’s trading an activity largely unmediated by parents. In other words, parents are not generally directly involved in their children’s trading behavior. To examine this contention, parental involvement is assessed.

*Evidence of trading as unmediated by parents.* Interviews with the parents of the children who participated in the trading exchange support this contention. Indeed, some parents are so uninvolved in their children’s trading activity as to be completely unaware of its occurrence although parental awareness spanned a continuum of awareness generally with a few parents having a detailed account of their children’s trading behavior. Parental awareness, however, does not equate involvement. Parents’ awareness
of what happens with other children is spotty because children often enact this behavior in places where parents are not present. Whether or not parents are aware of the activity is a function of both their level of monitoring for the behavior as well as the amount of communication the children have with their parents about the behavior. The following are excerpts from interviews with parents whose children reported regular trading in their respective interviews.

*INT*: So you've told me Chase doesn't trade a lot. That you're aware of?
*Sandy*: Not that I'm aware of. First, with the silly bandz. Him and Heather [his sister] would trade them, I think, a little bit.
*INT*: But to your knowledge he doesn't really trade?
*Sandy*: Last year when he was in kindergarten he would bring them [his Pokémon cards] on the bus. And I don't know what he did with them beyond that. He never talked about it. It wasn't that important. Just to have them was important. Not necessarily to trade. But he could have traded. (Parent)

*Joan*: I think he does trade at school. But I kind of don't pay too much attention. … I don’t encourage it. (Parent)

*Parental attitudes towards trading*. This last quote also illustrates how a parent’s attitude toward trading may influence their child’s engagement in the activity. Joan does not explicitly approve of trading behavior which may explain why some children hide their trading from their parents although sometimes parents discover the illicit behavior.

*Joan*: I think he takes things into school. Occasionally I've found things in his backpack but I don't know where they came from. So I think he does it surreptitiously. I think that's the dynamic. That it’s not this open, you know, thing, …and he does it at school. (Parent)

---

1 INT designates the researcher’s role in the conversation as the interviewer. The interviewer’s contribution to the conversation is presented because sometimes it is easier to understand what the parents and children discuss by providing the context in which they are speaking.

2 All names have been changed to protect the confidentiality of the children and parents involved in the study.
Steve: Yeah for lunch lately, he doesn't tell. I have to investigate it. I try to give healthy. Kathryn is more strict about that. She's vegetarian. So she tries to give them vegetarian lunches. We try to give them more healthy stuff. And you know healthy is usually not that tasty. Other food tastes better. So he usually trades that. I try to tell him you really need to eat your lunch. So he doesn't tell unless I see something and ask. (Parent)

But some parents do not have a negative attitude toward trading.

Gail: I'm glad they do it. It's pretty interesting to watch them.

Alice: But I think it's good for him and his friends to do that kind of thing. It's fun for them. You know. I think it's good for the most part.

Direct parental involvement. While generally unmediated by parents, some parents report varying degrees of involvement with and influence over the behavior of trading. Direct involvement is reported under several different scenarios. In trading, conflict can occur, particularly between siblings. If such conflict occurs in the presence of a parent, the parent may intervene by his or her own choosing or by the bidding of one of the child **to mediate the conflict**. Even without conflict, the parent may covertly observe the transaction **to ensure parity and fairness of the exchange** and actively intervene especially if an older sibling/child takes advantage of their younger counterpart.

Katelyn: Yeah, like it or not. You know, I mean sometimes it can end in disagreements that I have to mediate. You know. Or help with... But I've watched it from a distance too mostly to see that it's going kind of fairly. Especially watching with Maddy and Katelyn because I don't want Maddy taking 5 of Katelyn's. You know what I mean? (Parent)

Other circumstances where a parent may get involved usually occur after the trading has taken place. Parents intervene **when more expensive objects are traded**.

During one trading observation, one of the children, Stephen, attempted to trade a binder with trading card storage sheets in exchange for John’s Pokémon tin. As the other child
was putting his Pokémon cards in the binder, Stephen’s mother interceded and told him he was not allowed to trade binders as binders were too expensive. Similarly, Jamie describes her intervention with Blair’s trading below.

*Jamie:* Yes, she was trading with this older girl. And I found that I didn't like the trades. So I was telling her you need to get your stuff back and you need to give her her stuff back….So I didn't like the trades.
*Int:* What were they trading?
*Jamie:* Like she would come home with this ratty stuffed animal and Blair would give her like three of the Zoobels away. Zoobels are expensive. And she would get like this little ratty stuffed animal. And I was like okay, I don't want that even in my house.

Parents may also provide explicit guidance and training for trading. During some trading observations, parental instructions were often invoked. For example, when Ian balked at the condition of tradebacks when Darren wanted to place on a trade, Darren invoked his mother by saying “No dude. There's tradebacks. My mom said if I have to trade I have to do tradebacks.” To which Ian replied,” My mom says if I trade, no tradebacks.” Parents also describe how they provide guidance to their child for trading.

*Vanessa:* Cause when he first started, oh, it was bad. He would go and he would come home and he would like have two cards left or something. And I would be like what did you do with your stuff? "Well, so and so really wanted this one and he didn't have one that I liked so I just said he could have it." And I was like "Oh no, that's not what you do." That's not how you do it. So I started off in the beginning going you don't give away. That's not how it works in trading. If he wants something of yours, you've got to pick something of theirs. And then you swap. And so, we sort of had to tell him that in the beginning because he did lose a whole chunk of cards. (Parent)

The last circumstance where parents report becoming directly involved in trading occurs when their child experiences ‘trader’s regret’. After the trading has concluded, some children regret the choices they made in the trading scenario and feel a sense of loss
or longing for the object traded away which may cause feelings of sadness or disappointment. Some parents intercede to restore the traded object to their child, especially when the incident occurs between siblings. The majority of parents do not act to restore the object. In this sense, many parents see the regret as an important life lesson and use it as a teachable moment to provide explicit guidance for trading. But circumstances do exist, as Jane below describes, where she does intervene.

*Jane:* I see it as an opportunity for him to learn lessons. If he makes a bad trade, if he spends his own money on something then trades it away, I see it as letting him handle his own business. Unless there’s out and out tears or another parent gets involved, I generally stay out of it. (Parent)

*Parents and tradable objects.* Parents may also influence their children’s trading behavior in terms of their philosophy to material goods in general as well as more specifically, to the goods that are traded. One obvious antecedent to trading is that children must own goods that they can trade. Parents are often the ones responsible for providing the goods they use in trade, although as will be discussed, children are able to obtain goods for trade in a number of different ways. Parents may also transfer their own interest in specific goods which influence the child’s interest in the object.

*Angie:* Chase and Oscar’s dad was into it too. I mean he would buy entire unopened boxes of Magic cards. You know all in their individual foil packs for like $200 he would come home with this big box and he and Chase would just sit there and spend the next three hours opening them all. Going "Ooooh what did you get?" "I got this" And then they would sit down and play Magic. (Parent)

The general environment that parents create for their children may also influence the relationship children have with the objects. Pokémon, for example, can be played in a
game that can be quite complex. Many of the children who participated in this study did not play the game. However, two children played the game extensively with each other and other children. Their mother stated that she was not surprised that her children would be so into the game because the playing of games is a common and frequently occurring activity in which they engage as a family. A parent may also explicitly discuss trading of these treasured possessions influencing the child’s willingness to trade the objects. By influencing how they relate to an object, parents may directly or indirectly influence a child’s motivation, or lack thereof, to trade and the goals of their trading.

Vanessa: Yeah, football. We keep a little bit more tight uh, knit over um… my husband is really big into the football, the cards. So he gets a new pack each year for Christmas.
Int: Your husband does or Garrett?
Vanessa: No Garrett does. My husband gets him brand new for the whole year which has all the rookie cards and blah blah blah in it. Those are sort of more sacred.
Vanessa: Yeah, he gets them out. And puts all the teams together and he does that. But those are not those are not trade. I don't know if he would trade them. But it's been pretty much told to him we don't trade these ones. And he's fine with it. He's never asked about it. He chooses to look at them and put them in their little category and then he puts them back in their little boxes. (Parent)

siblings. Similarly, siblings also serve to socialize children in both the initiation of and ongoing relationships to objects and trading. Most often, older siblings influenced the younger ones. But sometimes, it was the reverse. In any case, parents report that siblings were often the ones who were responsible for bringing the good and an accompanying interest in it into the house.

Angie: I think having all of that around and knowing that his older brother was interested in it probably kind of pointed him in that direction. (Parent)
Gail: He would bring them into the house, ask for them. You know, as gifts and stuff like that and then the other kids would just kind of follow suit. (Parent)

Siblings also were often responsible for initiating their siblings in trading either through role modeling, where the younger sibling observes the older one interacting with his or her peers, or through the existence of a family norm for siblings to trade with each other.

INT: Now did Dillon trade stuff?
Jackie: Yeah cause Dillon's the one who got Garland into it. (Parent)

INT: and you say they trade all the time with each other?

Gail: Everything. Right.
INT: Like daily? Like frequently?
Gail: Yeah, like when they get things, if I were to take all three of them to the store and buy each of them a different box of candy, in the car on the way home they would be trading what for what. And I don't know what came first. I don't know if the toy trading kind of started that. I mean, obviously Halloween. But yeah, they trade a lot. Like you know, they like the trading. And it's usually very, I rarely ever hear fights about it. I think its cause you know they trade candy and I think that's to get more than what you just got. So if they each get three different things, they'll want to trade so they can try what the other ones have…And as far as I can tell from my driver's seat it's obnoxious not to trade. Like they get mad at you if you won't. If you won't allow them to trade with you so that they can try what you have, it like ruins the fun. And they get mad. But usually you do, because everyone wants to try. (Parent)

Peers. Similarly to siblings, peers were often the ones responsible for initiating children’s interest in the good as well as their trading behavior. In addition to parents purchasing the objects, one way children and parents reported first obtaining commonly traded goods was as gifts from friends.

Chase: so I went to school one day and I saw people wearing silly bandz. And I wondered if I should start wearing silly bandz. And they started giving me silly bandz for free because I told them I didn't have any. (age 6)
Steve: In Kindergarten, Frank had a friend, Jack was his name, friend on the hockey team. He had a lot of Pokémon cards. And he gave Frank some. Maybe on more than one occasion... He's like gosh, he really liked them but he didn't know what to do with them. And uh he got his involvement from Jack. Maybe from others. (Parent)

Initiation into trading behavior with peers illustrates a contextual antecedent to trading behavior, the need to have a peer group with whom to trade. In order for trading behavior to proliferate, children must have a peer group who share an interest with them in the traded good. Trading seems to be able to occur anywhere, anytime between children as long as each child has a good of mutual interest to the other. But when trading goods designed to be traded, children must have peers who share interest in same goods and have goods of mutual value. One mother describes below how her son’s interest in the good and in trading varies depending on whom he plays. Peers also play an active socialization role during the trading process which will be subsequently discussed.

Vanessa: I can tell the difference between his friends because he's got a group of jocky sports friends and they are not into Pokémon... He plays on travel baseball and he plays football...Now they do not partake in the Pokémon at all. And when they come over they're not even brought out. Garrett doesn't even seem to be. .. I don't know if he just ... I don't know. I don't see them. They're not interested in them. It's not happening… And then he's got the group, there's a few boys from school and the couple there from the neighborhood. And you see a distinct difference when they are over. They're hanging out. It's you know, they go get their stuff out and they're looking and doing this and laying them all out and that kind of stuff. So he's got a distinct line between his friends with who he pulls out his Pokémon with and who he doesn’t. (Parent)

The Existing Relationship between the Child and Trading Partners. Prior to the trading activity, children may or may not have an existing relationship with the children with whom they trade. The nature of this relationship which is based on their previous
experiences with each other impacts how children trade with each. To illustrate how the previous existing relationship serves as an antecedent that may affect how children trade, consider the following example. In this group, a triad with two brothers, one of the brothers, Frank, was unable to successfully trade with Tom. He only was able to trade with his brother, George, and even then only once. Later, during interviews with the mothers of both Frank and Tom, existing tension in their relationship was an antecedent condition of their trading. Kathryn, Frank’ mother, and Joan, Tom’s mother, report the following:

*Kathryn:* What's interesting though Frank, both Frank' friends, Oscar and Tom, and they trade with Oscar a lot are at least they play more with George than Frank when it’s the three of them. For a while, Tom and George were more friends than Frank and Christian. Because Tom and Frank have a love hate relationship. So there's always some type of tension there. I don't know about on Tom's side but there is on Frank' side because Tom is like the golden boy and Frank is the jealous one. You know, so it's hard for Frank to see that, whereas George not being in the same class doesn't have that same dynamic. (Parent)

*Joanna:* Actually I don't know if you could tell. Confidentially he has a lot of trouble with those boys. Like personality wise and playmate wise. I don't encourage. They live down the block half the time and I've been trying to...we used to play with them a lot more. Tom's been having trouble with Frank, the younger one, so they play soccer together and they're after school together and last year they were in the same class. And he complained a lot about fighting with Frank. (Parent)

Given the nature of their preceding relationship, it is unsurprising that the two boys did not connect in an exchange.

The children participating in this study also may or may not have *previous experience trading with each other* which may affect the nature of the trading process. In another group with four boys, all unrelated, three of the boys shared an extensive trading experience history. The fourth boy, Darren, however, had not traded with any of the boys
and only had a pre-existing relationship with one of the boys. Darren had difficulty trading with the other three boys and only successfully traded with two of the boys, one of whom was his friend. At one point, Darren wants to leave and go home to which the mother who organized the play date tells him he is not able to go home for a while.

Darren responds:

*Darren:* I know. But my… but no one wants to trade with me.
*Cole:* Darren. What do you have that you want to trade?
*Darren:* ummm (age 8)
*Shane:* Well you're not exactly offering your level x's (age 8)
*Cole:* Well, we all trade levels x's. That's tradition. (age 9)

Darren’s difficulty trading can be accounted for, in part, by his lack of trading experience with these particular boys and a lack of understanding of their normative expectations for trading.

*Socio-Cultural Context.* Outside of the immediate influences in a child’s life from parents, siblings and peers, other socio-cultural influences are reported. Specifically, other institutions and organizations can influence children’s interest in the goods as well as their enactment of trading. For example, Pokémon encourages initial and ongoing interest in its products through its accompanying media presence through a television show and periodic releases of movies. Children interested in these products watch these shows and movies and learn the product and how to use them. Nintendo also continually refreshes its product line through the creation of brand extensions for Pokémon which involves the release of a new video game and new set of Pokémon cards which leads to more trading as one mother describes below.

*INT:* How often do you think they trade?
**Kathryn:** George and Frank? Well they talk about it at least once a week. At least once a week. Probably two or three times. I don't know that they trade all of the time. But they talk about it all the time. I guess there's two aspects of it. There's the actual transaction where they actually exchange vs. trading cause trading is discussing so trading in the larger sense is a continuous thing. Trading as an actual exchange happening that is more rare. Just because they've already done a lot of trading with each other’s decks. So there's not as much new stuff. Only when they have new cards an influx of new cards. (Parent)

Schools and their associated personnel like teachers and bus drivers are also influential primarily by serving as either a facilitator or as a barrier either by allowing or expressly forbidding the objects and trading. Remarkably, despite being explicitly forbidden, children report continuing to engage in trade in those locations which leads to another necessary antecedent to trading, having a place to trade.

**A Place with Critical Mass.** Children report trading in a number of different places with the bus as the most frequently reported setting for trading with their home the second most common place. Other locations mentioned include school, their friends’ homes, summer camp, after school programs, and generally outside in their neighborhood. Having a place to trade essentially encompasses several factors. First, these locations contain a concentration of children with whom they can trade. Several parents described that their children did not trade until they moved into their current neighborhood where a group of children existed who had mutual interest in the objects as well as an inventory of objects to trade. These factors converge to create a critical mass of kids engaged with the objects and engaged in trading. As noted above, factors of an organization like a school may serve to facilitate or block trading activity. For example, one particular elementary school in one of the towns where data was collected was called
a “hotbed” of trading as its environment facilitated the activity among children who attended.

**Traded Goods.** Having goods to trade is another perhaps obvious antecedent of trading, although children have traded services for desired goods when they have no goods of their own to use as currency. In this study, objects specifically designed to be traded was the focus of the trading activity. As was previously discussed, marketers may use a good’s trade-ability as a marketing tactic to garner children’s interest. However, as is probably close to reality, even though children were invited to the play date with a request to bring a specific good to trade (i.e., Pokémon cards or silly bandz) some of the children had other ideas.

One boy attended the Pokémon trading observation without any cards because he had just sold his collection in his family’s garage sale. Instead, he brought a number of bouncy balls to trade. Despite his interest in Pokémon cards having waned as evidenced by his willingness to sell his card collection, he traded bouncy balls for Pokémon cards. One young girl arrived at a silly bandz trading group with squishies as well as silly bandz.

*Almost anything can be traded.* Children and parents report that they trade a number of different goods reporting toys from erasers to video games, trading cards (e.g., baseball, football, Yu-g-oh, Webkinz, etc.), food (i.e., Halloween candy and lunch items) and other things like books, pins at Disney or even naturally found items like rocks and seashells. In fact, one repeatedly echoed sentiment from parents was that their children would trade almost anything.
**Gail:** They trade just about anything. If you came over with like 8 different colored pieces of gum and pack of M&M's they would trade. (Parent)

**Sally:** hmmm, anybody that has um, interesting stuff. (age 7)

**Steve:** But uh, anything that they can carry and play with…So anything that another kid would want, he might try to trade. (Parent)

**Routes to ownership.** This dissertation’s intent is to focus on goods that children have that are designed to be traded. So how did children obtain these goods? Counter intuitively, the most commonly reported method of obtaining these kinds of goods was not through purchase, but from other children as informal gifts. Other children, often older peers or siblings who had a large collection of these goods, would give a few items of the good to their younger, unendowed, counterparts thus initiating the child’s interest in the good igniting their desire to acquire them through in other ways. Children also received goods by purchasing them using their own money or as gifts from parents and other relatives. Other ways in which children first obtained these goods was through trading, in McDonald’s Happy Meals, and just finding them.

**Children’s relationship with objects.** Another important antecedent aspect of the object that influenced children’s enactment of trading is the child’s relationship with the objects involved. In other words, how children trade their objects is very much influenced by their interactions with and attachment to these objects prior to the trading activity. **How they obtained the good** may account for this relationship with some children refusing to trade because they obtained the object for their birthday or from the tooth fairy. Attachment may also be formed because of **parental relation to the goods** as was previously mentioned. More than once, mothers described how fathers shared love for
specific kinds of objects with their children (e.g., how Chase and his father would spend hours putting together Legos).

Some children also develop a greater attachment to their goods in general than other children. In group A, Darren has great difficulty trading with the three other boys. After a long protracted negotiation, Ian in response to Darren’s numerous objections says, “Oh my gosh, see Cole and Shane would have done this.” Darren responds, “I’m outside. I know. Because I really like my cards.” Darren describes developing a very strong attachment to his Pokémon cards in his interview for a variety of reason. For example, some cards were obtained when he purchased them in a tin. Cards that come in a collector tin are more expensive than smaller booster pack and he described having to save his allowance for some time before accumulating enough money to purchase the tin.

Children also use the objects outside of the trading interaction in different ways. In group E, the children place value on different aspects of the cards because two of them play the game regularly shifting what they consider valuable in a card as well as their attachment to the cards. For example, Frank places cards he has in “his deck” as off limits which is a deck he created for playing Pokémon cards in its game. In fact, their attachment to their cards is so great, that they convince their father that prior to attending the trading play date that they need to purchase new cards in order to have cards they are willing to trade. Because these two boys engage in the game designed to be played with these cards, they value certain attributes of the good more highly than other children who do not engage in game play.
In this way, the *characteristics of the goods themselves* and *the value that children place on these attributes* also affects the nature of the trading. Pokémon cards are rich in a number of different attributes having countless kinds of creatures of different types and evolutions with each creature having countless different versions or pictures. But beyond the creatures, they incorporate variety in a multitude of ways having different attacks, HP, and holographic qualities or “shiny” as the kids call it. Nintendo also embeds scarcity in their cards creating rare, uncommon and common cards such that one can accumulate multiples of certain cards and never ever find certain rare cards. Nintendo also has created an entire multi-media world to support Pokémon which started with the video games and now includes movies and books.

Silly bandz, on the other hand, are relatively simple creations as silicone bands that hold a shape. The shape they can take can be infinite. They also come in a variety of colors which can take on other qualities such as tye-dye and glow in the dark. Some even come scented. Even with this amount of variety, compared to Pokémon cards, silly bandz lack complexity and might even be considered attribute impoverished. The attribute of rarity is also not instantiated. In fact, makers of silly bandz do quite the opposite. When you buy a package of silly bandz, you receive two or three of each shape; one to keep and one to trade. The simplicity of the object may account for the simpler, more straightforward trading observed in groups trading silly bandz.

**Aspects of the Child.** The last antecedents of the trading process are aspects of the child him/herself. Not all children engage in trade. Several parents who were approached for participation refused on the basis that their child did not trade. It could be that the
child does trade and the parent is simply unaware of it. But the children also tended to be heavily involved in organized sports which left them with little free time. What other characteristics of the child may influence their involvement in trading? Prior to engaging in trade, a child possesses existing competencies and abilities as well as other characteristics that may affect 1) a child’s initial interest in traded goods, 2) whether or not he or she engages in trade and 3) how he or she enacts the behavior.

*Interest in the object.* Some children are very tuned into what is trending in popularity among other children. Their interest in current fads and knowledge of “what’s hot” can initiate interest in the product among other children. For example, Gail describes Leo, her second oldest son among her four boys, who did not participate in the observation,

\[\text{Gail: [Leo] has always been more into trends and toys and what's kind of hot or interesting. He tends to know. He cares a lot more about like, if the other kids are doing something… He would bring them into the house, ask for them. You know as gifts and stuff like that and then the other kids would just kind of follow suit. Then they would want it too. (Parent)}\]

What motivates Leo to care about the latest trend? Based on data from other interviews, children’s interest in these objects is often motivated from a need to fit in, to belong to a group and share a common interest. Then Gail, the boy’s mother describes how the other boys become involved.

\[\text{Gail: And then Milton tends to follow suit with what Leo wants or is into. Then Milton wants some.”}\]

While Milton is not tuned in to what is hot amongst other children, he becomes involved because he emulates his brother’s interest.
Gail: Then Henry kind of gets into it…. He likes to read a lot. So they have these big Pokémon encyclopedias. So Henry's the one who'll study it and memorize it. To the point of every minuscule detail…Like, just encyclopedic type information about stuff like that. So when Leo comes home with the Pokémon stuff and he gets into it and Henry kind of finds his niche in learning about all the different things. And as he learns more about the different kind of hierarchy of the trading or what the value or I guess these Pokémon have different things they can do, different powers or weights or whatever. Henry gets into that. And then shares that with Leo.

Henry gets involved in order to be able to establish expertise. In these different ways, children become interested in commonly traded objects.

**Interest in trading.** Not all children who have an interest in the object are interested in trading. While the children involved in the study did all trade, there is evidence that some children who are interested in traded objects do not trade. One parent describes how her daughter who is older than her son who participated in the study never traded her Pokémon cards, not even with her brother.

**Endowment effect in children.** Examining characteristics of a child that determines his or her willingness to trade was more difficult because the children invited to participate in the study were known to trade. Children who did not trade, refused to participate in the study. But one noted characteristic of a child that affected a child’s ability to trade an object was their level of attachment to their possessions in general. While the relationship a child has with the objects that are subjected to trade has already been described, for some kids, there seemed to be a more inherent tendency to become more attached to their objects overall. Previously Darren’s lack of shared experience in trading with the other boys as a potential explanation for the difficulty he experienced in trading was said to partially account for his difficulty trading. Another contributing factor
may be the strong sense of endowment he possesses. In the trading scenario, Darren almost always placed the stipulation of tradebacks—where either party can demand to undo the trade—on his trades. When I ask Darren about why he does this, he responds:

Darren: I just want to see what it's like to have that card. If it’s a good feeling to have that card; if I didn't like the other cards. Or maybe it’s not so good to have this card and I want to trade it back. (age 8)

Darren seems to possess a strong endowment effect. The endowment effect is defined as the underweighting of the benefits an individual could have received by taking another action or opportunity costs (Thaler 1980). It also describes the inertia that occurs when consumers make choices when goods that they own become more highly valued than goods that are not. While it is not typically discussed as a characteristic of a person, Darren’s strong attachment to objects he owns interfere with his ability to make a trade causing inertia in his ability to trade. In the very last exchange of his group where the other two boys have left to play outside, he takes an extremely long time to reach agreement with Ian and then insists on tradebacks to which Ian reluctantly agrees. In his interview held directly after the observation, when Ian leaves, Darren undoes the trade taking his card back that he had traded away returning Ian’s card to his pile of cards. Despite crying foul because “no one will trade with me,” in the end, after successfully trading an object, he cannot let go of his card. While Darren was the only boy observed to do this, this endowment effect might account for why some children do not trade.

Existing negotiation and persuasion skills. In addition, characteristics of the child affect how he or she actually enacts trading behavior. A child’s previous experience in trading affects how they trade. Most of the children interviewed had been trading since
preschool or kindergarten, but as some of the children were in kindergarten, the amount of experience they had in trading varied greatly. But those who traded for longer periods of time exhibited better negotiation and persuasion skills. Of course, this is also confounded by age as older children had more experience. So a child’s age may affect his ability. Whether due to age or experience, what affects a child’s enactment of trading are the amount of skill he or she has in negotiating and persuading others. One of the oldest children observed, George, a 10-year old boy in the fifth grade, had been trading since preschool and his negotiation and persuasive skills were obvious in the observation. He seemed to be able to convince the other two boys of the value of his cards with ease. His skills were also added by his expertise in Pokémon. In fact, both of the fifth grade boys served as experts in the groups in which they participated with younger children turning to them to explain the objects.

In contrast, some boys had very poor negotiation and persuasive skills, which was particularly noticeable among the younger children. In fact, in many of the groups observed that were made up of exclusively younger children, not much persuasion or negotiation occurred. They simply agreed or disagreed and moved on from there. This was markedly different from some of the groups with older children where sometimes extensive and protracted negotiations occurred. As this is exploratory work, it is difficult to tell if this is because the children lack the skills necessary to engage in this kind of activity or if these children simply are not as invested in the items in order to pursue a course of action to obtain it beyond simply asking to trade.
Marshal, a younger boy who exhibited poor negotiation skills, persisted in his attempts to trade in a group with all older boys. Instead of using persuasive tactics, he simply yelled the other boy’s name over and over again in order to eventually engage the other child, Stephen, in trade. In one exchange, he says Stephen’s name over 30 times with other phrases in an attempt to engage the other child. At one point, with Stephen continuing to be unresponsive he threatens to leave which persuades Stephen to entertain his offers. Stephen looked at the research observer before engaging with Marshal leading to the suspicion that had the observation not been going on, Stephen would have allowed Marshal to leave.

**Personality.** Another characteristic seen among the children that affected how they traded was that of being a people pleaser. Tom for example, seemed to mildly resist trading requests initially, but so wanted to interact with the older George, that he seemingly would eventually give in to George. In this sense, it was a combination of George’s possession of persuasive communication skills, and Tom’s desire to please George that caused Tom to give away his “better” cards. In a different exchange, Gino gives in and agrees to trade after saying no to a trade when Oliver simply challenges his decision by asking why. Parent interviews confirm that these boys tend to be easily persuaded.

*Vanesa:* He's a little bit more I don't want to say, naive. He's just not as…Like if someone says wow I really want that, you know, he's more apt to go okay, well, alright well let's see what I can have of yours. and then I'll give you this. I mean he's not real cut throat. (Parent)

*Joanna:* So they're like he gets along with everybody. You know so he's just that kind of kid….This runs into psychology not just the trading behavior. And he wants to please so he likes doing it. (Parent)
**Motivation to Trade.** The last aspect of the child that is a necessary, but not sufficient, antecedent to trading is the child’s motivation to trade. Examining children’s motivation for trading addresses research question 6. What purpose does trading serve for children that they would choose to create an activity with interdependence between themselves?

**Inventory Management.** While it seems intuitively obvious that children want to acquire goods new to them, findings indicate that the motivation is more complex than simple acquisition. Quite obviously, if children did not want to acquire new things, they would not engage in trade. The following are a sampling of responses to a general question asking what they like about trading.

* Mady: Well it's fun to get new ones. (age 7)

* Sally: Because its fun and you get new silly bandz and stuff. (age 7)

* Carter: Cause I get new cards and I get to find out what they do. (age 8)

* INT: What do you like about trading?

* Henry: Well, I like because if you have better…like you can get better of what you already have.

* INT: Okay, so you can get better cards by trading?

* Henry: Yeah

* INT: Is that what you're looking for better cards?

* Henry: Yeah, I'm looking for. I trying to get every Pokémon card they have. (age 10)

Although acquisition was not as straightforward as just wanting something new but it often had to do with ownership relative to others such as coveting others' possessions, wanting to get something better/cooler than what they have, and trying out someone else's items. Children also wanted variety in their inventory desiring different object and
items that they were collecting, Parents echo the importance of acquiring variety or diversity in their objects/collections. For children, the inventory acquisition can also be used to get around parental constraints. Children’s consumption is constrained by what is made available or permissible to them by their parents. Trading allows them to get around these constraints to obtain items their parents will not provide. Here George describes what he likes about trading.

*George:* Getting something that people have that you want and other people want like Capri Suns for oatmeal crème pies …. [which] I love. They're my favorite snack… But I don't ever get them because my dad thinks they're unhealthy. (age 10)

Trading is not only used to acquire a new good but also to dispose of unwanted ones. 62% of exchange attempts were initiated by children offering a good they owned rather than requesting someone else’s good. Consider the following children’s responses to the question “What do you like about trading?”

*Cole:* Well you get new stuff. And ….sometimes you get to trade something that you don't want (age 8)

*George:* Getting rid of cards you don’t really want. (age 10)

The satisfaction derived from trading is not only in the new but also in getting rid of the old. Thus one major motivation for trading is inventory management, not just acquisition.

*Play.* The purpose of trading also goes beyond the goods themselves. It is clear from the observations that trading is a way to play for the children. The trading activity is interspersed with friendly banter and teasing as well as bouts of silliness in their behavior towards each other. In one group, they “trade battled.” In a trade battle, they play Pokémon
with the winner obtaining the loser’s cards which are negotiated prior to the battle. As goods do not become exchanged, this form of play is not technically as this work has defined it, trading. But playful behavior is embedded throughout the trading as well as interspersed throughout the exchanges. Some groups devolve into outright horseplay tackling each other and disrupting the trading activity with other kinds of play.

_Sociality._ Another significant theme that that emerged regarding children’s motivation to trade which goes beyond the goods is trading’s ability to facilitate peer social interaction. Trading facilitates children’s interactions with each other giving them an activity to engage in together beyond play. This social interaction often seemed more important than the object itself and is echoed in the interview data by both children and parents.

_Angie:_ A lot of it for O depends on what his friends are interested in …. For him …, it’s a social interaction. It's not messing with his cards when nobody else is here. It's …, when other people who are interested in it also, then he's interested in it.” (Parent)

_Gail:_ I mean a lot of, they'll sometimes scour the house looking for things to trade. Stuff that's sitting in the corner and no one's looked at it. But now it’s like all of sudden, the activity is trading and they just round up whatever trinkets they have and the trading….

_INT:_ Commences?

_Gail:_ Commences, yeah! Yeah, it's kind of weird. Cause I'll see them, like Milton, I'll see him running around the house frantically picking things up because he's going to go trade with Oscar. (Parent)

_Cole:_ I think it’s fun because um like I think it’s fun because it’s like it’s a get together with your friends you get to um trade cool things really interesting things. I think it’s cool to see what other people have. If you've never seen their cards before, it’s fun to look forward to when you trade them or something. (age 9)
Learning. Trading also serves as a way for the children to educate and learn from each other. When I ask Darren what makes trading fun, he responds that he learns things. When I ask what about learning makes trading fun, he reiterates his thought, “Umhmm Umhmm. Because if other people know stuff about Pokémon then they can teach you a little much while you're trading.” In the larger groups, when two children were engaged in a trade, the other children provided advice and recommendations about a variety of different things resulting in learning. In the following exchange between Shane and Darren, commentary is offered by Cole about the trade.

**Darren:** Okay, Shane. Will you trade for that card?
**Shane:** No.
**Darren:** Anything. All my Level X's for that card.
**Shane:** Let me see all your level X's.
**Cole:** Shane seriously, what would you trade? What did he say?
**Shane:** He said all of your level X's for this guy.
**Cole:** No. I wouldn't do it at all.
**Darren:** What what is that guy? (age 8)
**Shane:** Ancient Mu. (age 8)
**Cole:** It's the best card there is. (age 9)

Learning is discussed more fully as a part of the socialization process discussed later in the findings. But learning is voiced as one motivation and purpose for trading.

**Fun.** Lastly, almost universally children are motivated to trade because they obtain enjoyment and satisfaction from its enactment. Over and over again children said they like to trade simply because it was fun. Some were able to elaborate more specifically about what made it fun usually mentioning the other motivations already discussed. Acquisition of new things made it fun, but also being able to use something that was no longer valued to obtain something of value was also very satisfying. Children
may also derive enjoyment from the sense of power and autonomy they feel when they trade.

*Gail:* You know they like to feel like they're kind of like making an important decision on an exchange. You know, I hear lots of kind of like almost like a mild arrogance about like "Whether this is a good deal or not." It's almost like mini-trumpians like Donald Trump style tone. So I think they enjoy that. They enjoy having this thing that they can be like the boss of. Like Henry likes to referee it and know everything about it. And they like get this little like intensity going. You really get the sense that this is business. This is important business that's going on. And even when Hayden and Shane traded for a little while they would all get together and it took on a very serious kind of tone. Yeah, taste for taste and the candy is kind of fun they just want more candy and ice cream. But like with the toys and stuff, I think they enjoy getting grown up level, like it's more of an opportunity to feel like their making important decisions and making these trades...Cause I don't think, it's not it's not the satisfaction of them coming home. That is very short-lived. Of actually possessing it. It's very short-lived kind of satisfaction. But this kind of like thinking about it and you know thinking about trades and planning trades. (Parent)

**The Trading Process**

Observations of over 430 trading exchange attempts allow for the processes involved in trading to be extrapolated. Major themes regarding this process that emerged include distinct temporal stages of trading, the underlying process of valuation, negotiation and persuasion processes, socialization and learning, and the influence of group and power dynamics. While each will be discussed in turn as if they were distinct from each other, it is important to understand that these processes are embedded within each other with each theme capable of altering the nature of the other parts of the trading process. For example, while socialization and learning is identified as a major part of the trading process, it is often, but not always, embedded within the negotiation and persuasion stage of the trade.
The Stages of Trading. Over the course of 433 observations, distinct temporal stages of the trading process emerged. The first stage that was observed in the trading process was inventory assessment. During this stage, children either assessed their own inventory looking for an object they were willing to trade away, or they assessed someone else’s’ inventory looking for an object they might want to obtain as the conversation below illustrates.

*Olin:* Let me see. (looking at Carter's cards)
*Carter:* What are you doing? (age 8)
*Olin:* I'm looking. (age 8)
*Garland:* I'm looking at yours then. (age 7)

The next stage of a trading exchange was a trade initiation. Intuitively, it seems obvious that in order for a trade to occur, someone must initiate the trade. How children initiate an exchange attempt varies. The method for initiating a trade that predominates (55% of trade initiations) is offering one’s own object(s) up for trade. This initiation could take the form of a question like “Who wants a dog? (Kitty, age 7)” or a statement “Oscar, here’s the Reiko. (Henry, age 11)” The next most commonly used method (21% of trade initiations) is requesting another’s object; again, either through the use of a question “Can I have the shark? (Jenny, age 7)” or a statement “A hailthree. I want it. (Garland, age 6)” 10% of the time children combined both previous techniques by initiating through an explicit good for good offer where one simultaneously requests a specific object from another child and offers a specific object of their own in exchange (e.g. “Helicopter for a…Hockey stick. [Rowen, age 7]”). 4% of the time children just generally offered to trade (e.g., “Who wants to trade? Who wants to trade? [Olin, age 8]”). Three trading exchanges (or 1% of trade initiations) were also initiated as
tradebacks, where they were undoing a previous trade which either occurred during the actual observation or previous to the observation. Another 1% of exchanges were introduced by a general inquiry into what goods were available from the other person for trade.

The success of the trade initiation methods varied. Offering one’s own good resulted in the highest degree of success with 45% of exchange attempts started in this way ultimately resulting in an exchange of goods. An explicit good for good trade initiation resulted in 43% of successful exchanges. However, requesting another person’s good was less successful of a strategy with only 28% of exchanges initiated in this way resulting in an exchange of goods. Intuitively, this makes sense, as when one offers his own good, the other party needs only to assess whether or not he or she wants that good, a positive action. Even when the initiator requests a specific object, the other party need not agree. He or she only needs to find an object of his or her own that the initiators might desire. The initiator has already assessed that the object they are offering is of no value to them; otherwise, they would not have offered it. So it starts with one object in play that they both may easily agree on. The opposite is true when requesting another person’s possession. While the requester knows its value, the owner now knows that it has value because it is in demand making him or her less likely to trade it.

After a trade initiation is made, the other party approached must engage the originator party in order for the trade to proceed. Sometimes the trade engagement took the form of proceeding directly to an outcome either ending in a trade with an immediate acceptance, “Sure,” where goods exchanged hands, or in no trade. In the case of an offer
of one’s own object, the other party may immediately reject the offer, “No, I already have one” or in the case of a request for their object, the other party may respond “No, I really like that one.”

Sometimes, the other party simply did not engage either by simply not responding or by actively refusing. A lack of response usually occurred because the other party was either engaged in an exchange with a different child, or distracted by something else. Generally lack of response only occurred in the groups with more than two participants. Lack of response only occurred once in a dyad due to the other child deciding that he wanted something of the other child’s thus not responding to the other child’s request. While a lack of response was commonly seen in larger groups, active refusal was only present in one group, a group of four boys comprised of three brothers, ages 5, 7 and 9 and one other boy, age 7. In this group, the three brothers all vied to engage the fourth boy, Stephen, in trade. It was also clear that Stephen was friends with John and did not have an active friendship with the other two boys, even though one of the brothers was his age and grade. Often, Stephen was already engaged in a trade negotiation or trade battle with the oldest brother when the two younger ones vied for his attention leading to outright rejection by Stephen of their attempts to engage him in trade.

Other times this engagement took the form of a brief acknowledgement like “Okay” which then proceeded on to a more complex negotiation. Then a negotiation phase sometimes occurred as a part of the trading process. The complexity of the interaction that occurred during this phase merits its own section so its discussion will be deferred here.
The final stage of an exchange attempt is the *trade outcome*. Of the 433 exchange attempts made, only 38% resulted in goods exchanging hands. 88% of successful trades were good for good exchanges involving only two goods exchanging hands. The other 12% were made using bundling where in order to obtain a single item, children had to trade multiple items making two or three for one deals. The majority of exchange attempts, however, were unsuccessful with 62% resulting in no exchange of goods. Of these unsuccessful trades, 22% were due to lack of response to the trade initiation. The other 88% of unsuccessful exchange attempts were due to a variety of reasons. Most often, the two parties simply could not reach an agreement as to the goods each found acceptable. In other words, they could not achieve parity with the valuation ratio (see below) with each being satisfied that they were receiving something better than what they were giving away. Sometimes, children were simply distracted by something else like horseplay, another party’s trading attempts or another person’s different offer or request resulting in no resolution to the exchange attempt.

In addition, to the outcomes having to do with the goods themselves, children experienced emotional outcomes in the trading process. When trades resulted in success, children often expressed emotions of delight like Carter (age 8), “Yeah! I got licky licky man.” Oliver (age 6) even expressed the emotion of surprise when he succeeded at a trade saying “Wait. Really?” When trade negotiations were unsuccessful, frustration and sometimes anger was expressed like Ian (age 8), “This guy is way better. Fine, rip yourself off.” Disappointment also was seen which Kitty (age 7) expresses when her attempts to gain a silly bandz are ignored, “But the build a bear head…” Emotional
responses were also not simply isolated to outcomes but were embedded throughout the negotiation process. As children cycle through offers and requests as things swing their way or not during the negotiation process, their emotional states move through many of the same emotional states as described above.

Another outcome that occurred which are associated with emotional responses are behavioral responses of the children. Sometimes when a child succeeded in a trade, they engaged in behaviors that were most often negative. For example, when John (age 9) succeeded in his trades, in addition to expressing satisfaction in the trade, he gloated over his success. That is, he expressed his satisfaction in an almost malicious way lording his success over the other children.

John: Hey Teddy, I'm really thankful for that Sawbuck because now it can actually heal 20 damage to itself. Plus it has 16 attack.
Teddy: I know. (age 7)
John: How could you even trade that? It's like "I know." (age 9)

Actions in Trading. Core actions that can be involved in any trading exchange are offers, requests, rejections and acceptances. In an offer, one party presents or proffers something to the other person for consideration. The something offered during trading generally is a specific object, sometimes multiple objects, for another object. In a request, a party asks or expresses a desire for something from the other person. As has already been discussed, a child generally initiates a trade either by offering his own object or by requesting another’s object.

In a trading attempt, the response is generally to accept or reject the initial offer or request. Acceptance occurs when a child assents or agrees to another child’s action. An acceptance of the initiation is generally followed by a response unless it was an explicit
good for good offer which is then immediately transacted. If the initiation was an offer or a request, then a second response is needed to determine the other good involved in the trade. If a child was offered someone else’s object, he must now respond with an offer of his own object or conversely the other child could request a specific object in exchange. If a child’s own object was requested by another, he must now request an object from the other person or be offered an object by the other party. As one can see, the transaction may be an exchange where parties go back and forth with each other, or the exchange could be dominated by one of the parties who dictates both objects involved. *Rejection* occurs when they refuse another child’s action. A flat-out rejection ends the transaction, although the child may initiate another exchange attempt in response. If these initial requests and offers are not acceptable to either party, then rejection occurs. Each party can then be free to make counteroffers/requests in kind to the other and enter into a negotiation process which will be subsequently discussed. Below is a very straightforward trading exchange over silly bandz:

Rowen: Pac-Man for… (offer of own good)
Chase: A Ballhall? (offer of own good in response)
Rowen: Yes (acceptance)

*The Valuation Process*

Before going in-depth into the negotiation phase of trading, it is important to understand the valuation process of trading because it is integrally related to the process of negotiation. Negotiation involves the determination of mutual value. Thus research question 4, “What comprises this determination of mutual advantage?” is addressed. Specifically, what is the decision and valuation process where the value of one’s owned
When kids agree to a trade, they assess the value of the object they own and the object they can obtain and determine that the owned object’s value is less than that of the other’s object if they decide to trade. This process of determining value is discussed by first, reviewing the attributes of the object children used to determine its value. Next, how children array these objects within their inventory along a valuation continuum is described. Lastly, the valuation ratio that compares their owned object with the object they can obtain that underlies this process of barter and the process they use to arrive at this determination is discussed.

Throughout the observations and interviews, children made statements about what they liked and valued about these objects. Many of these instances occurred when children refused to trade an object providing a reason and rationale for their rejection of the other’s request for their object. These statements were coded very close to the data. Using words like shiny or HP or animal. From these codes, thematic categories of value emerged. The attributes associated specifically with the objects that were of value could be subdivided into two major categories, perceptual and cognitive characteristics.

**Perceptual Attributes.** Perceptual characteristics are those aspects of the object that are perceptually salient. They are visual features of the card that are noticeable just by looking at the card. A number of perceptually salient attributes are discussed by the children to include the following (a) being cool-looking (e.g., in response to an inquiry as to why he wanted a Pokémon card with a creature he already had as a different Pokémon card, Shane, age 8, explains “Well, he’s different form and cooler.”); (b) being
shiny (e.g., in rejecting an offer to trade for his object, Darren, age 8, reasons, “But Empoleon is shiny.”); (c) its size (e.g., in response to why she wanted the necklace silly bandz, Kate, age 6, says, “It’s big and it stretches.”); (d) its cuteness (e.g., in responding to my inquiry as to whether or not she likes silly bandz rings because of their small size, Sally, age 7, responds, “Yeah. And they’re cute.”); (e) being branded (e.g., in response to my inquiry into what made a particular silly bandz special, Jenny, age 7, says, “Because it’s a horse and it’s from Bella Sara.”); (f) the animal or creature (e.g., in response to my inquiry about what about Webkinz cards she likes, Kitty, age 7, explains, “I just like animals that are on them.”); (g) colors (e.g., in showing me her special penguin silly bandz, Kate, age 6, states, “Especially this pink one because my favorite color is pink.”); (h) having a special feature (e.g., in an inquiry about why he likes certain CrazyBonz, Oliver, age 6, responds, “Some of them are sparkly and shiny.”); (i) being able to wear the object (e.g., in response to what he likes about Silly Bandz, Chase, age 6, states, “And you can put them on your wrist to go to school.”); and (j) the condition of the object (e.g., Teddy, age , states during a trade, “I’m trading electrovire back because he’s a little crumpily.”).

**Cognitive Attributes.** Other aspects of the object that children seemed to value required a more in-depth knowledge of the objects as well as their potential uses. These attributes were labeled as cognitively salient as valuing these attributes required that the person look beyond the attributes that were most perceptually salient. In the case of Pokémon cards, cognitively salient elements include the quantitative components of
health points and damage/attacks which are related to using the cards in game play as George explains.

George: So the things I look for when I trade. Is how much damage does it do? Like this one does 80 which inflicts this to make it 50. And how much they have HP. And I also look to see if they can do any special conditions like paralysis. See flip a coin and if heads, then the different Pokémon is now paralyzed. (age 10)

In addition, the objects connection to other media like a TV show, movie, video game or other toys requires more detailed knowledge of the object as Chase (age 6) states.

Chase: Well, it’s a show too. It also has its own show…. And Pokémon cards since they have the show. People want the cards because then if you get more cards you know, you know the show. (age 6)

Some objects also can be physically manipulated like Bey Blades and Japanese erasers requiring more cognitive knowledge (e.g., Kate: Well they’re fun to take apart. (age 6)).

Value Derived from Contexts. But children also seem to value the objects due to contextual factors which can be conceptualized in several different ways. In some instances, the contextual factor was associated with the child that caused him or her to have an idiosyncratic preference for the object. Examples of idiosyncratic preferences included the following: (a) how the child obtained the object (e.g., Jenny: No wait, I got that one from the tooth fairy. [age 7]); (b) its association with an event or activity they engage in (e.g., Rowen: Because I play football. [age 7]); (c) it was a collectible (e.g., George: So I’m collecting all the legendaries. And I’m trying to get all the Pokémon. [age 10]); (d) it represented a favorite animal, color, etc. (e.g., Oliver: I love it. It’s my second favorite color.([age 6])); (e) it was associated with a personal trait (e.g., Here Sally, age 7, explains why she likes the octopus squishies: They’re squidies. Cuz my
nickname’s squid. My dad calls me squid.); (f) it being new to them; (g) it being the first of its kind they received; or (h) owning something that the object represented.

Another contextual factor that made a child value an object more highly had to do with the objects themselves but in a relative sense to either other objects in general or in relation to other objects they already owned. Statements that indicated this relative valuation to other objects in general usually took on the flavor of being better or different than other objects. Comments for valuation were also made relative to the other objects in their inventory such as not having the object they sought to obtain through trade.

One very commonly commented on contextual factor that had to do with the objects themselves was rarity. During trading observations, many children commented on the rarity of the object as a persuasive tactic to justify requesting a better object. While described in different ways, the children generally understood rarity. Some statements inferred that rare object are unique as Olin, age 7, illustrates in his response to why he would not trade away one of his Pokémon cards, “It’s just shiny, and like this is really rare…like the outline cause there’s not many cards that have that.” Rare objects are difficult to obtain as they are “hard to come by (Oscar, age 8)” or “impossible to find now because they stopped making them (Henry, age 10)” or “it’s only in a few stores. It’s not sold like in every place (Chase, age 6)”. It can also mean that others do not have it. Occasionally children mentioned third party sources such as books and websites that specified which objects were considered rare. Children’s understanding of the concept of rarity is theoretically interesting as it illustrates those children, as young as age 6, understand the economic concept of scarcity and that scarce resources are valuable.
The last contextual factor that children seemed to use to place value on the objects had to do with the context of what they can do with the objects. Comments of this nature had to do with what kinds of activities the objects would help to facilitate. These contexts include (a) being a part of what others were doing (e.g. John: I saw some people trading cards and using them. And I saw them and I was like “Oh Wow, that’s cool.” [[age 9]]); (b) competitive play (e.g., Carter: That you can fight with them. [age 8]); and (c) trading - Oliver: How you can trade. (age 6)

**The Valuation Array.** Using the above attributes and characteristics of the objects, kids seem to array their collection or inventory of traded objects along a continuum of value that can be thought of as falling on a valuation curve. The x-axis is the subjective value placed on objects which ranges from 0, or having no value to the child, to a very high value. The y-axis is the probability that the goods in his inventory holds that level of value. As can be seen in Figure 5, a typical child, child 1, may have valued his or her inventory in a curve that approximates a normal distribution such as depicted by the blue line. The yellow vertical line denotes a trading threshold where the goods above that threshold hold such high value for the child that he or she is unwilling to trade away those goods. All goods below the threshold, however, are open for trade. Children varied in how they value their inventory of goods along the valuation array. Previously the difficulty Darren had in trading away his Pokémon cards during the trading observation was described. Darren can be thought of as child 3 having a valuation array that is depicted as the green dotted line. For Darren, almost everything that he owns in his inventory of Pokémon cards is above the yellow threshold. While Darren wants to
trade with the other boys, his valuation of his cards is so high that he cannot reach agreement with the other children over an exchange. Yet another child, child 2, may have a different valuation curve that is just the opposite of Darren. In his or her estimation, almost everything can be traded because very few items in their inventory are above the threshold making almost anything tradable given the right offer.

Figure 5. Possible Inventory Valuation Curves for Different Children

In addition to having objects that are held in too high esteem and are therefore too valuable to trade, there also seem to be some objects that hold no value at all in trade. This was particularly the case in Pokémon cards. In some groups, children seemed to shun what was known as a basic card. Basic Pokémon cards tend to be characterized by lower levels of health and attack points. These cards are commonly and easily found in
that purchase of a starter deck may yield multiple copies of the same basic card. In other words, basic cards are plentiful. These characteristics made basic cards untradeable as they were devoid of value to the children observed although this is not to say that these cards would not have any value to any child.

When children’s valuation statements within the context of the valuation array are examined, a picture of what places an object above the “won’t trade” threshold or below the “can’t be traded” threshold emerges. Children were specifically asked to show objects that they owned that they refused to trade during observations. The characteristics that children describe as placing it above the “won’t trade” threshold or conversely below the “can’t be traded” threshold echo the valuation statements discussed earlier. Aspects that add value that place it as above the threshold include the following: 1) having a personal attachment to the object (Kate: It’s my favorite); 2) being part of a collection (George: I’m collecting 100’s); 3) the way they obtained the object (Kitty: I got it for my birthday); 4) who they received it from (Garland: My grandmother gave it to me.); 5) its uniqueness in their inventory (Mady: That’s my only one; Cole: He’s my best card.); and 6) it was the first in their inventory (Teddy: Because he’s my first electric type). Similarly, aspects that detract from the value of an object making it untradeable include the following: 1) poor condition; 2) idiosyncratic preferences; 3) idiosyncratic nature of the child’s inventory (i.e., having one already); and 3) attributes of the object like having too low health or attack.

In addition, other aspects that were not associated with the object or the child could add or detract value was observed. These aspects occurred in situ as part of the
trading context. For example, sometimes as a part of a trading transaction, a child would place a stipulation on the trade. The stipulation of tradebacks—where the children can undo the trade at a later time—sometimes was seen to add value to the trade from the perspective of the person who called tradebacks but detract from the value of the trade for the other party. For example, when Cole called tradeback in a transaction with Shane, Shane drops his head in disappointment and says “Awwwww!” Clearly, calling tradebacks on the trade reduces the value of the trade for Shane as it makes the object he obtained potentially temporary. In another example, when Darren calls tradebacks on a trade with Ian, the stipulation so devalues the trade that Ian refuses to make the trade.

Another aspect of the trading that can alter the valuation children place on objects in situ is the commentary made by other children who were not a part of the trading transaction. While sometimes they did not influence the children involved in the actual trade they were commenting on, often, the commentary persuaded children to either increase or decrease their valuation of objects involved. In the exchange below between Ian and Cole, Shane’s commentary influences Cole to continually reject Ian’s offers. In the next exchange, Henry’s commentary confirms the value of the cards in the exchange between Oscar and Milton.

*Ian:* I’ll trade you this guy. This guy for that polliwog.
*Cole:* This guy for that guy? No.
*Ian:* Why?
*Cole:* Better.
*Ian:* Oh brother.
*Shane:* Yeah. Well that guy does 50 damage and he only does 40
*Ian:* so he has more health points
*Shane:* No, he does 50 damage
*Ian:* Oh, this guy. (age 8)
*Shane:* Why would he do that? He's animated. (age 8)
Cole: Ummm. No (age 9)

Oscar: Okay. Umm, Ahh (Presents a card)
Milton: No not for Froggie. He has 130 damage.
Oscar: (picks up another card and presents it) Da da da! (age 8)
Henry: Oh yeah, that's a good trade. (age 11)
Milton: (takes the card) (age 7)

The valuation array also can convey the value of the child’s entire inventory of the object. In this sense, the value derived in any single object is viewed by the child within the context of his or her overall inventory of those and other objects. The value is then in how that object adds to the utility and value of the child’s entire array of objects. In the case of Pokémon, how a single card fits into the child’s entire deck of cards is part of what adds to the child’s utility for that card. This utility can be thought of as simply not having one of the desired objects in their deck. Or in the case of George and Frank, who play the game designed by Nintendo, the utility of the card comes from how well it complements their existing decks used for game play. The utility of the child’s inventory can be seen in this answer from Kate in an inquiry as to why she wanted the squishies that Blair brought to their trading play date.

INT: Now I noticed that you gave you traded Blair for some squishies. What made you want the squishies?
Kate: Because I don't have much squishies and I thought that I wanted more. (age 6)

The goal of the valuation process in trading for a child then can be thought as increasing the utility of their entire inventory. This inventory utility explains why both acquisition and disposition are motivations for trading. In acquisition, the object obtained adds value to the child’s inventory of possessions. Disposition in contrast adds value to
the inventory by subtracting out unwanted, superfluous objects. It is easy to see why trading has such appeal in this context as one is able to unload undesirable objects and replace them with desirable ones within the same transaction increasing the value of the whole array of possessions.

**The Valuation Ratio.** As the literature states (Mpingarnjira and Oliver 2011), the difficulty in barter is the problem of double coincidence of need. Each party must have a need for what the other party has in order for barter to succeed. In other words, when a person agrees to a trade, he must value more highly the good he is to receive than the good he intends to give away creating a valuation ratio that must be greater than one. This valuation ratio must be greater than one for both parties in order for a trade to succeed. Here the utility of the other person’s object must be greater than the utility of their own object. Achieving this valuation ratio is the goal of negotiation because this ratio must be achieved for both children. The inherent difficulty in aligning these ratios accounts for the majority of exchange attempts resulting in no exchange of objects. In the following exchange, Oscar (age 8) adds to his offer to achieve the valuation ratio with Henry (age 11):

*Henry:* Do you want Ryperion?  
*Oscar:* Ahhh…? (offers a card in return)  
*Henry:* uuhh (negative)  
*Oscar:* Plus ahhhh?  
*Henry:* hmmmm, yeah, that's good.

**The Negotiation Process**  
Aligning both parties’ valuation ratios is at the heart of the negotiation process in trading. The goal of negotiation is to find an arrangement that suits both parties involved
so that each child has a valuation ratio greater than one. In trading, the bargaining and
negotiation strategies children use are observed and thus we can answer research question
5. What strategies do children use in trading to bargain and negotiate with each other in
order to get something that they want? And what factors may influence that process?
First, the second question concerning what influences the occurrence of negotiation is
addressed. Next, the actions that occur in negotiation are discussed. Then an in-depth
treatment of major sub-processes to include persuasion and stipulations are discussed.

Factors that Influence the Enactment of Negotiation. Not all exchange attempts
have a negotiation phase. As was stated above, some exchange attempts resulted simply
in an outcome with kids accepting or rejecting the initial offer or request. Several factors
seemed to influence whether or not children engaged in negotiation. The first factor has
to do with the ease of alignment of the valuation ratios for each child. When a child
makes an offer/request, the other child must respond in kind with a counteroffer/request
(except in the case of an explicit good for good initiation). If both children assess the
objects and the valuation ratio as greater than one for both parties, then the trade occurs
easily without negotiation. If one party does not achieve this ratio, either negotiation
ensues or he or she rejects the offer/request and moves on to another object. This flat out
rejection may occur because the object used to initiate the exchange attempt may not be
of interest to the other child approached to trade for several reasons. Recall that a trade is
initiated most often by offering one’s own object. In immediate rejection, the other child
may assess the offered object as falling below the “can’t be traded” threshold for the
reasons outlined in the valuation process section. Conversely, if the trade is initiated by a
request for the other child’s object, the trade may be immediately rejected because the object falls above the “won’t trade” threshold. Either condition will result in no negotiation for the initial object.

Another factor that seems to influence the enactment of negotiation is the age of the child. Generally speaking, younger children, ages 5 to 7, tended to negotiate less than older children. This observation may be confounded by the fact that many of the younger children observed traded in dyads whereas older children were observed in larger sized groups. The number of children involved in the trading observations was left to the discretion of the parent arranging for the play date which for younger children often meant dyadic interactions. However, when younger children traded as a part of larger groups, their trading interactions within those groups tended to be shorter because of a general tendency to not negotiate although young children still did upon occasion. When they did, it tended to be less protracted than those negotiations that occurred among older children, ages 8 to 11. Oliver (age 6) for example, who traded in a dyad with Gino (age 7) would negotiate over Pokémon challenging Gino for reasons why his requests were rejected. Gino, however, did not negotiate in return, most often, giving in to Oliver’s request rather than engage in conflict which can occur in a negotiation.

Why age influences the enactment of negotiation is a complex question. Since the heart of negotiation is in negotiating the valuation ratio to be greater than one for both parties, it could be a matter of perspective taking. Children in this age group tend to be more egocentric seeing the world from their own perspective. Recall that negotiations involve shared mental models. A mental model for negotiation requires a cognitive
representation of the expected negotiation, a representation that encompasses understanding of the self, negotiator relationships, attributes about the other, and perceptions and knowledge of the bargaining structure and process (Bazerman et al. 2000). Younger children may simply lack the skills and cognitive abilities to be able to develop the mental models necessary for negotiation particularly in being able to understand the attributes valued by the other party and the relationships that exist between the parties.

In addition, children, ages 5 to 7, are in the perceptual stage where they make simplified decisions using only one perceptual dimension to make their decisions (John 1999). It could be that younger children do not engage in as much negotiation because their decision process for the valuation of objects in trading is so simple that they may not want to pursue the objects involved any further.

*The object itself* may also affect the extent to which negotiation occurs although this is also confounded with age as only younger children traded silly bandz. Yet, observations of Pokémon trading had significantly more instances of negotiation than any observations of silly bandz even when Pokémon was traded among younger children (i.e., Oliver and Gino). As an object increases in the number of attributes that a child places value, the more complex the valuation and decision process becomes for each individual child when they are trading. The complexity of Pokémon cards provides many attributes (the creature and its variations, its evolution, its type, types and damage of attacks, health points, rarity, world champions, size, version, etc.) which can be presented as having value to the other child in an effort to increase their valuation of the object. Silly bandz,
in contrast, have relatively few attributes, shape, color, size and smell. One either likes the shape, size and color or does not, simplifying the valuation process which in turn simplifies the negotiation process.

**Actions in Negotiation.** As was stated earlier, core actions of any trading exchange include offers, requests, rejection or acceptance. Within a negotiation, these actions may occur multiple times. For example, in response to Child B’s request for Child A’s object, Child A may request a specific object of Child B’s which he subsequently rejects requiring that Child A counter that rejection with a request for another object. A number of aspects of the trading negotiation can be accepted or rejected throughout the negotiation process. In addition, to offers and requests, children can accept or reject stipulations placed on the trade, persuasion attempts, and third party attempts to enter the transaction. Unlike offers, where the something is generally a concrete object, *requests* can be about a number of aspects of the negotiation. A child may request a specific object. But they may also ask for clarification about the other child’s 1) object (i.e., “What is it?”), 2) offer, 3) request, and 4) trade in general. Children also request to evaluate potential acquisitions (i.e., “Can I see that?”) or for justifications for another child’s action particularly when their offer/request is rejected. In the following exchange between Kate and Blair, multiple offers and requests are made before agreement is reached.

*Kate*: Do you want a bathing suit for something? (Offers own object)
*Blair*: This? (Clarification)
*Kate*: Like.. What is that? (Request for clarification)
*Blair*: It blows up into something.
*Kate*: For… a dolphin (Squishie) (Requests other’s object)
*Blair*: No. (Rejection)
Kate: Why? (Inquiry)
Blair: It's my favorite. (Rationale for rejection)
Kate: But that's my favorite. (Persuasion)
Blair: This? (Offers own object)
Kate: This? (Requests other object)
Blair: Nope (Rejection)
Kate: What is it? (Request for clarification) Cat… Cat thing. I love the Squinkies.
Blair: (Nonverbal agreement) (Exchange Bathing Suit Silly Bandz for Cat Squishie)

Additional actions, in the above exchange, are taken which may or may not take place during the negotiation process. For example, an action very similar to requests are inquiries. Inquiries ask for information. These are more general questions that children ask during the negotiation process. These questions may be about the general availability of goods (e.g., Milton: Do you have any 70’s guys?), about the other’s preferences (e.g., George: So, yeah, okay, you want another rare card that doesn't have a level?), about what the other wants in a trade (e.g., Kitty: What do you want?), and for another’s opinion (e.g., Frank: So what should I take out?). In the above example, Kate wants to know the rationale behind why Blair won’t trade. To justify her decision, Blair provides a justification for the rejection. During negotiations, this rationale can be requested and provided for when requests or offers were rejected. Because acceptances resulted in favorable actions for both parties, rationale for acceptance was not observed.

Another action that is occurring that is not obvious from the words spoken in the above exchange is inventory assessment which was identified earlier as a beginning stage of trading as a child must assess their own goods or the goods of another child to make an initiation offer/request. But inventory assessment is not isolated to this beginning stage and can occur throughout the trading process. When Blair and Kate say “This?” in the
above exchange, they are looking through Blair’s inventory of squishies to find a suitable object for trade. While this occurred nonverbally, children may verbally invite another child to assess their inventory during a negotiation. In an attempt to obtain two cards of Tom’s, George offers his cards up to Tom for his perusal.

George: Did you look at any of the 100's? Do you want any of the 100's? (age 10).

Persuasion. Persuasion also occurs during the negotiation phase. Persuasion involves the use of argument or reasoning in order to convince another of the value of a good. Persuasion most often involves trying to convince another of the value of an object. In doing so, persuasion attempts often involve highlighting a particular feature or attribute of the good in order to convince a child that the good is of value.

George: Legendary. Awesome card that can do 100.
Tom: How can he do 100?
George: Revenge Fang. If you have less benched Pokémon than your opponent each of Hound doon's attack does 40 more damage to the active Pokémon. So 40 plus 60. Basic math. What is that?
Tom: 100
George: Exactly.

In the above example, not only does George present attributes of the card, but he educates Tom in a very convincing fashion about the power of the card in gameplay. A child may also invoke social norms as a persuasive tactic as Ian did with Darren saying “Oh my gosh, see Cole and Shane would have done this.” Statements may also be used that inferred that the other party did not recognize the value of the trade (e.g., Ian: Fine, rip yourself off.). Persuasion also was used to provide a rationale for trading standards. For example, Oliver (age 6) invoked parental instruction with Gino over why his legend
cards were not available for trade, “Legend for legend, my mom said.” Persuasion may also generally be *about the overall trade’s value* as Ian states to Darren, “Dude, it’s a good trade.”

**Stipulations.** Stipulations also may or may not be a part of a negotiation. A stipulation is a condition or demand placed on a trade transaction. Different kinds of stipulations were made in different exchange attempts. Stipulations could be about the other child’s good like *having a specific attribute* (e.g., Kitty: It has to be rainbow.), *a general good or better object* than the one offered (e.g., Olin: A good guy please.) or be *something new* to the child (e.g., Cole: Something I don’t have.). Sometimes the stipulation involved *bundling*, where the child requested multiple objects be offered in exchange for his own. In this way, when an object is considered very valuable, the valuation ratio can be achieved by offering more than one object in return. Below is an example of a bundling stipulation that ultimately is rejected.

*Ian:* I want him. I want him. (requests other’s object) 2 level x for him. (bundling offer)
*Cole:* Hmmm.
*Ian:* 2 level X’s for him. (Bundling offer)
*Cole:* 2 level X's for him?
*Shane:* Don’t do it, don’t do it. (Socialization, Advice)
*Ian:* Arceus. (offered object)
*Cole:* No. (rejection)
*Shane:* Say only for 3.
*Cole:* Only for 5. (Stipulation, bundling)
*Ian:* Noo, Cole.
*Cole:* 5. (Stipulation)
*Ian:* 3. (Counter-stipulation)
*Shane:* He can do that Ian, it's his cards. (Socialization, normative rules)
*Cole:* 5.
*Ian:* I'm not doing it. (Rejects stipulation)
Tradebacks. A stipulation of particular interest was that of tradebacks. As was stated earlier, when one of the parties calls tradebacks, it means that either of the parties can undo the trade at a later time with the objects returned to their original owners. Tradebacks are an interesting phenomenon for negotiation as tradebacks can be used to achieve the valuation ratio as was described earlier about the tradeback between Cole and Shane. By reducing the loss of his object by allowing the transaction to be potentially undone, Cole was able to reconcile his valuation ratio and proceed with the trade. Tradebacks thus increases the value for the child who calls it and decreases the value for the child who must agree to it sometimes resulting in refusal to trade as was exhibited in the example of Darren and Ian discussed earlier. Tradebacks was also mentioned only within Pokémon trading observations.

Through the use of persuasion, stipulations and other negotiation tactics, both implicit and explicit rules children use emerge from the data to address research question 3. What implicit and explicit rules do children use when they enact barter? Tradebacks is an explicit rule that children have established as a part of trading. Not only was it understood by most, if not all, of the children who participated, but the rules of its enactment were also understood. One must call tradebacks at the time of the trade agreement. Similarly, all stipulations placed on trading agreements are explicit rules for trading. Implicit rules include those associated with social norms which sometimes were invoked explicitly during persuasion. In addition, standards of value appeared to be implicitly understood as rules as a part of trading. For example, whenever an object was offered that was in poor condition (e.g., taped up or broken) the other party simply gave
the originator of the object a look to establish the shared understanding of its lack of value. When children demanded something better for their object, children seemed to understand implicitly what better meant.

**Commentary of Third Parties**

Commentary of other parties is also a very interesting phenomenon that can occur during entire trading process. This dissertation conceptualizes trading as occurring between two parties both acting in identical roles as buyers and sellers. However, in groups where more than two children participated, the other children often actively participated in the exchange as influence agents providing advice, their opinion of and information about the objects being traded, and their approval or disapproval of the valuation ratio. In the example below, Cole and Shane provide third party commentary in an exchange between Darren and Ian below.

**Darren:** I'll trade you Drapeon for Mew 2.
**Ian:** Okay.
**Cole:** Darren, no. That's a horrible trade. (Third party commentary)
**Darren:** Okay (snatches his card away).
**Ian:** Don't listen to him.
**Shane:** No, that's a good trade. He does a120 damage. (Third party commentary)

**Cole:** Trade for his best card that he doesn't want. (Third party commentary)

**Ian:** No here. It’s a good trade

Whether or not the children who were directly involved in the exchange listened to others comments seemed to have largely to do with the nature of the relationship between the children involved. In the above example, Darren clearly listens to Cole with whom he has been friends with over a year and not to Shane who he has just met. In
another example, in the exchange between Milton, Henry and Oscar, Henry’s opinion was openly sought by Milton as the nature of their relationship as brothers encouraged reliance on his expert opinion. In this way, the commentary of third parties often contributed to the valuation or conversely, the devaluation of objects. As will be discussed more in-depth in the socialization section third party commentary serves as a way peers serve as socialization agents.

Increasing the number of children in a group adds complexity and social interactivity to the trading activity. The average time children spent in trade when the group were dyads was 18 minutes while the average time children spent trading in larger groups was 42 minutes and 48 seconds. Since all dyads were younger children, this observation is confounded with age. Still younger children did take part in several of the larger group observations and did not seem to tire of the activity when they were with older children. This increase in time spent trading highlights the importance of sociality as a part of the appeal of trading to children. With more than two children, the opportunity to engage in exchange with more than one child increased the engagement of the activity as even when a child wasn’t engaged in a trade, he or she could participate via commentary.

**Having More Than Two Parties**

Having more than two children engaged in trade also afforded the opportunity to observe what occurred when more than two children were involved in a trade. In three groups of two children, only dyadic trades occurred. When the differences in the composition of these groups from the other triads and quadrads are examined, a common
similarity emerges. In both group 2 and group 6, two of the boys were close relations with group 2 having a set of cousins who spent a great deal of time together, and group 6 having a set of brothers. While the trading differed in each group, the common element is that these boys did not seem to want to engage in trade with each other. This is not to say that these boys do not trade with each other. In fact, parental interviews inform that they do trade with each other regularly. But because of their regular contact with each other, chances are they have exhausted the opportunity to trade previous to the observation. So when gathered with another party, with whom they do not have regular contact, they prefer to trade with the other child. Even in the three other groups where multiple party trades occurred, the party who had the object in demand by the others would sort through the choices being presented and choose one partner with whom to trade such that most trades observed ultimately were dyadic.

When more than one party wanted to be engaged in trade with another person, interesting gender differences emerged. In the quadrad of girls who traded silly bandz, the girls would take turns offering one of their own objects up for trade by saying “Who wants a [fill in the blank]?” The other girls would gasp and raise their hands. Sometimes, one of them would offer a silly bandz to the girl in control. But frequently, the girl in control would choose a girl with whom to trade prior to receiving a return offer. In other words, she chose the girl with whom she would trade without evaluating what she would be getting in return. When more than one party was involved when boys traded, the parties involved were always evaluated on the basis of the object being offered. They also did not raise their hands in response to indicate their interest in an offered object. Instead,
they might engage with a “me!” but then they would busily look through their inventory to find a suitable offer.

**Fairness and Ethics in Trading**

Ethics and fairness are also themes that emerged from observations and interviews. Ethics are those principles to which one attributes worth and rules of conduct which are concerned with what is right, fair, just or good and how people ought to behave (Preston 2007). As was discussed earlier, while parents are generally uninvolved in their children’s trading, there are times where they feel their oversight or intervention is needed. One such time involves the distributive justice of the trade or the fair allocation of goods. In other words, parents intervened if they felt their child had been or could be taken advantage of and exploited. Here June describes her watchfulness over Olin because he plays with a much older boy.

*June:* He's a very nice boy. But the age difference is one that Drew and I always watch. Because he uses it. He's a smart boy. And he uses it to his advantage. Whether they’re playing sports. Because they both love sports. And when it comes to trading or sports or anything competition, he takes advantage in a lot of ways. Just because of the age. Him being older, Olin being younger. So honestly as a parent, I would say it doesn't work out all that well. But if in Olin's view that it works out okay then he may get taken advantage of and he may not know it. But we try to keep a closer eye. And make sure he knows if he's not comfortable or not happy with a trade then you don't trade. It’s a no trade. So he's kind of to learn, learn some lessons that way. (Parent)

Unethical behavior was also observed. In the observation with John, Teddy, Marshal and Stephen, John, the oldest by two years, won every trade battle in which he engaged. Notations made in field notes are as follows.

*Field Note:* The oldest boy takes advantage of all the other boys in these trade battles. He determines the winning and the losing and since he is the most
advanced linguistically, he seems to be able to justify what he does. I don’t quite buy that he really knows what he is doing.

Some children even admit to using unethical behavior to obtain the things they want from their younger counterparts.

George: And uh, so, sometimes I kind of do cheating trades because I really want the cards.
INT: What do you mean by cheating trades?
George: Um, I don't give very much good stuff. I remember this summer when I was in 2nd grade, we went to California and we bought some Pokémon cards at the flea market and then I gave him like the stupidest card in the world and I said 'This is really rare and this is really good. For a really good card that did a lot of damage. And so,'
INT: And who did you do that with?
George: I did that with my brother. (age 10)

George even laughs about it during the observation when Tom comments on how good his cards are.

Tom: Don't I have bad Pokémon cards? (age 8)
Frank: Not all.
George: Now you do.
Frank: Now you do. (George and Frank both laugh)
George: Just kidding. Sometimes you have good ones.
Frank: You have a few.
George: Every so often you have good ones. No offense. (age 10)
Frank: No offense. (age 8)

George (age 10) has such strong persuasive skills that the researcher ended his trading observation as he initiated a trade with Tom for his Pokémon tin for multiple Pokémon cards. Prior to the start of the observation, when the other children had not yet arrived, he showed his Pokémon tin, his only one, which was a gift from a close friend of his, to the researcher. It was obviously one of his prized possessions. Not only would it have resulted in Tom’s loss of a prized possession, when George started to negotiate for Tom’s tin, the researcher’s sense of fairness and parental instincts kicked in as the tin is a
far more valuable object monetarily than the cards are. If George had been trading for Tom’s tin using another tin, it would have been allowed. But George was only offering a handful of cards. The researcher felt some level of responsibility if Tom lost his tin in exchange for five Pokémon cards since the reason the children were trading was for this research. In addition, Tom initially refused to trade his tin, but George was so persuasive and so persistent that his resistance was dissolving and he began entertaining George’s offers. Ethically, it simply could not be allowed and the observation was ended. By ending the observation, Tom was able to avoid the trade. Despite this, however, George continued to persist and his brother, Frank, said “George, we can do that after she’s left.”

But not all children engage in unethical behavior. In fact, it was only in these two groups that truly unethical behavior occurred. In other groups, unethical behavior sometimes occurred but it seemed more like play. For example, in the quadrads with boys and girls of equivalent ages, stealing others objects was a game that was played. But its enactment was done in a playful manner, and the object was always returned. Groups also generally were conducted with children who were already friends with each other. In this case, friends looked out for one another “catching” the others stealing or otherwise stopping children from engaging in unethical behavior such as the instance shared previously where Ian stopped Darren when he tried to “trade” a card with Cole without Cole present. The presence of a party whose ethical line was exploitive in fact altered the tone of the group interactions in which it occurred.
**Group Norms and Dynamics**

This work uses the definition of social norms from Parsons (1968) theory of the socialized actor as an individuals’ actions are equated within a choice among several alternatives. Within Parson’s framework, norms are defined as a concrete course of action which is generally regarded as desirable and combined with injunctions to ensure individuals’ conformity in their future actions to this course of action. These norms then comprise a common value system and play a crucial role in shaping individual needs and preferences serving as criteria for selecting among alternatives (Parsons 1968). In analyzing qualitative data, one must not only find points of commonality but also points of difference. One major point of difference was that every group was different from another with differing normative standards for negotiation and value. While there was commonality in the actual processes that took place, the tenor and tone of each group’s interaction was distinctive. This finding is logical given that each group was comprised of different children who had differing relationships with each other. The complex interplay of the children’s personalities, their goals for trading, their existing relationships, their sense of ethical behavior and fairness and other factors served to create power and group dynamics and normative practices unique to every group which addresses research question 2. How does the nature of the relationship affect the act of trading between children?

The nature of each group’s dynamic was reflected in the ease with which the children in the groups reconciled the valuation ratio could be mapped onto a continuum ranging from easy on one end to very difficult on the other. As has been previously
discussed, factors that played into this included the object, as simpler objects like silly bandz had easily arrived at valuations decisions making the trading free flowing and frequent. Fewer children also made it easier to reconcile the valuation ratio and it also made the activity shorter. Therefore, for the sake of brevity, only the group dynamics of the triads and quadrads that traded Pokémon cards will be discussed in terms of how group dynamics affected the enactment of trading.

The two groups with the poorest group dynamics were group E, a triad with George (age 10), Frank (age 8) and Tom (age 8), and Group H, a quadrad with Stephen (age 7), John (age 9), Teddy (age 7) and Marshal (age 5). These groups had two similarities, 1) the presence of an older boy who seemed to have superior knowledge and questionable ethical intent; and 2) poor pre-existing relationships. Although these two groups also had brothers, Group F also had a set of brothers. But the relationships between Group F’s brothers was that of nurturance and alliance. They came from a family where their parents’ socialized them to be protective of each other as Gail put it.

\textit{Gail: [T]}hat's kind of like by design a little bit because that's kind of how I've raised them to be. If somebody gets hurt, if somebody gets bullied, if somebody gets whatever, that the three of them first and foremost… Like you have to stick together so…. so if Milton came home crying and it has happened that Leo or that Oscar didn't do a fair trade, I would be angry with Henry if he were there and let it. (Parent)

In essence, these groups had a dominant power trader. The power appears to be held in two ways. The first is in being the preferred trading partner. John gains power in the group because he is the preferred trading party for Stephen. The two younger brothers, Teddy and Marshal, do not normally play with Stephen. This lack of relationship combined with their poor communication and persuasive skills and John’s
superior knowledge and skills lead to a very non-cohesive, disjointed unpleasant trading experience. Stephen appears to get frustrated at the two younger brothers at one point leaving the group for an extended period of time leading John to make disparaging remarks to both of them. The brothers also seem to have had poor experiences playing with each other. At one point, John offers to trade battle with Marshal but Marshal refuses because he always loses. All three of the brothers also vie only for the attention of Stephen, not of each other, overwhelming him forcing him to either ignore the other children or divide his attention.

Group E has a similar dynamic with the two brothers primarily vying for the attention of the third party, Tom. In Group E, George is also the preferred trading party for Tom. Despite his attempts, Tom refuses every trading attempt Frank makes. At one point, George is negotiating with Tom for cards that Frank wants and Frank begins a negotiation with George to get the card from him after he gains it from Tom. George, however, is much more charismatic than John in Group H. His persuasive skills are much less abrasive taking on an almost educational tone, using his superior knowledge to explain very compellingly why his cards are worth taking to both Tom and Frank. While the tenor of the relationship between Tom and George is positive, the tenor of the interactions involving Frank are quite combative regardless of with whom he was trading. When Tom rejects his offer after George makes commentary that the trade is stupid, Frank very accusingly says to Tom “You just always listen to him.” George and Frank also have a very strong relationship with their cards. They both collect certain kinds of
cards, playing the game in the way it is designed to be played, and meticulously keep their cards in various containers and decks.

In contrast, Group A, Group B and Group F had a very playful nature about them. In Group F, as has already been stated, the two brothers function as a team trading from one large pile of cards making no distinction between who they belong to. As is the tendency in the other groups with relatives, the trading occurs between one of the brothers and Oscar, never between the two brothers which makes sense given that they do not distinguish their cards from each other. When Milton is asked about it, he simply says it is more fun to have a big pile of cards than to keep separate piles. While Henry has a great deal of knowledge, indeed, Henry appears to be more expert than John by far, he does not appear to have superior knowledge to Oscar who is also quite well versed in Pokémon lore. Thus Henry gains no advantage from knowledge as Oscar is his equal. With Henry there, though, there is no opportunity for Oscar to take advantage of the much younger Milton, although it does not seem in Oscar’s nature to do so even if the opportunity were there. He is very easy going and not very possessive of his cards which contribute to making the trading experience pleasant. Angie describes Oscar’s relationship with the cards and his good nature:

*Angie:* A lot of it for Oscar depends on what his friends are interested in at the time. For him, it’s more about, it’s a social interaction. It's not messing with his cards when nobody else is here. Well, I mean I think that my understanding of Oscar's personality is he really, he wants to please people and so, you know, he likes it when his friends are excited with what he has. And it also, you know it kind of, it smooths a lot of those more difficult interactions in a way. Like they have this thing to focus on and everybody is doing the same thing and getting along and having a good time. (Parent)
The trading in Group A is similarly good natured amongst the three boys. However, there is tension that occurs in Group A involving Darren, yet both Cole and Ian are very generous and kind to him going to some trouble to include him and trade with him. Only Shane refuses to make conciliations to Darren over his unwillingness to conform to the group norms that he, Cole and Ian have established over many episodes of previous play and trading. He makes several mean statements and even hits him, although Darren does request to be hit. With the exceptions of the trades involving Darren, the trading is good natured although trades are not easily achieved.

In Group B, some tension arises from a fourth boy, John, who does not bring anything to trade. He offers some commentary. Most of the action of the trade occurs between Olin and Garland who trade bouncy balls for Pokémon cards, and Olin and Carter, who trade Pokémon cards. John mostly is a distraction during the observation hitting the other boys to gain their attention, asking repeatedly if they can do something else, expressing his boredom or stating that he is hungry. His distracting behavior does not seem to faze or distract too much from the other boys trading although they periodically engaged in horseplay in return. They trade until the majority of them are bored and stop although they generally were playful and amiable during the observation.

These differences in group dynamics played out in the productivity of the trading episode for the parties involved in terms of how many times exchanges occurred. The amount of time the overall trading observation lasted in seconds was divided by the number of exchange attempts to assess how protracted negotiations were over exchange attempts. Groups E and H, those with the poorest group cohesiveness, had the highest
seconds per exchange attempt numbers with 93 and 99 respectively. The next highest
seconds per exchange was Group A with 45 seconds per exchange attempt, likely due to
Darren’s resistance to trading away his cards. Groups B and F have 32 and 31 seconds
per exchange respectively. These numbers corroborate the impact that group dynamics
have on the trading process. The more competitive and hostile the group dynamic was in
a group the more protracted the process of trading became.

Socialization

While socialization occurs prior to the trading with the children as was described
in the antecedents of trading section, socialization and learning also occurs during the
trading process which addresses the remainder of research question 1. What kinds of
learning takes place? How do young children’s peers act as socialization agents in
trading? During trading, children’s peers actively teach them about a number of different
things such as the objects themselves, the normative rules of trading, and the
idiosyncratic preferences of others. In this long protracted negotiation between Darren
and Ian, several instances of socialization occur.

Ian: Him!! For empoleon.
Darren: Fine.
Ian: Thank you. No tradebacks.
Darren: Umm. Actually no.
Ian: You're ripping yourself off.
Cole: How?
Ian: This is a good trade. This guy's way better than him 140 120. 120 damage.
Shane: Just deal with it.
Cole: You don't even know. He only does 80. I read his description.
Ian: And this guys a world champ. This guy is like way better.
Cole: You like him better because he does (bends the card that makes a noise as
Darren is doing with his card)
Darren: Shiny, and and I like his noise.
Cole: Ian, does Mew 2 make noise? (he takes it and bends it) He's perfect. Here. (slaps the card on his head and tries to take the other card out of D's hands)
Darren: But empoleon is shiny.
Ian: Dude it doesn't matter about the shiny.
Shane: Yes it does.
Cole: Yes it does.
Darren: Shiny.
Shane: Yes, it does. Shiny is better.
Cole: Yes it does.
Ian: This guy is way better. Fine rip yourself.
(Shane and Cole leave because they are bored and more interaction between Darren and Ian occur.)
Darren: I'll trade Cole Absol for Palchia.
Ian: You can't do that.
Darren: Yes I can.
Ian: No you can't.

In this trading negotiation, Ian attempts to persuade Darren about the value of his card by highlighting aspects of the card on which he places value. Unfortunately, that does not coincide with what Darren finds of value. Nevertheless, this is a socialization attempt by Ian to educate Darren on what he finds of value. Third parties also enter the negotiation process. Notice that Cole observes Darren’s behavior and discerns that Darren is making his card, which he refuses to trade away, make a noise. He attempts to persuade Darren of the value of Ian’s card by seeing if it makes a similar noise. This instance of socialization demonstrates how Cole has learned Darren’s idiosyncratic preferences. When Darren mentions the shiny on the card as a justification for not being willing to trade it, Ian disagrees with shininess’ value. Both Cole and Shane, however, jump in to emphasize that the shininess does matter. In this manner, they teach Ian about the normative value of that particular card attribute. Later, after Cole and Ian have left, Darren attempts to take one of Cole’s cards without his knowledge or agreement. Ian
steps in to stop Darren and educate him about how he cannot break this *standard rule of trading*.

This group also illustrates the methods through which socialization occurs in trading. Ian educates Darren about the value of his offering through persuading him of the value of the card. In this instance, he was not successful but other children in other groups use this educational tactic successfully to persuade others of the value of their offering. Third party commentary provides yet another method through which socialization occurs as both Shane and Cole contribute towards educating about the objects and the idiosyncratic preferences of the parties actually involved in the transaction. Packaging also provides as a source of education. When Ian references the Pokémon card as a World Champ, he is speaking of limited edition cards. World Champ decks are copies of the decks of those players who win the world championship by playing the game designed to be played with Pokémon cards.

Learning also occurs through the observation of other children’s behaviors as well as their justifications for their actions. Children’s preferences are revealed mainly through rejections in observations. Rejections lead to comments about the reasons behind the rejection of another child’s object. Sometimes, the other child asks for the rationale, but most often it is simply not provided. In this way, throughout the trading, what a child values and does not value is revealed in the transaction illustrating the role that conflict serves in negotiation. Through conflict, much can be learned. Darren reveals his preferences in his explanations for his refusal to trade and Cole learned from these revelations and tried to use it to help Darren and Ian reach an agreement. However,
Darren does not. Throughout this observation, which lasted almost 50 minutes, Darren appears to be unable or unwilling to learn and adjust to the normative behavior of the group. As was highlighted earlier in discussing the importance of pre-existing relationships, Darren expresses a desire to go home but Cole’s mother tells him while he can stop trading, he cannot go home yet.

*Darren:* I know. But my… but no one wants to trade with me.
*Cole:* Davey. What do you have that you want to trade?
*Darren:* Ummm.
*Shane:* Well you're not exactly offering your level x's.
*Cole:* Well, we all trade levels x's that's tradition.

This exchange illustrates another important socialization topic, *group norms for trading*. Darren’s inability to learn the normative trading behavior of this group impedes his ability to be a part of the group. He understands this when later as Ian works hard to make a trade successful with Darren, he says “I’m outside. I know.” in response to Ian’s persuasive statement of “Oh my gosh, see Cole and Shane would have done this.” Being able to assess and adjust to group norms is an important skill to have in any social setting, but it seems particularly important to learn in a negotiation setting.

The influence of siblings, both positive and negative, on trading behavior was also directly observed as several trading observations included siblings. In one observation, a pair of brothers, Henry, aged 10, and Milton, age 7, traded with a third boy, Oscar who was eight. Rather than functioning as separate traders, these two brothers seemed to function as a team. Both would initiate and negotiate with Oscar individually. But whenever Milton was evaluating a trade, he would often turn to Henry and ask “Is this a good trade?” who would obligingly respond with a yea or nay to the trade. In this way
siblings can *advise and teach* each other about the goods and trading. In another group with four boys, three of whom were brothers ranging in age from five to nine, the interaction between siblings was anything but good-natured. While most of the trades in this group occur between the fourth boy and one of the brothers, one of the few trades between the brothers in this group ends badly illustrating that lessons learned are not always positive.

*John:* I like him. I like him.
*Teddy:* Okay. [A trade is made and they exchange cards]
*Teddy:* Because I already have someone who is twice as powerfuller. Ah, my first lightning type that I traded for... Wow, now I have two level X lightning types.
*John:* Hey Teddy, I'm really thankful for that Sawbuck because now it can actually heal 20 damage to itself. Plus it has 16 attack.
*Teddy:* I know.
*John:* How could you even trade that? It's like "I know"
*Teddy:* John, what does this sign stand for? John, what does this sign stand for?
*John:* What sign? It's just a weird sign.
*Teddy:* John. (whining) I totally don't think I should have traded this guy because this guy's really weak.
*John:* (laughs) Thank you so much for your Pokémon.
*Teddy:* I want my card back. (age 7)
*John:* Too late. (age 9)

Parents also report the learning of a number of higher level concepts that they believe children learn through their engagement in trading. Parent’s insights are corroborated in observations. In trading, children must learn to *express and justify their wishes* whether it is to request another child’s item or to refuse another’s request. They develop *listening skills* for not only verbal but also non-verbal communication. A critical part of listening to others is *being able to take the perspective of others* which in turn is a crucial ability children need to resolve conflict, another important skill child learn as a
part of trading. In order for a trade to occur, consensus must be present. Both children must have a valuation ratio greater than one. Sometimes this is easily achieved, sometimes not. Children must also learn how to accept and handle rejection of their offers and counteroffers and how to persist through the use of negotiation and persuasion skills. Developing and achieving conflict resolution skills enables children to engage in negotiation to resolve the conflict and achieve consensus in trading.

Children also learn about the basic interaction of exchange. Children learn about the roles of being a buyer and seller and the ins and outs of this specific kind of business transaction. As one mother puts it,

*Gail:* I can only imagine that its part of life skills. Almost like how young animals play fight. It seems like it. You kind of see them practicing these different roles. As the buyer and the seller and the interaction. So I don't know if that's what it actually is or not. But they take it pretty serious. I'm glad that they do it. It's pretty interesting to watch them….And I think they like the umm, the like business mindset. You know they like to feel like they're kind of like making an important decision on an exchange. You know, I hear lots of kind of like almost like a mild arrogance about like "Whether this is a good deal or not." It's almost like mini-trumpians like Donald Trump style tone. So I think they enjoy that. They enjoy having this thing that they can be like the boss of. Like Henry likes to referee it and know everything about it. And they like get this little like intensity going. You really get the sense that this is business. This is important business that's going on. (Parent)

Engaging in trading also enables children to learn about the concept of value and its relative nature. Every child has a different concept of value for these objects. Sometimes this concept is shared by others. The more similarly children view the value of these objects the greater they are able to achieve consensus. This idea of relative value then is central to being able to successfully trade with others. One must be able to either
understand another’s perspective of value. Below Blair verbalizes her ability to understand another’s perspective.

*Int:* Yeah, what about the sparkling. Do you like the sparkling ones?
*Blair:* Uhm (affirmative). But I don’t really like fairies.
*Int:* Is that why you were okay with giving away that fairy, that sparkling fairy?
*Blair:* Uhm (affirmative). And I thought she would like fairies and the sparkling one.
*Int:* Oh, so you were thinking about what Kate likes too?
*Blair:* Um (affirmative). (age 6)

Alternatively, if one does not use the other’s perspective of value, one must be able to convince others that their perspective of value is correct which points to the learning of persuasive skills through the act of trading.

*Trader’s Regret.* This example also points to another valuable lesson learned in trading from trader’s regret. Over and over again, parents and children report regret—feelings of sadness, repentance, or disappointment over something that has happened or been done—over trading away an object. In the following example, Vanesa discusses the lesson trading regret teaches their children when asked if they ever become involved in their children’s trading.

*Vanesa:* No never. I've never been involved. I just figure, hey, it is what it is. If you lost out then you've learned your lesson. And hopefully you won't do it next time. And hopefully he's gotten the bad end of the deal. And vice versa. I figure that all of us parents if we're letting them do this then we should let them do it. And I'm not going to get involved. (Parent)

Trading regret may also be about fairness of the deal. Regret may occur because they miss the object they traded away. But it may also be because they come to find that the value of the object they received was not worth the loss of their own object. Darren talks about how he gauges this feeling and why he wants tradebacks.
Darren: I just want to see what it's like to have that card. If it’s a good feeling to have that card, if I didn't like the other cards. Or maybe it’s not so good to have this card and I want to trade it back. (age 8)

Part of why Darren wants tradebacks is because he often feels this trader’s regret. Parents talk about how they learn as they age about dealing with regret. Alice discusses her son, Stephen (age 7) in the following and his learning process in trading.

Alice: I think it's interesting to see how, as he matures, the trading gets easier. I think. And there's not as many regrets. Now that he's growing up a little bit, he's able to sort of communicate better and make better choices as far as his trading. So that's interesting to see. Cause it's been like probably 3 years now that he's been doing it. So, it'll be interesting to see how as he matures even more to see how things change for him. But I think it's good for him and his friends to do that kind of thing. It's fun for them. You know. I think it's good for the most part. (Parent)

Thus, while they must learn how to persuade others, simultaneously, they are subjected to persuasion and negotiation attempts by others. The loss of a valued object is a lesson that serves to improve their child’s ability to first, understand the value an object has to oneself and then recognize that he or she need not give into another child’s demand. Therefore, children must learn how to resist persuasive attempts that do not serve to increase their own utility. Through the experience of trading, children come to recognize when they are being taken advantage of and how to counteract these attempts. Children learn how to assess the equity and fairness of a trade and more importantly, act on this sense.

**Study One Discussion**

These findings indicate a multifaceted model of trading where children acquire desired items and dispose of unwanted goods evaluating value and making deals. But
they do not do so in isolation. Their actions and behaviors are influenced by parents, siblings, peers and others like teachers and bus drivers who control where and when trading can occur. The characteristics of the goods themselves and thus the makers of these products also affect the trading by instantiating rarity and variety influencing the collectability of an object. Makers can also generate new and renewed interest by releasing new versions of these tradable goods.

Trading involves complex social interactions that illustrate how socio-cultural factors like schools and products created to be traded intermingle with socialization agents like parents and peers to influence to socialize children as consumers. Additionally, children’s existing knowledge, skills and abilities contribute to their enactment of trading with their siblings and peers. In doing so, they learn about the objects they trade, the concept of value, persuasion, negotiation, conflict resolution, group norms, barter/exchange, fairness and ethics, and ultimately, about each other.

From these findings emerges an expanded model that elaborates on what is known about children’s trading. First, the antecedents of children’s trading, which can be thought of as the area encompassed by the black box in
Figure 6, which shows the original model created from the literature on children’s trading, will be exposted.
Figure 6. Original Model of Children's Trading
Figure 7. A Model of the Antecedents of Trading
Figure 8. A Model of the Trading Process
Figure 7 presents a model of antecedents that occur prior to a child’s engagement in trading. Antecedents include a variety of direct and indirect forces that influence a child’s interest in and acquisition of tradable objects, his or her motivation and ability to trade. Major influencers include parents, siblings/other relatives and peers. Parents’ role in trading can be tenuous, as illustrated by dotted instead of solid lines in the figure, as they are not always aware of their children’s trading and therefore, may or may not have formulated an attitude toward their children’s trading. Even when they are aware of their child’s trading, they may not be aware of each exchange situation in which their child engages. When parents do intercede it tends to be when conflict or inequity are observed although generally such intervention occurs after the trading is over.

Parents, siblings and peers also influence a child’s interest in, acquisition of and relationship with objects and with trading. In turn, their influence on a child’s perspective of the object is related to the relationship between the children and these others. An admired older brother who collects, plays and trades Pokémon cards may be more influential in creating interest in both possessing and trading Pokémon cards than a disliked sibling. A child’s siblings and peers not only have to have objects to trade, but they too must be motivated to trade as some children do not trade interfering with the child’s ability to trade. Even if some children are motivated to trade, they must also be available at the right time and place, another antecedent in the model, in order for a child to have partners with whom to trade.

Having a place for the trading was not a complicated issue. A place to trade seemed to be almost anywhere children congregated and had time to engage in free play.
But in some of these places, barriers in the form of teachers, bus drivers and school policies may interfere with either the child’s ability to bring goods to trade or with allowing, or more accurately, forbidding trading to occur.

Traded objects also have accompanying marketing tactics ranging from advertising the toys to other branded toys (e.g., action figures) to fully developed media franchises with objects having accompanying movies and television shows. The relationship the child develops with the objects themselves also affects the child’s valuation of the objects affecting the trading. Even if a child has tradable goods, he or she must be motivated to trade through the desire for acquisition, disposition, sociality, play and fun.

Actions that occur during the trading process are also much more complex than initially depicted from the literature which was depicted within the dotted line black box in
Figure 6. Figure 8 attempts to depict pictorially the complexity of the actual trading process. A variety of goods can be used to match these desires for both parties. What one has to offer can be up for negotiation. A trading exchange may be as simple as one child, child A, asking another child, child B, if he is willing to trade objects A for object B. If child B assesses the utility of object A as greater than the utility of object B, an exchange of goods is made. If not, he may simply reject the request outright neither wanting what the other has or desiring to give away his own object. This simple, core model of the trading process is depicted in Figure 8 using solid lines.

Despite the core model’s implied simplicity, even this interaction can be quite complicated as Child A may offer her own object and request Child’s B’s object at the same time. Or she may request Child’s B’s object and once Child B agrees, offer her own object to Child B in return. Or she may offer her own object and then Child B may request an object of Child A’s in return. Other iterations of this scenario are possible which illustrate that the actions that occur during a trading attempt can be by either child at any given time in the process. If the valuation ratios of each child are aligned, and each finds the other’s object of greater utility than the object being given away, a trade occurs. If these ratios are not aligned, then either the trading attempt ends in no trade or they negotiate in an attempt to align the two children’s valuation ratio.

This process of negotiation, laced with offers and requests then counter-offers and counter-requests, are met with acceptance or rejection which may be additionally interwoven with persuasion tactics, inquiries and stipulations. The trading process between two children can become even more complex as other children add their
commentary, giving advice and opinion on the actions of the two children engaged in exchange. Others may even attempt to enter the fray desiring the objects being traded creating an even more complex process as a child must consider additional offers and requests from a third or fourth child.

Negotiation occurs in order to align the valuation ratio between the two children so that each finds the object they are receiving from the other of greater value than the object they are trading away. The object itself affects this process of value alignment. Simpler objects with less attributes that cause less points of differentiation in one’s inventory make it easier to align the ratio of both children. More complex, attribute laden objects are more difficult to align causing the need for more negotiation. A number of different attributes of the object increase value which can be categorized as either of a perceptual nature or a cognitive one which requires more in-depth understanding of the objects. Value of objects can also be derived from varying contexts which can be associated with the child him or herself, the object in terms of its place in a child’s inventory or value relative to other objects or in what can be done with the objects. Children’s valuation of these objects is also subject to influence through persuasion tactics of and stipulations placed by the other party as well as through the commentary made by the other children.

Valuation can also be thought of in terms of the child’s entire inventory with each object in their inventory arrayed along a value axis. Objects acquired through trade become a part of a child’s overall inventory of possessions. This inventory is relevant to a child’s valuation of the object. For example, a good may be well-liked and highly valued
but if she obtains another of its kind, the extra one is rendered tradable as it holds little to no value as a duplicate. In addition, the object itself and its makers influence the value of objects by instantiating it with attributes that hold appeal to other children, creating a variety of collectible items, and embedding scarcity or rarity into the entire inventory of goods available. Along this inventory value continuum is a “won’t trade” threshold. Objects with value above this threshold hold such great value to the child that they will refuse to trade it. Children’s “won’t trade” threshold seemed curiously fragile, however, with most admitting that they could be persuaded to trade a treasured object, if offered something of greater value making it seem like almost anything was up for trade.

Some objects also exist beneath another value threshold, the “can’t be traded” threshold where their value is so low that no one would want it such as is the case with a broken silly bandz. Objects relative value in relation to a child’s overall inventory of possessions points to a sense of overall value that the entire inventory contributes. When this perspective is taken, one can see the role that trading plays to increase the value of the child’s inventory as a whole. Not only can objects be acquired that add value by their addition to the child’s possessions, but disposition of unwanted, devalued goods can also contribute. Great pleasure can be derived from being able to acquire something desirable using something that is undesirable.

The children and their own traits and personalities and sense of fairness towards others combined with their pre-existing relationships with other children to create unique normative rules for trading and value that systematically changed the tone and tenor of the trading process. Some groups were easy going and pleasant whereas others were
filled with conflict and tension. These conflicted groups were characterized by the presence of a dominating child who had superior knowledge and/or skills and was opportunistic in his trading behavior acquiring goods he considered of high value trading away goods of considerably lower value.

These situations, however, while abhorrent, serve to teach children important lessons in fairness, equity, and value. Indeed, the amount of learning that takes place while trading is quite remarkable. Children learn concrete information about the objects they are trading, but also about more abstract concepts like relative value and scarcity. More importantly, they learn a number of important skills like basic communication and negotiation skills, how to be persuasive and how to resist persuasion attempts by others, how to handle rejection and how to resolve conflict. They also learn about the others involved in the exchange by being able to see another’s perspective and understand their preferences as well as be able to learn and understand the norms of a group. The knowledge and skills acquired during trading are essentially life skills which prepare them not only to function as economic agents, but also prepare them to function in life.

The purpose and meaning this activity has in the lives of children is also further illuminated. Children trade not only to acquire goods new to them, but also to dispose of goods no longer of value and therefore, trading can been seen as a method of inventory management for the children. Children themselves also point to learning as a motivation for trading. Previous study on children trading spoke of how goods involved in trading could be used to enforce or reinforce status and socio-economic power (Evaldsson 1993; Nukuga 2008; Thorne 2005). In contrast, rather than serving a role of differentiation, this
study finds that trading serves to reinforce association as an important purpose of trading is to facilitate sociality and play. Children find trading to be a fun activity to do with their friends. Trading, therefore, encourages and creates bonds of friendship.

While one of its primary purposes was sociality, trading can create status for children through the possession of rare goods. Children who had rare goods were given positive reinforcement for being in possession of such goods serving to provide those children a sense of elevated status within the group, although it did not do so in a way that seemed to separate children in the socio-economic sense of the haves and the have nots. Being in possession of rare goods gives power and status to a child as other children seek the attention of those possessors of rare goods hoping to obtain them through trade. While rare goods sometimes were placed above the “won’t trade” threshold, more often than not, children seemed willing to trade such goods which reinforced the sociality of the activity.

These two findings together, that children trade to increase association and sociality with their friends and to be able to obtain objects that set them apart through their ownership is a tension between being the same and being unique. In order for this activity to proliferate, children must share a common interest in the good, they must have the good, they must collect or accumulate enough of the good that there are items in their collection that they would be willing to give away, and items that others would desire. This commonality, this shared interest in this good, brings them together facilitating a special kind of play that is unlike any other form of play because in it, they walk away with a new-to-them possession. This commonality that brings children together is
balanced by the tension of seeking to be different by possessing “rare” goods. Having these items in common brings them closer to their peers, but having a unique, rare items sets them apart.

In this study, a model for understanding children’s trading is developed that integrates three major theoretical frameworks for understanding children as consumers. In doing so, this dissertation proposes that this integrated framework may be more broadly applicable for understanding children and their development in general. The value of this theoretical model is in how it might provide useful insight into other phenomenon of interest (Peter and Olson 1983). While demonstrating this insight empirically is beyond the scope of this dissertation, one can apply the insight gained in this study to developing further insight into another children’s phenomenon, the nag factor, which has been of great interest to marketers.

When children nag their parents for things that they want, actions similar to trading are involved. Similar antecedents and socialization factors serve as determinants of the parent-child interaction in this acquisition process. The process inferred from trading can be mapped onto the act of nagging. Here, the child must initiate a request for an object (e.g., a candy treat) to the parent who controls whether or not the object may be purchased. Arguably, an inventory assessment phase has occurred prior to the initiation, albeit a simple one as all that is necessary is that the child wants it but does not have one in possession. The parent must acknowledge and engage the child in this request. Without engagement, the request results in no acquisition.
The parent may also assess inventory to determine if the acquisition adds or takes away from the overall inventory of the household (e.g., plenty of candy is already present in the house). The parent must then assess the utility of the acquisition. Here the utility is thought of in the traditional way; what is the utility gained from the possession of the object over the cost of purchasing the object? In a simple nag request, if the parent assesses the utility of the object as greater than the cost, the purchase is made and the object purchased for the child (i.e., the utility of purchasing the candy and making the child happy is worth the $1 of cost); if the utility of the object is not greater than the cost, than no purchase is made (i.e., the utility of purchasing the candy and ruining the child’s appetite for dinner is not greater than the cost of $1).

While only one object need be the subject of the nag negotiation, another object may come into play if the parent assesses the original object’s valuation ratio as too high, but decides to offer another object that has a more acceptable utility to cost ratio (e.g., a piece of fruit). Now, the child must evaluate the substitute good in terms his or her own sense of its utility and accept or reject it in turn. If rejected, the child may proceed to make another request or engage in persuasion tactics (e.g., please!!). Stipulations may be placed by either party (e.g., child: I promise to be good. Or parent: I don’t want to hear anymore whining.). In this way, a parent and child may engage in a nag negotiation that may or may not result in an item being purchased.

Commentary of third parties may also come into play. These third parties may be other children, like siblings or other adults, like the other parent or other relatives. These third parties offer their opinion, advice and influence in the process. Say, for example, a
grandmother is present. She may say, “You shouldn’t encourage her sweet tooth.” In addition, analogous to getting in on a trade, another child may initiate his or her own nagging for objects (e.g., “I want one too!”).

Similarly, the antecedents of trading may play out in the enactment of nagging by children. The child’s existing traits such as their negotiation and persuasion ability affect their enactment of nagging. A child’s interest and relationship with the object request may be motivated by the marketing of the product and its use by others like peers, siblings and parents. The existing relationship between these others and the child may influence the child’s involvement with the product. Parents may also have conveyed a general attitude towards nagging from their children as well with some parents establishing a zero tolerance attitude (i.e., If you ask for it, you’re not getting it) or regular appeasement of their child’s nagging. These factors serve to motivate a child in the enactment of nagging. While other children need not be present, a parent needs to be present with the child in a place where nagging can be effective. That is, a child must accompany the parent to the store in order to nag effectively. Parental interviews in this study actually bear this out with parents reporting avoiding the nag factor by not bringing their children to the store.

In addition, the nature of the object that is being requested can alter and influence the process. Mangleberg (1990) found that children had greatest influence over products they used and were of less cost than over products used by the entire family and had high costs. Here, a child may have more success nagging to obtain an eraser which may have use in school than over a piece of candy. Lastly, one can also see where age and learning matter. Rust (1993) found age differences in their influence attempts with younger
children being very direct pointing to things they wanted or even grabbing things off the shelf whereas older children used more discussion and compromise. As children enact nagging, they learn from the interaction with their parents how to be more effective next time. And as was seen in the trading observations, those who do not learn, will not achieve success in nagging.

In summary, Study One establishes a model of children’s trading that provides a greater understanding of young, elementary-aged children’s engagement in consumption and exchange. In doing so, it informs how parents, peers and other socio-cultural factors interact to affect children’s enactment of trading and the learning that takes place. Of particular interest, is the dynamic relationship that occurs between those involved with children not only being affected by others, but in turn, influencing peers and parents. In particular, how peers serve as socialization agents at this young age, which has heretofore, been unstudied, is illuminated. The complex valuation process of objects and of barter is also explicated as is the process of achieving and aligning the valuation ratio between two parties through negotiation. Lastly, through trading, children learn knowledge and develop and enhance important life skills that prepare them not only for economic engagement but also for life.
CHAPTER 3: CHILDREN AND THEIR VALUATION OF TRADED OBJECTS

The Determination of Value

A central focus of this dissertation is the underlying valuation process of barter. Value in marketing is defined as the power of any good to command other goods in peaceful and voluntary exchange (American Marketing Association 2012). In barter, two goods must be evaluated, the good to be obtained from the other party and the good to be traded or given to the other party in exchange. When children trade, they are somehow determining the value of two objects. Previous studies of barter and children’s trading have described that children engaged in exchange make relative valuations of objects but none have made this valuation process a central focus of study (Evaldsson 1993; Faigenbaum 2005; Mishler 1979). Determining the value of an object in terms of other objects is a prerequisite ability to trading (Robbins 1947). While the determination of value and how it affects consumer choices has been extensively studied among adults, how children determine value and how they make decisions based on this determination has been identified as a gap in the literature, particularly for children between the ages of 6 and 11 (John 1999). Therefore, the major research question to be addressed in studies two and three is “How do children value and make tradeoffs regarding traded objects?”
Study One greatly informed the first half of this research question, in examining how children determine the value of a good. But how children make tradeoffs in their trading decision-making process was unable to be determined from observations and interviews. Tradeoffs were not voiced by the children during observations and children were unable to elaborate in interviews on their decision process. Study Two explicitly examines the tradeoffs children make in choosing a traded good.

In marketing and economic theory, the idea of value can be embodied in one’s utility for the product or service. Started by Jeremy Bentham, utility theory holds that the goal of every human action is to seek pleasure and to avoid pain and thus every object can be considered as having properties that produce pleasure or pain (Edwards 1954) or in other words, positive or negative utility. These properties then comprise the total utility of the object. The rational economic man seeks to maximize his utility; thus when faced with a choice alternative, people choose the option that leads to the greatest excess of positive over negative utility (Edwards 1954).

This dissertation explicates a model of trading by applying utility theory to determine children’s utility for the objects being traded. To reiterate, when one child makes a decision to trade, he or she must have determined that the total, aggregate utility of the object they own that they intend to trade away is less than the utility of the object to be obtained from another. This valuation ratio must be greater than one. In order to model this ratio, multi-attribute utility theory (MAUT) will be applied (Baron 2009; Lancaster 1963).
MAUT contends that the utility of an object can be decomposed into the utility of its attributes. Individual attributes contribute independently to some goal or sub goal of the decision process. As commonly traded goods vary across multiple attributes, children are making decisions about objects that vary simultaneously across multiple attributes forcing them to make tradeoff decisions. In order to model these tradeoffs, conjoint analysis is used.

Conjoint Analysis

Conjoint analysis’ is based on conjoint measurement which simultaneously measures the joint effects of two or more variables at the level of interval scales from rank-ordered data (Luce and Tukey 1964; Green and Rao 1971). Its use has been well-established in marketing with numerous articles on its use in the field (Cattin and Punj 1982; DeSarbo et al. 1995; Green and Krieger 1991; Wittink and Cattin 1989; Wittink et al. 1994) and in modeling and understanding consumer judgments, decisions and trade-offs related to important marketing variables like new product development (Chung and Rao 2003; Green et al. 1972; Green and Devita 1974; Green and Devita 1975; Green and Srinivasan 1978; Green et al. 1981; Griffin and Hauser 1993; Hauser and Shugan 1983; Iyengar and Jedidi 2012; Luo et al. 2007). Methodological issues concerning the implementation and design of conjoint analysis studies and the underlying statistical models and the issues involved has also been a central foci of study (Allenby and Ginter 1995; Allenby et al. 1995; Arora and Huber 2001; Bateson et al. 1987; Carmone et al. 1978; Cattin and Punj 1984; Green et al. 1981; Green 1984; Green and Krieger 1985; Haaijer et al. 1998; Lenk et al. 1996; Liechty et al. 2005).
**Different Methods/Models of Conjoint Analysis.** The technique itself has evolved over time. Initially, conjoint analysis used full-profile card-sort tasks which profiled products along a full list of potential attributes (Green and Rao 1971). Respondents were asked to sort a number of different profiles created using orthogonal design plans ranking them from best to worst. The importance of the attributes and the preferred levels of the attributes were then deduced statistically using ordinary least squares regression (Green and Rao 1971). In tackling a more difficult problem with more complex product features, Johnson (1974) advanced the technique by developing trade-off matrices where subjects were asked to compare profiles that only focused on trade-offs between two attributes at a time allowing for a larger number of attributes to be studied. Traditional conjoint studies typically ask respondents to rate profiles one at a time rating them on a likelihood of purchase scale.

As the popularity of conjoint analysis increased, so did the desire to expand the number of attributes and levels that could be examined (Green et al. 2001). In order to accommodate these choices, hybrid models for conjoint analysis were developed (Green et al. 1981; Green 1984). In hybrid models, data are collected on both the desirability and the importance of attribute levels first. Then based on these judgments, respondents evaluate a smaller subset of full profiles (Green et al. 2001). Green and Krieger (1996) then extended these hybrid models to allow for parameter estimation at the individual level.

These methods were criticized, however, as traditional conjoint analysis generally examined products entering a new market or a stable market where competitors are
treated as nonexistent or passive in their response to the new market entrant (Green et al. 2001). In order to be able to explicitly include active competitors, choice-based conjoint analysis was developed as it more accurately simulates the decision problem consumers face. In choice-based conjoint analysis, multinomial logit models are used to estimate preference parameters at the total sample level (Louviere and Woodworth 1983). Here respondents are shown a number of different profiles and asked to choose the profile they prefer to purchase which was a more realistic and natural task for respondents. In addition, choice-based conjoint analysis was better able to model interactions, availability effects and cross-elasticity’s and allowed for the inclusion of alternative specific attributes and multiple constant alternatives (Orme 2010). However, while a choice indicated a preference, it did not gauge the strength of the preference and therefore, not enough information was collected to model each respondent’s preferences. Thus preferences were modeled across groups of respondents. These aggregate models though were subject to a variety of limitations such as independence from irrelevant alternatives and latent subgroups which required more complicated models (Orme 2010).

The introduction of hierarchical Bayesian (HB) modeling of individual differences in choice models posed a solution to these problems enabling for the estimation of individual-level, part-worth estimations (Allenby and Ginter 1995; Allenby et al. 1995; Lenk et al. 1996). In HB conjoint analysis, data can be weighted such that when an individual’s parameters are self-consistent and different from the aggregated data, the individual’s data receives more weight in the estimation process of that person’s part-worths. However, when an individual’s part-worths have a large amount of error
from his or her own data, more weight is given to the aggregate data in estimating that individual’s part-worths.

**Rationale for Use of HB Conjoint Analysis.** In studies two and three, choice-based HB conjoint analysis is used for a number of reasons. First, choice-based conjoint (CBC) most closely simulates the reality of what occurs during trading. During trading, children are making a discrete choice between the object they own and the object offered to them in trade revealing their preference in their decision to trade or not. Therefore, CBC mimics the actual choice decision made by children. The second reason is that ratings-based conjoint analysis has a number of disadvantages. When using scales to rate a given profile of a good that varies on its attributes, respondents may interpret the scale used differently from each other. In addition, when children are shown a single profile, in this case, a trading card, they are not comparing that card to another’s card. When conjoint analysis is used for a product, the success of a product is influenced by not only their own effort but also by their competitors. Traditional conjoint is ill-suited for capturing the effects of competitors’ actions because they require respondents only make trade-offs between levels of attributes on a single profile, not to make tradeoffs between profiles (Raghavarao et al. 2011). This is of particular importance in modeling trading as a relative evaluation is made based on the availability of the other alternative, a major component that appears to underlie the mechanism of valuation in trading.
Hypothesis Development

The objective of Study Two is 1) to determine the contributions of trading card attributes and their levels in the determination of a child’s preference for traded objects, and 2) to explicate a model of children’s judgments in a decision that is similar to the trading choice decision. When one child makes a decision to trade, he or she must have determined that the utility of the object they own, $U_{to \ be \ traded}$, is less than the utility of the object to be obtained, $U_{to \ be \ obtained}$, from another. Thus the ratio, $U_{to \ be \ obtained} / U_{to \ be \ traded}$, must be greater than one. MAUT will be applied in order to model this ratio. As such, this research assumes that children are making decisions about objects based on their valuations of the underlying attributes of the object which are additive in forming the overall utility of the object.

Specifically developed to understand how respondents develop preferences for any type of object whether it be products, services or ideas, conjoint analysis deduces preference scores for attributes of objects through the analysis of their evaluation of object profiles composed of multiple conjoined attributes or features of the product, service or idea (Orme 2010). Conjoint analysis produces a set of part-worths, defined as the estimate of the overall preference or utility associated with each level of each factor or attribute used to define the product or service (Hair Jr. et al. 2006). The main interest in deriving these part-worths is in how they can be used to empirically investigate the valuation ratio.

The design for testing this contention is expanded upon subsequently in the Study Two design section. However, in order to explain the hypotheses, it is necessary to
explain the process through which the attributes of the focal object were determined. Study One findings informed this study as it was apparent from statements made by the children which characteristics they were using to base their trading decisions. In the case of trading cards, the attributes that seemed to be important to the children included the creature on the card, how aggressive or cute the creature was, the shininess of the card, the health points, the damage/attack points and the rarity of the card.

As was determined in the first study, these attributes could be separated into two different categories, those that were perceptually salient on the card such as the creature, its aggressiveness, and the presence of shininess and those that were cognitively salient like the health, damage and rarity of the card. The levels for each attribute were determined by examining Pokémon cards as an exemplar which lead to shininess (shiny or not), rarity (rare or not) and aggressiveness (aggressive or cute) having two levels each and health (100, 80, 60) and damage (20, 40, 60) having three levels. The creatures used in Pokémon, however, could have been unlimited. To make the number of possible combinations of the attributes reasonable, four different animal types (bird, dog, horse and rodent) were chosen that would appeal to both boys and girls. These creatures were then crossed with the animal’s aggressiveness level so that each creature had an aggressive version and a cute version for 8 different creatures overall.

The valuation ratio infers that if a child chooses one card over another that the value of the card chosen should be higher than the value of the card not chosen. Thus the valuation ratio when calculated should be greater than one. This study simply looks at preference decisions, but if found to be true, results could be extended to trading. That is,
when children trade, in order for them to trade, the card they are obtaining from another
must have greater value than the card they are trading away to create a similar valuation
ratio of greater than one. The difference in trading is that both children must come to this
conclusion in order for trading to occur. In this study, only the ratio of one party is
examined. But if the underlying valuation process contributes to the preference decision
in the manner proposed, through the valuation ratio, then the part-worth utilities should
reflect a ratio of greater than one and be predictive of the child’s preference. This premise
underlies the first hypothesis.

*Hypothesis 1*: The card calculated as having a greater overall utility based on
part-worth utility estimations of its attributes should predict a child’s choice in a
preference decision. That is, the card with the greater overall utility will be chosen
by a child over the card with less utility.

There is reason to believe however, that the part-worth valuations of the attributes
will systematically vary. Specifically, it is hypothesized that these valuations will vary by
age and by gender.

*Age’s Effect on Valuations*

Young children often rely on perceptual cues regardless of their correspondence
with underlying attributes, although children’s use of perceptual cues need not be non-
diagnostic (John and Sujan 1990). Perceptual attributes are those that are visually
dominant (John and Sujan 1990), such as shape or color. In the arena of categorization,
Melkman, Tversky and Baratz (1981) demonstrated that as children aged from four to
nine, children shifted bases for making an evaluation from using perceptual attributes—
such as the visually dominant characteristics of color and form—to group and cluster
objects to using conceptual attributes where objects shared the same taxonomic superordinate characteristics like clothing or food as they increased in age.

Saltz et.al. (1972) demonstrated young children grouping pictures of toy animals with real animals while older children grouped the toy animals separate from the real animals. Saltz et.al. (1972) assumed that younger children categorized in this way because of the perceptual similarity of the toy animals to the real ones. In addition, in an examination of the development of natural language concepts, Saltz, et al. (1972) found that younger children were heavily dependent on perceptual attributes in identifying concepts. John and Sujan (1990) similarly found that older children categorized products using underlying product cues more so than did young children with this increase monotonically increasing with age.

In addition, this dissertation contrasts children’s valuations to adults as a point of comparison. Zhang and Sood (2002) examined how children and adults evaluated brand extensions. They found that children, ages 11-12 tended to rely more on surface cues like brand name characteristics and less on deep cues like category similarity between the parent brand and the extension category than did adults. In a separate study, children also based their evaluation on the extension name’s linguistic characteristics (i.e., whether or not the extension rhymed with the parent brand name) rating rhyming names more favorably regardless of category similarity whereas adults consistently rated the extension based on category similarity. However, when they were cued to make similarity judgments, they evaluated near extensions more favorably than far extensions matching how adults evaluated the brands.
In trading cards, several aspects of the cards can be considered perceptually salient. Perceptually salient attributes include the picture of the creature on the card and the shiny treatment on the card that makes that part of the surface reflective of light. More complex attributes of the cards are features that convey some underlying function or quantitative aspect of the card which will be labeled as cognitively salient. In other words, these factors require more cognitive understanding of the product. In the case of trading cards, these attributes are those that require knowledge of how each particular card may function in the game for which the card was designed to be played. Functionally two attributes, the card’s health and the damage it can cause another creature, are examples of cognitively salient features for trading cards. Therefore, the following is hypothesized in Study Two:

**Hypothesis 2**: The valuations of the attributes, as measured by their part-worth estimations, that children use to make tradeoff decisions will vary by age. Younger children (ages 5-7) will value perceptually salient attributes like the card’s picture or shininess more than the underlying quantitative attributes like health and damage; older children (ages 8-12) valuations will exhibit a reverse effect. This trend of valuing the underlying quantitative attributes will be even greater among adults as compared to children, ages 8-12.

**Gender’s Effect on Valuations**

In addition, there is reason to believe that valuation of attributes will vary by gender. Girls’ and boys’ play differ qualitatively. Boys spend more time outdoors in active, physical play than girls (Cherney and London 2006; Harper and Sanders 1975) and choose to play with primarily masculine toys while girls choose feminine or neutral toys (Martin et al. 1995). The way boys and girls play and the games they play have also
been shown to differ with boys’ play and games demonstrating more complexity than girls (Lever 1978).

Lever (1976) used observations of kid’s play in schoolyards, semi-structured interviews, written questionnaires and diary records of how children spent their time to examine 181 fifth grade boys and girls. She found that like other studies boys played outside far more than girls. She also found that boys played in more age-heterogeneous groups, larger groups when they played in groups, and played more competitive games that lasted longer than girls. This difference in length of games was theorized to be due to 1) boys’ games requiring a higher complexity of skill requiring a longer time to master the skills and 2) boys being better at resolving disputes during games allowing the continuation of play. Girls could also be found to participate in boy’s games more so than boys could be found engaged in girl’s play. She also made a distinction between play and games defining play as a cooperative interaction, and games as a competitive interaction and concluded that “girls played more than boys while boys gamed more than girls. (Lever 1976). Boys were found to spend more time playing sports, watching television and playing computer games than girls (Cherney and London 2006)

Gender differences are also found in today’s games, in particular in video game play. Girls and young women seem to have less interest in digital games, play less frequently and for shorter durations when they do play, and have less knowledge about the games than do boys and young men (Brown et al. 1997; Cassell and Jenkins 1998; Lucas and Sherry 2004). Hartmann and Klimmt (2006) use conjoint analysis of fictional video games and demonstrate that girls’ dislike of video games derives from games lack
of meaningful social interaction, violent content and gender role stereotyping. An additional study also demonstrated that female respondents were not attracted to the competitive elements of the game.

How boys and girls are marketed to also demonstrates marked gender differences. Gender role stereotypes were found in toy commercials with boys being more likely to be portrayed playing outdoors and in competitive play than girls in commercials played on Nickelodeon (Kahlenberg and Hein 2010). Toys marketed on the Disney Store’s website also were clearly gender focused with distinct differences with boy-specific toys such as action figures, building toys, weapons and vehicles coming in bold colors and girl-specific toys like dolls, beauty and cosmetics, jewelry and domestic-specific toys coming in pastel colors (Auster and Mansbach 2012).

In addition, trading card games are products that are predominantly targeted to boys and men which may explain why the trading card industry is a market dominated by male customers (David-Marshall et al. 2009). In addition, trading card games are primarily male-focused. Nineteen trading card games were analyzed by the author coding the genders of the main characters of focus as well as the number of male versus female characters found in a common deck. Twelve of the nineteen trading card games (63%) had primarily male main characters and a predominance of male character cards over female. 95% of the games were also competitive role-playing games that were focused on fighting battles between players, a context typically thought of as targeting male players. Only one trading card set, Bella Sara, was female focused with the remainder being gender neutral.
Given these demonstrated gender differences in their forms of play, their marketing exposure and in the product line of trading cards, this dissertation proposes that these gender differences will be seen in the valuation of trading cards. Therefore, it is likely that gender differences may exist in the valuation of the attributes of the cards. Specifically, girls may have a tendency to focus on the perceptually salient attributes of the card that are not a focus for game play whereas boys will be more attuned to the underlying features related to the play of these cards in a competitive game. Therefore, the following is hypothesized:

**Hypothesis 3:** The valuations of the attributes, as measured by their part-worth, which children use to make tradeoff decisions will vary by gender with girls valuing perceptual attributes more than the underlying game-related attributes, and boys valuing underlying game-related attributes over perceptual attributes.

**Study Two**

In designing Study Two, a discrete choice experiment, several subsequent steps were taken. The first and perhaps most important is to define the focal object and the total utility of the object through the specification of determinant factors or attributes of the object that best differentiate between the objects. Trading cards are chosen because they are a good specifically created to be traded among children. Pokémon cards, introduced in 1999, are considered responsible for the mass commercialization of trading card games as it was the first trading card game to achieve worldwide success (David-Marshall et al. 2009). Trading cards also have great variation along several key attribute dimensions. These attributes can be valued on an objective basis in terms of how well they would do in the play of the game as well as by idiosyncratic preferences. These objective and
idiosyncratic criteria create a variation in the valuation of the product that is desirable when examining the process of valuation for barter. Objects that are too simple, where the objective criteria are obvious and uniform across people or where idiosyncratic preferences reign, will not shed much light on the process of valuation underlying barter.

As has been discussed, trading card attributes and attribute levels were selected through basic insight gained from Study One. Observations of children engaged in trading of these trading cards as well as results from interviews with the children and parents inform which attributes of trading cards are the most salient in the choice decisions children made during trading. Study One informs the number of levels feasible for inclusion as well. The more factors and levels of these factors included in the study, the higher the minimum number of stimuli needed to be included in the study. A general rule of thumb to be used in determining the minimum number of stimuli that must be evaluated by a respondent is the total number of levels across all factors minus the number of factors plus one (Hair Jr. et al. 2006). One must also take care to ensure the independence of factors. Just as occurs in regression, multicollinearity or correlation among attributes results in the inability to obtain reliable estimates (Hair Jr. et al. 2006).

In addition, two holdout fixed profiles were included to test the predictive validity of the model shown. Since a randomized computer-generated design was used, holdout choice sets allow for the same choice sets to be given to all respondents as these are fixed for each respondent. Once estimation procedures develop utility scores, these holdout choices can be tested to see if the utility scores calculated accurately would predict the choice made by respondents in each of the holdout tasks and test Hypothesis 1.
The number of choice tasks to give the children is not a concrete specification. It is a complex interplay of the profiles specified, the number of attributes, the number of levels of the attributes, the sample size, the number of profiles shown in each choice set and the effects (main and interactions) being considered for analysis. To simplify matters, general rules of thumb were developed based on a study by Johnson and Orme (1996) who examined approximately twenty commercial choice-based conjoint data sets in order to examine the trade-off between asking subjects to make more preference decisions and having more subjects in the study. Their simulation results indicated that having each respondent complete ten tasks is about as good at reducing error as having ten times as many respondents. Thus they recommend the following formula as a general guide for determining study design features for aggregate-level full-profile choice-based conjoint modeling:

\[
\frac{nta}{c} \geq 500
\]  

(4)

where \( n \) is the number of respondents, \( t \) is the number of choice tasks, \( a \) is the number of alternatives per task, and \( c \) is the number of analysis cells which when considering main effects is equal to the largest number of levels for any one attribute. Estimates would be more efficient if the above ratio was greater than or equal to 1,000 (Johnson and Orme 1996). Thus with \( n = 175 \) respondents, \( a = 2 \) alternatives per choice task, and \( c = 4 \) number of levels for any one attribute, the minimum number of choice tasks, \( t \), should be 11.

However, the more choice tasks used the more efficiency could be derived in the study. Through pretesting, it was determined that 16 total tasks was not fatiguing to
children as young as 5. Recall, however, that two tasks are holdout tasks, and therefore only 14 of the 16 tasks are used for estimation. Using the advanced design module in the SSI Web conjoint analysis software, design efficiency was simulated where the parameters of the study design were altered to assess design efficiency and tradeoffs between number of respondents and the number of tasks. Simulation for 11 random tasks yielded standard error rates for logit estimations under .05 for all attribute estimations which is acceptable. The model strength reported was 919.83. A separate simulation using 14 random tasks improved standard errors and also reported model strength at 1172.32. The D-efficiency, the ratio of the strengths of the design, was calculated as 127.45 which can be interpreted as increasing the efficiency of the design by 27%. These results combined with pretesting suggested that 16 choice tasks was desirable.

Respondents received two profiles of trading cards in each of the 16 choice tasks. In many conjoint experiments, respondents receive multiple profiles (i.e., three or more) from which they must choose. In Study Two, the choice set is limited to two choices for two reasons. First, two choices most mimics the act of trading where the child compares the card owned to the card being offered in trade in making the decision to trade. Thus a two-alternative choice set is most realistic for modeling trading. Secondly, the choice set is limited due to the ages of the children involved. Study Two includes children ages five to twelve, those children thought to engage in trading the most frequently (Webley and Lea 1993) as well as an adult sample for comparison. Younger children, ages five to seven, have the basic verbal skills necessary to engage in a survey but questions should
be kept as simple and as clear as possible (Borgers et al. 2000). Thus keeping the discrete choice set to two choices keeps the choice task as simple as possible for the children.

The child’s preference function is defined as follows. Consider a random utility choice model for a conjoint choice experiment with $N$ individuals and $L$ choice sets with $I$ alternatives each. The utility of individual $n$ for profile $i$ in choice set $l$ is defined as:

$$U_n(x_{li}) = (x_{li}'\beta_n) + \varepsilon_{nli}$$ (1)

Therefore the conjoint model is based on a logit formulation as follows:

$$P_{nli} = \frac{e^{x_{nli}'\beta_n}}{\sum e^{x_{nml}'\beta_n}}$$ (2)

Where $P_{nli}$ is the probability that person $n$ chooses alternative $i$ (out of the $l$th choice set whose elements are indexed by $m$), $x_{nli}'$ is a $p \times 1$ vector containing the description of the $i$ profile in the $l$th choice set seen by person $n$, $\beta_n$ is a $p \times 1$ vector of importance weights (Moore 2004). In addition, the underlying composition rule for the conjoint model specified here is the additive model. This model assumes that respondents simply add the values for each attribute to obtain a total overall utility for a combination of attributes (Krantz and Tversky 1971). Typically, the additive model accounts for the majority of the variation in preference models (Hair Jr. et al. 2006). In addition to specifying the relationship between the factors or attributes in contributing to the overall utility calculation, a relationship must be specified among the levels of each attribute.

Specification can follow a linear model, quadratic form or the part-worth form where separate estimates are provided for each level. As there is no prior research or conceptual models to dictate the types of relationship of these levels in trading cards, this study will
approach this determination empirically where a part-worth model is estimated then examined visually to detect whether a linear or quadratic form is appropriate (Green and Srinivasan 1978). Estimations can then be re-specified based on this data.

\[ s_j = \sum_{p=1}^{t} f_p (y_{jp}) \]  

(3)

Where \( f_p \) is the function denoting the part worth of different levels of \( y_{jp} \) for the \( p \)th attribute.

Data collection utilized the full-profile presentation where every profile has every factor represented. In the case of trading cards, it would be unrealistic to the children to use partial profiles where only certain profiles had certain attributes on them. Children make trading decisions based on trading cards with complex information on it so presenting a full profile card should more accurately depict the situation. In summary, conjoint choice sets consisted of two full-profile trading cards without a no-choice option. The study design was generated using a randomized computer-generated design that accounts for minimal overall, level balance and orthogonality (Huber and Zwerina 1996). In addition, to increase the efficiency of the design, 25 different versions of the 16 choice task set were generated and randomly presented.

**Study Design**

Study Two has a 2 (Gender: Male and Female) x 3 (Age Category: Under 8, 8 to 12 and adult) between subjects design with both factors as blocking factors.

**Dependent variables**

The dependent variables used are importance variables for the six attributes upon which the cards were designed. Importance variables allow for the determination of the
relative importance an attribute has in a person’s overall preference decision. It is calculated per respondent by dividing the range of each attribute’s part-worth levels by the summation of the ranges for each attribute’s part-worths. As it is a ratio, the importance variables across the attributes sum to 100. The basis for one’s preference decision then can be inferred by how high each attribute’s importance is. Given the way importance variables are calculated, all variables were used simultaneously in the analysis as their derivation causes a high degree of correlation.

The six attributes include the perceptually salient attributes of animal type, animal aggressiveness and shininess and the cognitively salient attributes of health, damage and rarity. As was stated earlier, each attribute then is also broken into several levels as would be depicted on actual trading cards.

Covariates

Several covariates were included to help characterize respondents and develop more accurate estimations. A battery of questions was asked to assess a number of covariates that might influence the valuation process of cards. To accommodate the young ages of some of the children involved in the study, many questions have been separated into two stages of responses in order to simplify the number of response choices provided to each child (Borgers et al. 2000). Thus many questions are first asked in such a way as to elicit a yes or no response. Based on that response, they are then given a subset of the scale that will ultimately be used as the covariate measure. See Appendix C for complete set of covariate measures.
In addition, parents were asked about birthdates of the children, their ownership of these objects and a general question to assess any presence of disability or other special need in the child. The presence of a special need such as Asperger’s or attention-deficit disorder may hamper a child’s ability to answer the questions properly. In addition, participation in the free school lunch program was asked to determine the socio-economic status of the child’s family as a potential source of additional variability. See Appendix D for parent questionnaire of covariate measures.

Prior Knowledge, the degree of expertise acquired as a function of the domain-specific knowledge acquired through experience (Wood and Lynch Jr. 2002), has been found to influence a variety of aspects of consumer judgments. Brucks (1985) found that prior knowledge facilitated the acquisition of new information and increased search efficiency. Park and Lessig (1981) found an inverted-U relationship between familiarity and the type of information used in product evaluations with low and high familiarity relying on nonfunctional attributes like price over functional attributes and moderately familiar consumers relying on functional attributes more in their product evaluations. In their examination of the price quality relationship, Rao and Monroe (1988) found a similar effect with low familiarity participants using extrinsic attributes like price more as a quality indicator than intrinsic and moderately familiar participants using the reverse. Their predictions differed, however, for those highly familiar with the product using either price or intrinsic attributes to judge quality depending on the diagnosticity of the extrinsic situation. Thus, if a product was known to have a positive price-quality relationship, the highly familiar consumers rely on price; but when the association
between price and quality was weak, high familiarity consumers rely on intrinsic attributes. Usage experience, past and continued usage of a product, also results in a certain type of knowledge (Raju et al. 1995).

Thus knowledge of, and experience with, trading card games and with the act of trading is expected to cause variation in the valuations of the attributes. To assess subjective knowledge of trading cards, the following question was asked: “How much would you say you know about trading cards like Pokémon cards?” (A lot, Some, A little, Hardly anything at all, Nothing at all). To assess experience with trading cards, the following questions were asked: “Do you have any trading cards like Pokémon cards?” (Yes, No), “If yes, what kinds of cards do you have?” open ended response, “How many cards of ‘card brand’ would you say you have?” open ended response, “Do you play with your cards?” (Yes, No), “If yes, how often would you say you play with your cards?” (every day, several times a week, once a week, several times a month, once a month, less than once a month), “Do you trade your trading cards with other kids?” (Yes, No), “How often do you trade your trading cards with other kids?” (every day, several times a week, once a week, several times a month, once a month, less than once a month), “Do you trade other toys besides trading cards or other things/items with other children?” (Yes, No), “If yes, how often do you trade other toys or other things with other children?” (every day, several times a week, once a week, several times a month, once a month, less than once a month).

**Attitudes**, the general and enduring favorable or unfavorable feeling about an object or issue, have been shown to affect purchase intention and behavior (Cacioppo et
al. 1981). Thus attitudes toward the product may influence a child’s valuation of the attributes of that product. More importantly, if a child has an unfavorable attitude toward trading card, they may not be invested in the choice task and make choices at random as they dislike the product. Therefore attitudes are measured with two measures as follows:

“Do you like trading cards like Pokémon cards?” (Yes, No), “By yes, how much would you say you like them?” (A lot, some, a little), “By no, do you mean, you don’t like them hardly at all or not at all?” (Hardly at all, not at all), “Do you like playing with your trading cards?” (Yes, No), “By yes, how much would you say you like to play with them?” (A lot, some, a little), “By no, do you mean, you don’t like them hardly at all or not at all?” (Hardly at all, not at all).

Stimulus Creation

The stimuli for studies two and three were created specifically for this study. Manipulating existing Pokémon cards was considered but presented numerous problems. First, real Pokémon cards contain too many attributes for a simple analysis, not all of which are salient to many children. In addition, many of the attributes on real cards are correlated and thus fail to meet the need for independence among the attributes. It would be impossible to have reliable estimations with so many attributes that are related in a variety of ways on a card. It was also anticipated that some of the children included in the study would be highly familiar with existing Pokémon cards or own identical or very similar cards which would interfere with the part-worth estimations as they may have developed a particular affinity or aversion to specific kinds of cards. While children will develop a preference for certain cards over others, these preferences will be constructed
as a part of the study on an equivalent basis between subjects rather than having some subjects having a long history with existing cards with others not having any. Thus cards were created based on the factors determined to be of importance in trading card games. See Figure 9 for examples of the stimulus.

As can be seen from Figure 9, the cards were created along six major attributes that were determined to be of importance to children in Study One. These attributes included the type of animal, the aggressiveness or cuteness of the animal, the health points, the damage points, the presence of a shiny holographic quality and the rarity of the card. The levels of the damage and health points were determined by assessing actual Pokémon cards and determining that while more continuous than what we created, generally children thought of the points as high, medium or low. While the aggressiveness of the creature could vary greatly, since this was a subjective quality, we instantiated this attribute at two levels, to be cute or aggressive looking. For shininess and rareness we simply had these either have the quality or not. In terms of the types of creatures used, in order to keep the attribute levels easily analyzable we selected 4 creatures (i.e., bird, dog, horse and rodent) that were thought to be appealing to both males and females.

Pretest of Stimulus

The stimulus material was pretested with ten children to determine its validity and acceptability as trading cards. It was critical for children to accept the stimulus as realistic such that their evaluations of their preferences are realistic. If children do not like or do not accept the stimulus as representative of real trading cards, the preferences they report
Figure 9. Study 2 Trading Cards Stimulus Examples
will not accurately depict their valuations of the attributes. Children’s response to the stimulus was enthusiastically positive indicating that they found the trading card stimulus realistic and valid. In fact, many children shown the stimulus requested to keep the trading cards. While this was not allowed, it indicates the success with which the stimulus emulated real trading card products.

**Participant Recruitment**

In Study Two, organizations with access to children were approached and asked for their cooperation in the study. Organizations approached include child care centers, after school programs and day camp facilities. Three summer day camps in two different cities agreed to allow data collection to take place at their sites.

**Procedure**

First, parental consent forms were distributed to all parents of children in a cooperating organization. Once parental consent was obtained, children were interviewed one-on-one to facilitate understanding of the survey and task instructions. When a child was first engaged, the researcher initiated small talk to make the child as comfortable as possible. Then the researcher explained the study and informed assent was obtained. The children were told that they may stop at any time and that they may ask for clarification if they found any questions confusing. Then easy to answer questions regarding demographics like age and grade, ownership of cards, trading activity, attitudes towards and knowledge of trading cards were asked. Questions were asked to the child verbally with responses provided verbally as well as on written response cards used to give children a visual tool for answering the question. Response cards had both text and a
graphical representation (i.e., lots of dots for “a lot,” no dots for “never”) in case children had difficulty reading. Responses were recorded in a computerized survey. Then the child was asked to make preference choices between two full-profile trading cards shown to them on a computer screen. Children were instructed to choose the card they preferred and would rather own if they could own the card. That is, children were asked to base their decision on their preferences as in this study, no trading context was instantiated. Lastly, children were thanked for their time allowed to choose a bouncy ball and given a $10 gift card to Wal-Mart.

In the adult sample, college students were recruited from online classes and given extra credit for their participation. They took the same survey format and were subjected to the same choice-based conjoint task design. Question answers were also modified so as to not reflect the two-stage answering process used with children.

**Pretest of Study 2**

Study 2 was pretested with 15 to 20 children. The importance in pretesting is in determining how well understood the task, directions and questions are to children ages five to twelve. The ability to read and understand verbal instruction and questions varies greatly between the ages of five and twelve, the target age groups for inclusion in this study. Thus questions and tasks must be constructed in such a way that all of the children in the age target can understand the task.
Study Two Results

Sample

The total number of respondents surveyed was 354 who ranged in age from 5 to 49 years old. 163 were male and 187 were female. In order to analyze the hypotheses, respondents were categorized into developmentally appropriate groups (John 1999), under 8, 8 to 12 years old and 18 and over. 66 participants were under the age of 8 ($M = 6.5; SD = .64$) with 29 males and 37 females; 109 were between the ages of 8 and 12 ($M = 9.6; SD = 1.25$) with 68 males and 41 females; 175 were 18 and over ($M = 21; SD = 3.15$) with 66 males and 109 females.

Estimation and Analysis

Several levels of analysis were conducted. At the group level, counts analysis was conducted using Sawtooth Software in order to assess the face validity of the part-worth estimations calculated by conjoint analysis. Then hierarchical Bayesian estimation of utility scores was analyzed to include model fit. Holdout tasks were analyzed to test for Hypothesis 1. Then using calculated attribute importance variables, a two-factor MANOVA was run to test Hypotheses Two and Three. Then a cluster analysis was conducted using individual-level utility scores to further test for support of the hypotheses. Finally, repeated measures ANOVA was conducted to examine differences within attribute levels.

Counts. In counts, a proportion for each level of each attribute is calculated based on how many times a concept including that level has been chosen, divided by the
number of times the level occurred during the study (Sawtooth Software 2008). The count numbers then can roughly be construed as the percentage of time the attribute level was chosen as compared to the amount of time it was made available in the choice task. The $\chi^2$ then evaluated whether or not a difference existed within these choice percentages. As can be seen in Table 2, the types of creatures show little difference in the number of times chosen between bird, dog and horse. But there is a significant difference amongst the attribute levels of being chosen ($\chi^2 (3, n = 5354) = 24.22, p < .01$) which must be accounted for by the rodent being chosen significantly less often with a choice of .44. Other attributes levels were chosen as would be expected. For example, one would expect that for both health and damage that the higher levels would be chosen more than

Table 2. Counts for Aggregate Data for Study Two (n = 354)

<table>
<thead>
<tr>
<th>Attribute Levels</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Type</td>
<td></td>
</tr>
<tr>
<td>Bird</td>
<td>0.52</td>
</tr>
<tr>
<td>Dog</td>
<td>0.53</td>
</tr>
<tr>
<td>Horse</td>
<td>0.51</td>
</tr>
<tr>
<td>Rodent</td>
<td>0.44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal Type</th>
<th>Aggression</th>
<th>Shininess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird</td>
<td>Cute</td>
<td>Shiny</td>
</tr>
<tr>
<td>Dog</td>
<td>Aggressive</td>
<td>Not Shiny</td>
</tr>
<tr>
<td>Horse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rodent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Within Attribute $\chi^2$

- 24.22*  
- 47.78*  
- 6.08*

$df$

- 3
- 1
- 1

<table>
<thead>
<tr>
<th>Attribute Levels</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td></td>
</tr>
<tr>
<td>Damage</td>
<td></td>
</tr>
<tr>
<td>Rarity</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute Levels</th>
<th>Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0.59</td>
</tr>
<tr>
<td>80</td>
<td>0.50</td>
</tr>
<tr>
<td>60</td>
<td>0.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health</th>
<th>Damage</th>
<th>Rarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.59</td>
<td>0.61</td>
<td>Rare</td>
</tr>
<tr>
<td>0.50</td>
<td>0.50</td>
<td>Not Rare</td>
</tr>
<tr>
<td>0.41</td>
<td>0.39</td>
<td>Not Rare</td>
</tr>
</tbody>
</table>

Within Attribute $\chi^2$

- 97.74*  
- 158.89*  
- 222.67*

$df$

- 2
- 2
- 1

*p < .01
the lower levels and we see that the percentage of times chosen as compared to the number of times the choice was made available goes up as the number of points increases. One would also expect that cards with shininess and rarity would be chosen more often than those without shininess and rarity. Therefore as a group, these results indicate that participants are responding in a rationale fashion. Joint effects, where attributes’ effects are calculated with another attribute were also analyzed to determine if any systematic relationship occurs. Interestingly, only one significant relationship occurred. A significant relationship was found between damage and rarity ($\chi^2 (3, n = 354) = 14.50, p < .01$).

Overall, it can be seen in Figure 10, that rarity was chosen more often and that this related to damage in a parallel way such that the utilities increase in a very similar fashion. While rarity with high damage clearly dominates, it is interesting to note that

Figure 10. Count Relationship between Damage and Rarity
rarity combined with the lowest level of damage of 20, is exactly equivalent in how often it is chosen when it is presented to a card without rarity but with the highest level of damage. These results give some indication of the value of the tradeoff between rarity and damage. That is, rarity seems to have an approximately 0.2 boost in how often it is chosen when considering the damage on a card.

Hierarchical Bayesian Estimation. Next, hierarchical Bayesian (HB) estimation was implemented. HB provides for the ability to estimate individual part-worths given only a few choices made by each individual. This is achieved through an iterative process of “borrowing” information from population information such as means and covariances describing the preferences of other respondents in the subset. Covariates can also be utilized to enhance HB estimations in that covariates map respondents to characteristic-specific locations within the population distribution. When predictive of respondent preferences, use of covariates leads to Bayesian shrinkage of part-worth estimates toward locations in the population distribution that represent a larger density of similar respondents. This adds new information to the model that was unavailable through the choice data alone improving the quality and predictive ability of the estimations.

In HB, there are two levels of estimation. At the higher level, it is assumed that individuals’ part-worths are described by a multivariate normal distribution,

\[ \beta_i \sim Normal(\alpha, D) \quad (3) \]

where \( \beta_i \) is a vector of part-worths for individual \( i \), \( \alpha \) is a vector of means of the distribution of individual’s part-worths, and \( D \) is a matrix of variances and covariances of the distribution of part-worths across individuals at the individual level. Choices at the
individual level are specified using a multinomial logit model, although in this study, participants are making a dichotomous choice and thus a logit model (see equation 1) will be used. (Sawtooth Software 2009)

Next in HB estimation, the Monte Carlo Markov Chain procedure is used where an iterative estimation of the parameters is conducted where the estimate of $\beta$, $\alpha$ and $D$ in each iteration are determined from those of the previous iteration by a constant set of probabilistic transition rules. Initially, $\beta$, $\alpha$ and $D$ are set to zero then using that estimate of the betas and $D$, a new estimate of $\alpha$ is generated. $\alpha$ is assumed to be distributed normally with mean equal to the average of the betas and covariance matrix equal to $D$ divided by the number of respondents then a new estimation of $\alpha$ is drawn from the distribution. Then using present estimates of the betas and $\alpha$, a new estimate of $D$ is drawn from the inverse Wishart distribution. Then using present estimates of $\alpha$ and $D$, new estimates of $\beta$ are generated. The Metropolis Hastings algorithm procedure is used to draw the betas and successive draws result in better and better fit of the model to the data and convergence is achieved (Sawtooth Software 2009).

**Model Fit.** These utility scores allow for part-worth estimations that are valid at the individual level. Thus part-worth scores for each subject was input into the respondent database. The fit of the logit model estimated can be evaluated using two statistics derived from the likelihood data. The probability of each respondent choosing as he/she did on each task is calculated by applying a logit model using current estimates of each respondent’s part worths. The likelihood is the product of those probabilities, over all respondents and tasks. The log of this likelihood is then taken. The percent
certainty indicates how much better the solution is than chance, as compared to a “perfect” solution (Hauser 1978). It is equal to the difference between the final log likelihood and the log likelihood of a chance model, divided by the negative of the log likelihood for a chance model. The percent certainty will vary between zero and one, with a value of zero meaning that the model fits the data by chance, and a value of one indicating a perfect fit. The percent certainty reported for Study Two was 0.643.

Another assessment of fit is the root likelihood (RLH). RLH is the geometric mean of the predicted probabilities. The RLH is computed by taking the nth root of the likelihood, where n is the total number of choices made by all respondents in all tasks (354 respondents x 16 choice tasks = 5,664). If there were k alternatives in each choice task and no information about part worths, it would be predicted that each alternative would be chosen with probability 1/k, and the corresponding RLH would also be 1/k. In Study Two, respondents were presented with two alternatives; therefore, k = 2 and RLH would be predicted to be 0.50 without knowing any information about individual’s part-worths. The overall RLH reported for Study Two was 0.781. To test for significance, a one-sample t-test was conducted using the average RLH reported for respondents (M = 795.46, SD = 108.89), which approximates the overall RLH reported at the group level, against the test value of 500 and found it to be significantly different (t(353) = 51.05, p < .001). Based on the percent certainty statistics and the RLH values, the fit of the model developed through the HB estimation is good.

**Hypothesis Testing.** To test Hypothesis 1, the predictive ability of these estimations was tested on two holdout choice tasks. First, the sum of the part-worth
estimate found for each attribute level in the card profiles in each holdout choice set was calculated. The card with the greater total utility should predict the actual choice made. If the card predicted matched the card actually chosen by the respondent, the hold out task was coded as 1 with lack of match coded as 0. For the first hold out task, the card with the higher total utility predicted the actual choice for 75.4% of respondents. In the second hold out task, the choice with the higher utility calculation predicted the actual choice for 59.3%. The ability to predict the holdout tasks in this study approximated or exceed the prediction of holdout tasks reported in other conjoint analysis studies (Luo et al. 2007; Papies et al. 2011). In addition, as there were only two cards to choose from, if a child chose purely at random, then the predictive ability of the estimations would still have a probability of 50% of predicting the choice. Both holdout tasks had predictive ability that were greater than chance.

More importantly, these results provide support for the valuation ratio. The card chosen should have a higher overall value to the child than the card not chosen. When the part-worth estimations are predictive of the choice, then it demonstrates that the valuation ratio is greater than one as the card chosen has a higher overall utility score than the card not chosen. However, while very predictive, especially in the case of the first holdout task, it was not 100% predictive. This lack of prediction may be accounted for by error, which exists in any statistical estimation, and/or some other unaccounted for factor in the decision-making process.

To test Hypotheses 2 and 3, the importance of each attribute was calculated per respondent by dividing the range of each attribute’s part-worth levels by the summation
of the ranges for each attribute’s part-worths. A test for normality was conducted on each attribute importance variable which found significant non-normality in the data for every attribute to include the presence of positive skewness and the presence of outliers. To correct for non-normality, each attribute importance variable was transformed by taking its natural logarithm. A MANOVA was then conducted using the six logged attribute importance variables as dependent variables and gender and age category (under 8, 8 to 12, 18 and over) as independent variables. A significant multivariate effect for the attribute importance variables as a group in relation to gender (male versus female: Pillai’s Trace = .06, $F = 3.48$, $df = (6, 339)$, $p < .001$) and age category (under 8, 8 to 12, 18 and over: Pillai’s Trace = .19, $F = 5.86$, $df = (12, 680)$, $p < .001$) was found. The interaction between gender and age category was non-significant. No covariates were found to be significant so they were excluded from the analysis.

The hypotheses make distinctions between perceptually salient attributes and cognitively salient attributes. In the construction of the stimulus, perceptually salient attributes include the picture of the creature which is captured in the creature’s animal

---

3 The part-worth utilities used were zero-centered within each attribute for each person because the raw part-worth utilities are confounded by scale. The absolute size of the parameters (with respect to zero) is directly related to the amount of noise at the individual level. When a person’s choices are very predictive, the generated part-worths have a much larger “scale.” That is, a respondent with a part-worth of 1 for a particular level may not have the same relative preference as another respondent that also has a part-worth estimate of 1 for that same level. This scale factor expansion or contraction of all part-worths with respect to zero confounds our ability to make direct comparisons between respondents. Normalized part-worth utilities, which factor our scale, are thus more reflective of people’s relative preferences and more comparable between respondents. Sawtooth Software calculates these part-worths as Diffs. Diffs is a procedure for scaling that set the worst level of each attribute to zero, then scaled the data such that the differences between best and worst levels, when summed across all attributes, was equal to 1000 for each respondent. Zero-centered diffs are calculated by first, subtracting the mean utility (for a specific attribute and for an individual respondent) from each level which zero-centers all attributes for all respondents. Then for each respondent, all part-worths are multiplied by a constant such that the resulting sums of differences between best and worst levels across all attributes equal the number of attributes x 100.
type, the creature’s appearance of aggressiveness and the presence of shininess in the card. Cognitively salient attributes—those that require a more in-depth understanding of the trading card—include the health and damage points as well as the rarity of the card.

Table 3. Significant Univariate Effects for Age Category

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>df</th>
<th>df error</th>
<th>$F$</th>
<th>Age Category</th>
<th>Means (SD) Attribute Importance$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Type***</td>
<td>2</td>
<td>344</td>
<td>22.34</td>
<td>Under 8</td>
<td>24.10 (10.39)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>24.10 (10.39)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>24.10 (10.39)</td>
</tr>
<tr>
<td>Animal Aggressiveness**</td>
<td>2</td>
<td>344</td>
<td>6.05</td>
<td>Under 8</td>
<td>23.80 (18.61)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>15.09 (13.54)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>18.78 (19.76)</td>
</tr>
<tr>
<td>Shininess</td>
<td>2</td>
<td>344</td>
<td>.194</td>
<td>Under 8</td>
<td>6.99 (5.99)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>6.24 (5.45)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>5.88 (5.79)</td>
</tr>
<tr>
<td>Health**</td>
<td>2</td>
<td>344</td>
<td>5.03</td>
<td>Under 8</td>
<td>15.43 (9.71)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>21.02 (11.44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>16.82 (8.21)</td>
</tr>
<tr>
<td>Damage*</td>
<td>2</td>
<td>344</td>
<td>3.42</td>
<td>Under 8</td>
<td>19.16 (11.98)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>26.23 (14.12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>24.03 (15.86)</td>
</tr>
<tr>
<td>Rarity***</td>
<td>2</td>
<td>344</td>
<td>12.46</td>
<td>Under 8</td>
<td>10.51 (8.02)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>12.57 (9.27)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over 18</td>
<td>18.83 (15.65)</td>
</tr>
</tbody>
</table>

$p < .05$; ** $p < .01$; *** $p < .001$

Significant between-subjects differences were found for Age Category for the perceptually salient attributes, creature’s animal type and aggressiveness but not for shininess as well as for all of the cognitively salient attributes, health, damage and rarity (see Table $^4$

---

$^4$ Tables 3 and 4 summarize MANOVA results using the logged attribute importance variables. However, the logged attribute importance variables’ means are difficult to interpret; therefore, while the statistics reported are from the logged attribute importance MANOVA, the actual attribute important scores calculated from the utils of each participant is reported for clarity of interpretation. A MANOVA conducted with the calculated important scores reported significance levels that were very similar to the MANOVA results using the logged variables. The only difference in significant values was for gender with the shininess importance variable showing marginal significance when using the actual attribute importance variable calculated rather than the logged variable.
In addition, significant between subjects differences were found for gender for the perceptually salient characteristics of animal type and aggressiveness but not for shiny as well as for the cognitively salient attributes of health and damage but not for rarity (see Table 4).

Table 4. Significant Univariate Effects for Gender

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>df</th>
<th>df error</th>
<th>F</th>
<th>Gender</th>
<th>Means (SD) Attribute Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Type**</td>
<td>1</td>
<td>344</td>
<td>10.97</td>
<td></td>
<td>Male 16.36 (10.60) Female 19.88 (11.57)</td>
</tr>
<tr>
<td>Shininess</td>
<td>1</td>
<td>344</td>
<td>.638</td>
<td></td>
<td>Male 5.62 (4.41) Female 6.71 (6.63)</td>
</tr>
<tr>
<td>Health**</td>
<td>1</td>
<td>344</td>
<td>9.18</td>
<td></td>
<td>Male 20.04 (9.57) Female 15.97 (9.66)</td>
</tr>
<tr>
<td>Damage**</td>
<td>1</td>
<td>344</td>
<td>11.94</td>
<td></td>
<td>Male 27.32 (15.34) Female 20.73 (13.67)</td>
</tr>
<tr>
<td>Rarity</td>
<td>1</td>
<td>344</td>
<td>1.54</td>
<td></td>
<td>Male 15.98 (14.29) Female 14.72 (12.13)</td>
</tr>
</tbody>
</table>

*p < .05; ** p < .01

Post hoc analyses using the Tukey HSD criterion revealed that for animal type, significant differences existed between all three age categories (under 8 vs. 8 to 12, p < .01; under 8 vs. adults, p < .001; 8 to 12 vs. adults, p < .05). For animal aggressiveness, significant differences existed between those who were under 8 and children ages 8 to 12 as well as adults (under 8 vs. 8 to 12, p < .01; under 8 vs. adults, p < .001) with no significant difference between adults and children ages 8 to 12 (p = .94). For health, a significant difference was found between those under the age of 8 and children ages 8 to 12 (p < .01) with a marginally significant difference between those under 8 and adults (p = .09). There was no significant difference between children ages 8 to 12 and adults (p =
.11) on how they valued health. For damage, significant differences existed between children under 8 and children ages 8 to 12 ($p < .01$) but adults were not significantly different from either children’s age group ($p > .05$). For rarity, adults were significantly different from those under 8 ($p < .001$) and children ages 8 to 12 ($p < .05$). Only a marginally significant difference was found between the two children’s groups ($p = .09$) for rarity importance. Results for age category are graphed in Figure 11 and Figure 12. In examining gender differences, significant univariate differences were also found for gender along the perceptually salient characteristics of animal type, and aggressiveness but not for shininess as well as for the cognitively salient attributes of health and damage but not for rarity.

Figure 11. Perceptually Salient Attribute Importance Estimations by Age Category
These results provide support for Hypotheses 2 and 3. Hypothesis 2 states that the attributes children use to make tradeoff decisions varies by age with younger children, ages 5-7, valuing perceptually salient attributes over underlying quantitative attributes like the health and the damage, with older children, ages 8-12, and adults valuations demonstrating a reverse effect. When only those attribute importance means that were significantly different (see Table 3) are examined, it is seen that younger children value animal type and the animal’s aggressiveness, two perceptually salient attributes, significantly more than older children and adults. Whereas, older children and adults place greater importance on the quantitative, cognitively involving attributes of health damage and rarity. Interestingly, this effect is not entirely linear as age increases with the
valuation of health and damage becoming lower in adults than among older children. More importantly, however, is that children ages 8 to 12 are more similar to adults, ages 18 and over, in their preferences than to children under the age of 8.

Hypothesis 3 states that the attributes used to make tradeoff decisions will vary by gender with females valuing perceptually salient attributes over the more cognitively involving attributes with males preferring the opposite. As can be seen in Table 4, female participants significantly found the perceptually salient attributes—animal type and aggressiveness—more important than male participants while male participants significantly found the cognitively involving attributes of health and damage more important.

*Cluster Analysis.* Cluster analysis was conducted using the utils estimated for the levels of each attribute. While all of the util levels for animal type, health, and damage were entered into the analysis, only one level of shiny, rare and aggressiveness as they each only had 2 levels to generate the cluster solution. As cluster analysis is an empirical classification method that is inductive in nature (Punj and Stewart 1983), one best solution is not necessarily evident and thus validity of the cluster solution needs to be considered. In order to establish validity, the sample was split into two subsamples. However, because differences were hypothesized based on age and gender, it was necessary to create the sub-samples stratifying along gender and age. To accomplish this, the sample was sorted by gender and then by age. Then the cases was systematically separated into two datasets by assigning the number one or two alternatively to each case creating two subsamples of 177 cases each from the original 354 subjects.
Then a two-step cluster analysis was conducted in SPSS on each subsample and the results compared to cross-validate the outcome. The two-step cluster analysis is based on a distance measure that enables data with both continuous and categorical attributes to be clustered. The distance is derived from a probabilistic model where the distance between two clusters is equivalent to the decrease in log-likelihood function as a result of merging the two clusters. The first step groups cases into preclusters by scanning the entire dataset and storing dense regions of data records in summary statistics which are then stored in memory as a data structure called a CF-tree (Zhang et al. 1996). A hierarchical clustering algorithm is then applied to cluster the CF-trees. Working with these dense regions allows for very efficient clustering. Euclidean or Manhattan distance measures are used. The applied algorithm automatically determines the best number of clusters during the final hierarchical clustering phase (Chiu et al. 2001). The two-step cluster analysis method was chosen because of its ability to automatically determine the number of clusters that best fits the data unlike K-means (Chiu et al. 2001) which requires an a priori determination of the number of clusters.

The analysis of both subsamples suggested the existence of two clusters of respondents. Proportionally the cluster sizes found in each subsample approximated each other with Subsample 1 classifying 41% of its group in one cluster and 59% in another and Subsample 2 classifying 39% in one cluster and 61% in another. An examination of the cluster centroids of the two sub-samples for the attribute importance variables indicated distinct similarities suggesting internal validity in the cluster solution (see Table 5
A MANOVA was conducted on each subsample using the cluster variable as a factor and the six attribute importance variables as dependent variables. A significant multivariate effect for the attribute importance variables as a group in relation to cluster membership was found (Subsample 1: cluster 1 versus cluster 2: Pillai’s Trace = .98, $F = 71.06$, $df = (5, 171)$, $p < .001$; Subsample 2: cluster 1 versus cluster 2: Pillai’s Trace = .98, $F = 52.46$, $df = (5, 171)$, $p < .001$). Each subsample achieved almost the same level of significance for each variable with the exception of shininess which achieved marginal significance in subsample 1 while it achieved significance in subsample 2. When cluster centroids are compared for each subsample, the importance placed on each variable is very similar both in direction and in scale.

As the cluster solutions were remarkably similar, a cluster analysis was conducted on the total sample yielding a two cluster solution with cluster 1 comprising 37.9% (134) of the sample and cluster 2 comprising 62.1% (220) which are proportionally very similar to the solutions yielded by both subsamples. A MANOVA was conducted using the total sample cluster variable as a factor and the six attribute importance variables as dependent variables. A significant multivariate effect for the attribute importance variables as a group in relation to cluster membership was found (cluster 1 versus cluster 2: Pillai’s Trace = .58, $F = 95.20$, $df = (5, 348)$, $p < .001$). An examination of the cluster centroids of the total sample yielded remarkably similar ratings of attribute importance to the subsamples (see Table 5).

The patterns of attribute importance within the clusters paint an interesting picture of the two clusters. In cluster 1, the attributes of greatest importance include the type of
Table 5. Attribute Importance Cluster Centroids and Significance Levels by Sample

<table>
<thead>
<tr>
<th></th>
<th>Subsample 1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cluster</td>
<td>Importance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Clustering</td>
<td></td>
<td></td>
<td>F Ratio</td>
<td>Significance</td>
</tr>
<tr>
<td>Animal Type</td>
<td></td>
<td>26.12</td>
<td>12.55</td>
<td>105.25</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td></td>
<td>27.88</td>
<td>10.17</td>
<td>75.81</td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td>11.71</td>
<td>22.90</td>
<td>77.82</td>
</tr>
<tr>
<td>Damage</td>
<td></td>
<td>17.31</td>
<td>30.28</td>
<td>41.36</td>
</tr>
<tr>
<td>Shininess</td>
<td></td>
<td>7.79</td>
<td>6.17</td>
<td>3.30</td>
</tr>
<tr>
<td>Rarity</td>
<td></td>
<td>9.20</td>
<td>17.93</td>
<td>23.29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Subsample 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cluster</td>
<td>Importance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Clustering</td>
<td></td>
<td></td>
<td>F Ratio</td>
<td>Significance</td>
</tr>
<tr>
<td>Animal Type</td>
<td></td>
<td>26.42</td>
<td>13.18</td>
<td>80.40</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td></td>
<td>32.41</td>
<td>11.66</td>
<td>62.89</td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td>12.55</td>
<td>20.68</td>
<td>36.10</td>
</tr>
<tr>
<td>Damage</td>
<td></td>
<td>14.84</td>
<td>28.50</td>
<td>60.49</td>
</tr>
<tr>
<td>Shininess</td>
<td></td>
<td>4.78</td>
<td>3.68</td>
<td>5.45</td>
</tr>
<tr>
<td>Rarity</td>
<td></td>
<td>21.20</td>
<td>14.95</td>
<td>42.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Total Sample</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cluster</td>
<td>Importance</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Clustering</td>
<td></td>
<td></td>
<td>F Ratio</td>
<td>Significance</td>
</tr>
<tr>
<td>Animal Type</td>
<td></td>
<td>26.22</td>
<td>13.39</td>
<td>156.95</td>
</tr>
<tr>
<td>Aggressiveness</td>
<td></td>
<td>30.56</td>
<td>11.34</td>
<td>130.78</td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td>11.96</td>
<td>21.52</td>
<td>102.31</td>
</tr>
<tr>
<td>Damage</td>
<td></td>
<td>13.75</td>
<td>29.77</td>
<td>134.27</td>
</tr>
<tr>
<td>Shininess</td>
<td></td>
<td>7.13</td>
<td>5.61</td>
<td>5.97</td>
</tr>
</tbody>
</table>
animal and the aggressiveness of the animal. Cluster 1 also seems to value shininess more than cluster 2. All three of these attributes are considered perceptually salient to the card suggesting that those subjects in cluster 1 base their preferences on perceptually salient attributes. In contrast, cluster 2 places greater importance on the health, damage and rarity components of the card which are all considered more cognitively salient characteristics requiring a more in-depth understanding of the product.

From these findings, the composition of the clusters can be characterized as follows in Table 6. Cluster 1 (Perceptually Salient), which represented 39.7% of the sample, can be described as predominantly female (96 or 72% of the cluster). Of the 133 members in this cluster, 40% were adults, 35% children under the age of 8, and 25% ages 8 to 12. Cluster 2 (Cognitively Salient), which represented 60.3% of the sample, can be described as predominantly male (126 or 58% of the cluster). Of the 217 members in this cluster, only 9% were under the age of 8, 35% were ages 8 to 12 and 56% were adults over the age of 17. To test for a relationship between the cluster membership and gender, a chi-square test of independence was performed. The relationship between these variables was significant, $\chi^2(2, N = 354) = 30.32, p < .001$. To test for a relationship between the cluster membership and age categories, a chi-square test of independence was performed and found a significant relationship, $\chi^2(2, N = 354) = 34.71, p < .001$. Cross-tabulations using these clusters against age and gender yield interesting patterns of data. The majority of males (77.3%) in the sample were members of the
cognitively salient cluster with only 22.7% in the perceptually salient cluster. Females were more evenly split between each cluster with 51.3% belonging to the perceptually salient cluster and 48.7% belonging to the cognitively salient one (see Table 6). In terms of age, the majority of the youngest children, under the age of 8, (69.7%) belonged to the perceptually salient cluster. In contrast, the preponderance of older children (69%) and adults (70%) belonged to the cognitively salient cluster (see Table 6). To further validate results, cross-tabulations for the subsamples were also conducted to examine similarities in their composition by gender and age category yielding similar results.

From this pattern of results, it can be inferred that younger children base their preference decisions on perceptually salient characteristics. However, by the time children are 8 they base their preference decisions on cognitively salient characteristics at very similar rates to adults. It can also be inferred that gender differences exist with males basing their preference decisions on cognitively salient characteristics although females seem to be split in their decision criteria. These results are consistent with previously discussed MANOVA results lending support to its findings.

**Additional Analysis.** The above results examine differences between subjects categorizing them into different groups based on age, gender and cluster membership based on their relative preference between attributes using the importance of each variable as a dependent measure which specifically addressed our hypotheses. Variation also existed in how subjects valued the different levels of each attribute. However, part-worth estimations of attribute levels are only comparable within each attribute. That is to say, different levels of different attributes are not comparable. Therefore, each attribute
Table 6. Cross-Tabulation Results between Gender/Age Category and Clusters for Total Sample

<table>
<thead>
<tr>
<th></th>
<th>Perceptual</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>37</td>
<td>126</td>
</tr>
<tr>
<td>% within Gender</td>
<td>22.70%</td>
<td>77.30%</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>96</td>
<td>91</td>
</tr>
<tr>
<td>% within Gender</td>
<td>51.30%</td>
<td>48.70%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Under 8</strong></th>
<th>Perceptual</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>46</td>
<td>20</td>
</tr>
<tr>
<td>% within Age Category</td>
<td>69.70%</td>
<td>30.30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>8-12 years</strong></th>
<th>Perceptual</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>34</td>
<td>75</td>
</tr>
<tr>
<td>% within Age Category</td>
<td>31.20%</td>
<td>68.80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>17 and over</strong></th>
<th>Perceptual</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>53</td>
<td>122</td>
</tr>
<tr>
<td>% within Age Category</td>
<td>30.30%</td>
<td>69.70%</td>
</tr>
</tbody>
</table>

was analyzed separately. Because the part-worth valuations within an attribute sum to zero, on the variables with only two levels, it was only necessary to include one of the levels as a dependent variable as the other level was redundant.

For the attribute of creature aggressiveness which had two-levels (aggressive or cute creature), a two-way analysis of variance was run using the part-worth for aggressiveness of the creature (versus cute) as the dependent variable and gender (male vs. female) and age category (under 8, 8 to 12, and 17 and over) as factors. The main effect of gender yielded an F ratio of $F(1, 344) = 44.01$, $p < .001$, indicating aggressiveness was significantly more valued than cuteness by males ($M = 9.27$, $SD = 59.09$) than for females ($M = -47.81$, $SD = 76.93$). There was also a significant main effect of age category, $F(2, 344) = 4.85$, $p < .01$. The interaction between gender and age category was insignificant, $F(1, 344) = 1.30$, $p = .27$. Post hoc analyses using the
Bonferroni post hoc criterion for significance indicated that the average part-worth for aggressiveness was significantly lower among children under the age of 8 ($M = -43.18$, $SD = 80.01$) than older children ages 8 to 12 ($M = -1.20$, $SD = 60.96$) and adults 17 and over ($M = -25.42$, $SD = 77.83$). No significant difference existed between older children and adults. Children over 8 then were similar in how they valued the attribute of creature aggressiveness to adults (see Table 7 for means).

The same two-way analysis of variance using the part-worth for shininess as the dependent variable was run with a significant main effect for age category, $F(2, 344) = 3.46$, $p < .05$. Both the effect of gender, $F(1, 344) = .53$, $p < .47$, and the interaction between gender and age category, $F(1, 344) = .004$, $p = .996$, were insignificant. Post hoc analyses using the Bonferroni post hoc criterion for significance indicated that the average part-worth for shininess was significantly lower ($p < .05$) among children under the age of 8 ($M = 2.37$, $SD = 27.62$) and adults 17 and over ($M = 11.57$, $SD = 21.91$). There was no significant difference between younger children and older children ages 8 to 12 ($M = 7.76$, $SD = 23.68$) or between older children and adults. These results are counterintuitive as the shininess of the object is considered a perceptually salient feature of the card although it is worth noting that this particular attribute was not found to be very important according to the importance variable calculations for any age category. In addition, it may be that younger children make their valuation decisions differently than older children and adults only taking into account the most perceptually salient feature which is the creature.
Table 7. Mean Utils for Each Level of Attributes (Animal Type, Health and Damage)

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Bird</th>
<th>Dog</th>
<th>Horse</th>
<th>Rodent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 8</td>
<td>15.56</td>
<td>36.97</td>
<td>3.69</td>
<td>-56.22</td>
</tr>
<tr>
<td>8 to 12</td>
<td>10.18</td>
<td>29.77</td>
<td>-4.04</td>
<td>-35.28</td>
</tr>
<tr>
<td>17 and over</td>
<td>20.44</td>
<td>19.78</td>
<td>0.3</td>
<td>-39.32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>8.07</td>
<td>25.71</td>
<td>-6.86</td>
<td>-26.91</td>
</tr>
<tr>
<td>Females</td>
<td>23.52</td>
<td>25.01</td>
<td>5.21</td>
<td>-53.74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Health 60</th>
<th>Health 80</th>
<th>Health 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 8</td>
<td>-27.05</td>
<td>-4.23</td>
<td>31.29</td>
</tr>
<tr>
<td>8 to 12</td>
<td>-55.26</td>
<td>-3.67</td>
<td>58.93</td>
</tr>
<tr>
<td>17 and over</td>
<td>-44.33</td>
<td>-2.76</td>
<td>47.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>-50.56</td>
<td>-5.39</td>
<td>55.95</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>-39.18</td>
<td>-1.52</td>
<td>40.7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Damage 20</th>
<th>Damage 40</th>
<th>Damage 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 8</td>
<td>-16.93</td>
<td>-4.88</td>
<td>21.81</td>
</tr>
<tr>
<td>8 to 12</td>
<td>-61.38</td>
<td>0.2</td>
<td>61.18</td>
</tr>
<tr>
<td>17 and over</td>
<td>-60.89</td>
<td>0.3</td>
<td>60.59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>-70.92</td>
<td>1.85</td>
<td>69.07</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>-36.92</td>
<td>-2.94</td>
<td>39.86</td>
<td></td>
</tr>
</tbody>
</table>

A two-way analysis of variance was run for the part-worth for rarity as well with significant main effects for both gender $F(1, 344) = 3.92, p < .05$, and age category, $F(2, 344) = 21.49, p < .001$ but no significant interaction, $F(2, 344) = .012, p = .988$. Rarity was significantly more valued than not rare cards by males ($M = 42.32, SD = 48.46$) than for females ($M = 36.64, SD = 44.02$). Post hoc analyses using the Bonferroni post hoc
criterion for significance indicated that the average part-worth for rarity was significantly lower \((p < .001)\) among children under the age of 8 \((M = 18.72, SD= 35.11)\) and children between the ages of 8 and 12 \((M = 28.51, SD= 37.26)\) than adults 17 and over \((M = 53.75, SD= 50.08)\). No significant difference was found between either children’s age group. For the attribute of rarity, the children differed from the adults with adults greatly valuing the attribute of rarity over children (see Table 7 for means).

To examine differences between the levels of animal type, a mixed analysis of variance was conducted using gender and age category as between-subjects factors and animal type as the within-subject factor. A significant multivariate effect for animal types \((\text{bird vs. dog vs. horse vs. rodent: Pillai’s Trace } = .52, F = 123.51, df = (3, 342), p < .001)\) with significant interactions with gender \((\text{male vs. female: Pillai’s Trace } = .07, F = 8.85, df = (3, 342), p < .001)\) and age category \((\text{under 8, 8 to 12 vs. adults: Pillai’s Trace } = .05, F = 2.93, df = (6, 686), p < .01)\) were found (see Figure 13 and Figure 14). The three-way interaction between animal type, gender and age category was non-significant. Mauchly's Test of Sphericity indicated that the assumption of sphericity, the assumption that the difference scores of the paired levels of the repeated measures factor have equal population variances, had been violated, \(\chi^2(5) = 50.259, p = .000\). Therefore, a correction needed to be applied to the degrees of freedom. Because the epsilon for sphericity reported was greater than .75 \((\varepsilon = .927)\), the Huynh-Feldt correction was applied (Girden 1992). Tests of within-subjects effects yielded a significant main effect for animal type, \(F(2.78, 956.66) = 115.24, p < .001\). More interestingly, significant two-way interactions were found between animal type and gender, \(F(2.78, 956.66) = 10.93, p < .001\), and
between animal type and age category, $F(5.56, 956.66) = 2.64, p < .05$. A three-way interaction between animal type, gender and age category was insignificant, $F(5.56, 934.80) = .33$. Post hoc analysis was unable to be specified due to the nature of utils calculated as within an attribute for each subject, utils sum to zero.

When the average utils were compared across age categories, distinct, although not entirely dissimilar, patterns emerged. Those under the age of 8 definitely preferred the dog creature the most followed by the bird and horse. This age group was also the most extreme in their dislike for the rodent creature although all age groups showed a lack of preference for this creature. Those ages 8 to 12 demonstrated a similar pattern for preference of creature although to lesser extremes while adults demonstrated relatively equal preferences for the bird and dog creatures. Gender differences included males valuing the dog creature over the three others while females valued both the bird and the

Figure 13. Valuation (in Utils) of Animal Type by Age Category
Figure 14. Valuation (in Utils) of Animal Type by Gender

Figure 15. Valuation (in Utils) of Health Levels by Age Category
Figure 16. Valuation (in Utils) of Health Levels by Gender

Figure 17. Valuation (in Utils) of Damage Levels by Age Category
While both males and females preferred the rodent the least, the dislike by women was much more pronounced than that of males.

To examine differences between the levels of health, a mixed analysis of variance was conducted using gender and age category as between-subjects factors and health as the within-subject factor. A significant multivariate effect for health (health 60 vs. health 80 vs. health 100: Pillai’s Trace = .58, $F = 238.44$, $df = (2, 343)$, $p < .001$) with significant interactions with gender (male vs. female: Pillai’s Trace = .02, $F = 3.75$, $df = (2, 343)$, $p < .05$) and age category (under 8, 8 to 12 vs. adults: Pillai’s Trace = .06, $F = 5.92$, $df = (4, 688)$, $p < .001$) were found (see Figure 15 and Figure 16). The three-way interaction between health, gender and age category was non-significant. Mauchly's Test of Sphericity indicated that the assumption of sphericity had been violated, $\chi^2(2) = 132.77$, $p = .000$. Therefore, a correction needed to be applied to the degrees of freedom.
Because the epsilon for sphericity reported was greater than .75 (\(\epsilon = .77\)), the Huynh-Feldt correction was applied (Girden 1992). Tests of within-subjects effects yielded a significant main effect was found for health, \(F(1.54, 530.25) = 341.45, p < .001\). More interestingly, significant two-way interactions were found between health and gender, \(F(1.54, 530.25) = 3.33, p < .05\), and between health and age category, \(F(3.08, 530.25) = 8.90, p < .001\). A three-way interaction between health, gender and age category was insignificant, \(F(3.08, 530.25) = 1.98\).

To examine differences between the levels of damage, a mixed analysis of variance was conducted using gender and age category as between-subjects factors and damage as the within-subject factor. A significant multivariate effect for damage (damage 60 vs. damage 80 vs. damage 100: Pillai’s Trace = .37, \(F = 101.89, df = (2, 343), p < .001\)) with significant interactions with gender (male vs. female: Pillai’s Trace = .06, \(F = 11.41, df = (2, 343), p < .001\)) and age category (under 8, 8 to 12 vs. adults: Pillai’s Trace = .07, \(F = 6.10, df = (4, 688), p < .001\)) were found (see Figure 17 and Figure 18). The three-way interaction between damage, gender and age category was non-significant. Mauchly’s Test of Sphericity indicated that the assumption of sphericity had been violated, \(\chi^2(2) = 318.36, p = .000\). Therefore, a correction needed to be applied to the degrees of freedom. Because the epsilon for sphericity reported was less than .75 (\(\epsilon = .62\)), the Greenhouse-Geisser correction was applied (Girden 1992). Tests of within-subjects effects yielded a significant main effect for damage, \(F(1.25, 530.25) = 166.83, p < .001\). More interestingly, significant two-way interactions were found between damage and gender, \(F(1.25, 428.73) = 19.47, p < .001\), and between damage and age category,
\[ F(2.49, 428.73) = 11.23, p < .001. \] A three-way interaction between damage, gender and age category was insignificant, \[ F(2.49, 428.73) = .44. \]

**Study 2 Discussion**

Analysis of Study Two supported Hypothesis 1, 2 and 3, demonstrating the valuation ratio and that age and gender play a role in children’s valuation of traded objects. The valuation ratio is predictive of a child’s choice supporting the valuation process proposed for barter. Younger children tend to base their preference decisions on the animal and its associated cuteness both of which are perceptually salient aspects of the good which is consistent with what is known about children. In contrast, older children and adults base their decisions on cognitively salient aspects like the health, damage and the rarity of the object. Differences between younger and older children and their valuation of the objects is clear with younger children significantly differing in the importance they placed on every attribute in the predicted way. Younger children also significantly differed from adults as expected with the exception of damage. More detailed analysis of the part-worths for each attribute also bear out these differences.

Moreover, the predicted differences between older children and adults were not as pronounced as originally predicted. Children ages 8 to 12 significantly differed from adults only in the importance they placed on the animal and rarity, both in the hypothesized directions. On the four other attributes, animal type, health, damage and shininess, older children and adults did not significantly differ from each other. These results may be interpreted to mean that children ages 8 to 12 value these objects and
make their choice decisions very similarly to adults, a finding that runs counter to current thinking on age differences. Or taken from another perspective, it may be more accurate to say that adults, in this preference task situation of trading, base their preference decisions in a way similar to older children. Either way, it shows that differences between children and adults are not as great as one might think. These findings call into question long-standing assumptions about the immaturity of children and deficits in their cognitive function around economic issues.

Cluster analysis results corroborate the findings of the ANOVA analysis with clusters that reflect preference differences that map onto hypothesized differences by age and by gender. It should be noted, however, that these clusters were by no means pure. In each group there were children and adults who went against the grain in how they valued traded objects. Not all male subjects based their decisions on the cognitive characteristics and not all children under the age of 8 based their preferences on perceptually salient attributes. Almost a third of children under 8 based their preference decisions on cognitively salient attributes. By the same token, not all older children and adults based their decisions on cognitive aspects of the card with about a third in each age category basing their preferences on perceptually salient attributes.

Theoretically, Study Two contributes to our understanding of what children value and the basis for their preference decisions. It is demonstrated that the attributes identified as important in the trading observations, are used to determine the value of the object and that these valuations can be used to predict a child’s choice. In addition, age and gender differences in how these attributes are valued were found.
Generally speaking, younger children, ages 5 to 7, value perceptually salient attributes more highly than cognitively salient attributes and base their preference decisions on these attributes. The opposite is true for older children. The same is true across genders with females preferring more perceptually salient attributes and men preferring those that are more cognitively salient. Managerially, makers of children’s products can use this knowledge to develop children’s products in a manner that appropriately suits the intended target market.

Managerially, however, these results point to the need to use caution in making broad generalizations about segmented groups. While general differences between older and younger children and adults as well as between genders exist, not all individuals in these groups value the same things. In particular, the gender differences in the cluster solutions bear this out. While the solution shows that men and women differed with men placing far more emphasis on cognitive factors than women, almost 50% of women based their preference decisions on cognitive factors as well.

The Valuation Process of Trading

Study Two examines the underlying valuation process in a preference decision and demonstrated that the valuation ratio was predictive of choice. When a child makes a preference decision, he or she need only consider what he or she likes about the object. But when children trade, there are two individuals involved. How might instantiating a trading scenario in the mind of a child alter the choice decision? In other words, will making the task a trading task alter the bases of the trading decision? Study Two
explores this question under the assumption that preference is based on the sum of the utilities one has for each attribute of the object. In trading, though, the preferences of another child are now also part of the trading decision which may bring other factors into play.

**Interdependence and Social Value Orientation**

One such factor, social value orientation, is introduced by the interdependence that occurs in a trading exchange. Negotiations are begun because parties involved believe an agreement is potentially more beneficial than no agreement and thus have a cooperative incentive to work together. Simultaneously, they have a competitive incentive to increase personal gain (De Dreu et al. 2007). When children trade they are engaged in a social situation that involves interdependence where parties depend on each other to acquire positive outcomes, avoid negative outcomes or both (De Dreu et al. 2007). The very nature of barter involves interdependence. Interdependence is the quality or condition of being mutually reliant on each other. This interdependence exists between one’s own and another’s outcomes. Individuals can systematically differ in how they approach interdependent others. These individual differences are known as a person’s social value orientation (SVO) which is defined as a stable preference for certain patterns of outcomes for oneself and others (McClintock 1978; McClintock and Allison 1989; Messick and McClintock 1968b).

McClintock (1972) postulated four principal motives for maximizing ones’ outcome that can occur in interdependent situations: own, relative, joint and other gain
maximization which correspond to four different SVOs, individualistic, competitive, cooperative/prosocial and altruistic. SVO has been shown to be predictive of helping behavior (McClintock and Allison 1989), willingness to sacrifice in close relationships (Van Lange et al. 1997), use of fairness in a strategic manner (Van Dijk et al. 2004), use of decision-making heuristics, exclusion in coalition formation (van Beest et al. 2003) and reactions to inequality (Stouten et al. 2005). For the purposes of this dissertation, the first three are examined as the fourth, altruism, does not apply in a trading exchange. If a person were to be altruistic in a trade, they would not expect or obtain anything in return. In other words, he or she would give the owned object away which as has been defined in this dissertation is not barter, but gift exchange. SVOs of relevance to this work are individualists—those who maximize their own outcomes without regard to the outcomes of others—competitive individuals—those who maximize their outcomes relative to others such that they have relative advantage over others—and prosocial individuals—those who seek to maximize outcomes for both themselves and others as well as minimize the differences between theirs and others outcomes (Van Lange et al. 1997).

The implication of social interdependence as it pertains to barter is in how it changes the process of barter. Findings in Study One provided evidence that a hostile, competitive environment altered the enactment of barter leading to protracted, extended negotiations or trades that placed one party at a significant disadvantage to the other (Marshall Thomas 1958). It also significantly decreased the number of exchanges attempted. Each exchange that exhibited this group dynamic was characterized by a
child that could be identified as a dominant power player who could be characterized as
having a competitive orientation in that he sought to maximize his utility while
minimizing the utility of others. A change in this aspect of a negotiation in barter may
alter how persons involved value their own goods versus the goods of the other party
involved in the process. Study Three of this dissertation seeks to understand and
measure the impact of social value orientation—competitive, prosocial or
individualistic—on the trading process and the underlying valuation process.

**Hypothesis Development**

In trading, this interdependence is a part of the interaction. As in negotiation, in
trading, parties involved believe an agreement is potentially more beneficial than no
agreement and thus have a cooperative incentive to work together while they
simultaneously have a competitive incentive to increase personal gain (De Dreu et al.
2007). Thus there is a tension in trading between parties that may be characterized as
either cooperative/prosocial or competitive.

Under a competitive orientation, when a child receives an offer to trade, he or she
may view the situation in a relative sense. Those with a competitive SVO have been
found to be homogeneous in their expectations of others SVO. That is, those with
competitive or individualistic orientation were found to perceive others as having the
same orientation as they had (Iedema and Poppe 1994a; Iedema and Poppe 1994b).
Consider two children, child A and child B, who have both expressed an interest in
trading two cards. If child A wants child B’s card, then child A must see the benefit to
himself as better relative to child B. In other words, an expression of others’ interest in an item one owns is informative of the item’s value. By virtue of the other child wanting his card, child B who has a competitive orientation will suspect that the value of his card is substantially greater than the card he stands to receive if he agrees to trade. The child then places more value on his own card than on the other child’s card making him less likely to trade overall.

Conversely, under a prosocial orientation, subjects will view trading as a win-win scenario as a child with a prosocial orientation will act more cooperatively and seek to maximize the joint outcome for them both. In trading, the child only achieves his goals if the other child does as well. Thus under a cooperative orientation, the child will value the other child’s card higher than he might otherwise value it outside of an interdependent situation. Under a cooperative orientation, the success of the other child's desire to trade becomes more prominent in his/her mind leading to an over valuation of the other child’s card leading to an increase in trading. In an individualistic mindset, the child seeks to maximize their own outcome with little regard or consideration for the outcome of others. Therefore, they would value their card and the others card objectively without consideration of the others’ motives. In this case, the valuation should simply be based on the child’s own preferences. Therefore, the following is hypothesized:

**Hypothesis 4:** Children with a competitive social value orientation will agree to trade less often than children with a prosocial or individualistic orientation. Children with a prosocial social value orientation will agree to trade more than children with either an individualistic or competitive orientation.
Study Three

Methodology

The methodology for Study Three replicates that of Study Two with some major additions and procedurally differences. The major objective of Study Three is to examine how SVO influences the trading process. Therefore, the major difference from Study Two to Study Three is the introduction of a trading context and a measure for SVO. As was stated earlier in Chapter Two, an inherent part of any negotiation is interdependence. Study Three seeks to understand the impact of interdependence and a person’s approach to interdependent others, their SVO, on the trading process. A secondary objective is in examining how instantiating a trading context may or may not alter the basis for valuation of traded objects.

Dependent variable

The dependent variable of interest in Study Three is whether or not the children trade. This variable can be construed in several ways depending on the analysis technique. As will subsequently be discussed, trading will be examined both as an aggregate variable, using the total times a child chooses to trade over 16 trading decisions as well as a binary choice variable where each choice decision is treated separately.

Independent variable

The independent variable of interest in Study Three is a child’s social value orientation (SVO) and how it might influence a child’s decision to trade.
Covariates

Several of the same covariate measures used in Study Two were used in Study Three. to include prior knowledge of, experience with, and attitudes towards trading cards using the same questions and methodology described in Study Two. In addition, parents were asked the same set of questions concerning special needs and socio-economic status. Additionally, parents were asked the same questions children were asked on materialism, that are subsequently discussed, in case children had difficulty answering these questions about themselves (see Appendix E).

Materialism was included as a covariate measure, as it was thought to have the potential to influence a child’s likelihood of trading. Materialism is defined by consumer researchers as “the importance a consumer attaches to worldly possessions” (Belk 1985). Materialism was included in the study using Belk’s (1984) measure of materialism that examined three traits he believed relevant to the construct, possessiveness, nongenerosity and envy. Possessiveness is defined as the inclination and tendency to retain control or ownership of one’s possessions and includes a concern about the loss of possessions, a desire for the greater control of ownership rather than the lesser control of rental, borrowing or leasing, and an inclination to save and retain possessions (Belk 1984). Nongenerosity is defined as an unwillingness to give possessions to or share possessions with others (Belk 1984). Envy is defined as the displeasure and ill will one feels at the superiority of another’s happiness, success, reputation, or the possession of anything desirable (Belk 1984; Schoek 1966).
This research examines the choice of card as a dependent variable. The traits that are incorporated into the overall dimension of materialism may influence a child’s willingness to trade. For example, if a child is very possessive, he or she may have difficulty trading regardless of the value of the card being offered to him or her in a trade. Similarly, if a child scores high on nongenerosity, he or she may also be less likely to part with their goods. Thus Belk’s materialism scale is potentially relevant to this study. That said, the scale required modification for its use with children. Several items were eliminated due to their lack of relevance for children. For example, “Renting or leasing a car is more appealing to me than owning one” is a measure that examines a behavior that children of this age have no experience or knowledge of and therefore cannot answer in a meaningful way. “It makes sense to buy a lawnmower with a neighbor and share it” similarly lacks validity as a measure among children. The number of items were further reduced to take into account the age of the children and their ability to answer a battery of questions (see Appendix F).

The following questions were asked in a two-stage format as was discussed earlier with a yes or no answer for the question initially and then followup questions to present a subset of choices on the scale of interest. Thus all of the questions first result in a yes or no answer. If respondents answer “Yes” to the question, they are presented with a continuum of how often the engage in or experience the question which include all the time, most of the time, sometimes, and every once in a while. If they respond “No,” they are asked “By no, do you mean hardly ever or never?”
The three questions concerning possessiveness include the following: “Do you tend to hang on to things that should probably be thrown out?”; “Do you get really upset when you lose something? and “Do you worry about other kids taking your things? ” For nongenerosity, three questions will be asked as follows: “Do you have trouble sharing your things?” and; “Do you let other kids borrow or use your things?”, “Do you enjoy giving gifts to other people?” The trait of envy was measured using this two item scale: “When someone has something cool, do you ever wish you could trade places with them?” and “Do you wish you had the things my friends have?” Lastly, one item from a materialism scale for children (Goldberg et al. 2003) was included “Do you think it is fun to think about all of the things you own?” Other items on Goldberg et. al’s scale (2003) were not thought to be relevant to this study as this scale was much more focused on shopping behaviors such as “I’d rather spend time buying things, than doing almost anything else” and “I really enjoy shopping.” Other items such as “I really like the kids that have very special games or clothes” were thought to be redundant to Belk’s scale.

Pretest of Study 3

Study 3 was pretested with 23 children ages 6 to 10.

Stimulus Modifications

The trading cards were modified from Study Two to Study Three because of the researcher’s concerns for some children’s interpretation of the cards in Study Two. First, some children interpreted the health points, which were 100, 80 and 60, as percentages, which is how health is allocated in first person fighter video games. Interpreting them as percentages is the same ordinally as interpreting them as points, but in order to alleviate
Figure 19. Study 3 Trading cards stimulus
any confusion, the health points were changed to 110, 90 and 70. Additionally, rarity was thought a priori to be a cognitively salient attribute as it requires a deeper cognitive understanding, which was supported in the valuations estimated in Study Two. But the instantiation of rarity on the cards was mixed by making it perceptually salient as well with rare cards marked with the word “Rare” within a starburst figure. Common (non-rare) cards did not have any such starburst. To place greater emphasis on the cognitive nature of cards’ rarity, the stimuli were updated using the word “Rare” without a starburst with Common (non-rare) cards having the word “Common” in the same space. See Figure 19 for changed cards.

**Procedures**

Study Three begins the same way as Study Two, with small talk to engage the child, informed assent procedures and questions on experience, knowledge and attitudes with answers recorded on a laptop by the researcher. The procedure then continues with the choice-based trading task. Each child was given a deck of 16 cards, then shown all of the cards he was receiving. The cards were then piled on top of one another with only one card showing so card complementarities, if any, could not be assessed. For each of the 16 cards, instead of being asked to make preference choices between the two cards, each child was now told that he or she was to trade cards with another child who had already assessed these cards and wished to trade cards with him or her. Thus, in this setting, each card in their deck is a card the child “owns”, which he or she can give up for another card the researcher showed to him or her. Each child was instructed that he could either keep his own card or trade cards with the other person. For each of the 16 trade opportunities,
each child was then shown the offered card next to the “owned” card. The decision in each of the 16 trade opportunities is to trade the topmost card in the deck for the offered card, or to forgo trading and keep the card. Each choice was recorded in the computer and the next card in the deck was shown until no cards were left.

Once the trading tasks were concluded, a general measure of SVO commonly used to measure interdependence orientation (Messick and McClintock 1968a) was administrated. Children received the following instructions: “In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to as simply the other child. This other child is someone you do not know, who you will not knowingly meet in the future. You will choose either choice A, B or C. Your choice will produce points for both yourself and the other child. Every point has value: The more points you receive, the better for you, and the more points the other person receives the better for him/her. Here's an example of how this task works.” An example of the task was then shown. As a check for understanding, children were asked to point to the choice where they would receive the most points. Then they were asked to point to the task where the other child would receive the most points.

Each of the choices, A, B or C, embodies a point spread that indicates a specific SVO with a point allocation for the child and the other child. For example, in the competitive choice, the child receives 48 points and the other child 8 points; in the prosocial choice, the child and the other child each receives 48 points and; in the individualistic choice, the child receives 50 points and the other child 30 points. This task was repeated five times with variations on the points and choices (see Appendix G). If a
child chooses a certain orientation three times within the five tasks, he was designated that orientation. Finally, covariates questions were asked of participants. Participants were given a $10 gift card at the end of the session and thanked for their time.

**Study Three Results**

**Sample**

102 children ages 5 to 12 years old participated in the study. Among these, 50 were male and 52 were female. Respondents were categorized into developmentally appropriate groups (John 1999): the first group consists of children under 8 years of age, and the second group consists of children between 8 to 12 of age. 35 participants were under the age of 8 ($M = 6.4; SD = .74$) with 17 males and 18 females; 67 were between the ages of 8 and 12 ($M = 9.3; SD = 1.1$) with 33 males and 34 females. All 102 children participated in 16 trading tasks, which amounts to 1,632 trading tasks.

**Hypothesis Testing.** To test the hypotheses that social interdependence influences a child’s willingness to trade, a one-way analysis of variance was conducted using the number of times children agreed to trade over the 16 trade tasks as the dependent variable. Three children who did not exhibit a dominant SVO from the task were excluded from the analysis. Significant differences were found between SVOs, $F(2, 96) = 3.52, p < .05$. Post hoc analyses were conducted using the Games-Howell post hoc criterion due to unequal cell sizes (Individualistic, n = 64; Prosocial, n = 24; Competitive, n = 11) for the measured SVO variable. Results indicate that the average number of trades for prosocial children ($M = 9.00, SD = 3.16$) were significantly higher ($p < .05$)
than the average number of trades of individualistic children \((M = 7.48, SD = 2.17)\), but not statistically significantly different \((p = .24)\) than those who were competitive \((M = 7.64, SD = 1.74)\). This result provides partial support for Hypothesis 3 in that children with a prosocial value orientation traded more than individualistic children but not more than competitive children although it is worth noting that directionally the results are as expected.

Further analysis with covariates yielded no significance for most covariate measures. However, when age category was tested as a blocking factor, significant results were found. A two-way analysis of variance using SVO and age category (under 8 years vs. 8 to 12 years) yielded a significant main effect for SVO, \(F(2, 93) = 5.02, p < .01\) but no significant main effect for age category, \(F(1, 93) = 2.22, p > .10\). More interestingly, as shown in Figure 20, a two-way interaction between SVO and age category was found, \(F(2, 93) = 5.62, p < .01\).

To test for differences between SVO categories, a one-way analysis of variance was conducted for each age group. For children under the age of 8, a significant main effect for SVO was found, \(F(2, 29) = 6.25, p < .01\). Post hoc analysis using the Games-Howell post hoc criterion indicated that significant differences existed in the number of trades made between prosocial children \((M = 11.1, SD = 3.81)\) and competitive children \((M = 6.75, SD = .96)\) and marginally significant differences between prosocial children and individualistic children \((M = 7.83, SD = 1.98)\). But no difference between individualistic children and competitive children were found although directionally
support was found for what was hypothesized. Among children ages 8 to 12, however, a one-way analysis of variance found no significant effect of SVO, $F(2, 64) = .45$.

**Figure 20.** Means by Social Value Orientation and Age Category

---

**Disaggregating Trade Behavior Using Logistic Regression.** While the above analysis tests Hypothesis 3, additional analysis is warranted given the nature of the trading task. Recall that each child participated in 16 different trading tasks. Because the analysis shown above utilizes analysis of variance, the sum total of the number of trades for each child was used as the dependent variable. This has two important limitations. First, individual variation is obscured because the dependent variable is aggregated. Second, as a consequence, trade-specific covariates, such as the differences in card characteristics between the card to be traded and the one in hand, cannot be part of the model specification.

To address these limitations, instead of modeling the dependent variable as the total number of trades made, it could be modeled treating each trade task and its
associated covariates as a separate data point. That is, whether or not a child chose to trade or not for each trading task could be thought of as the dependent variable. Using this approach, the effects of the number of factors and covariates that can be simultaneously estimated is much larger. A suitable model to this end is the binary logistic regression.

A series of hierarchical logistic regressions using the dichotomous dependent variable of trade were run. Model 1 as shown in Table 8 provides logistic regression results including dummies for SVOs of individualistic and competitive orientation, keeping prosocial orientation as benchmark. Results show that both significantly reduce the probability of trading as compared to the benchmark group.

Table 8. Logistic Regression Results for Model 1

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE β</th>
<th>Wald's χ²</th>
<th>df</th>
<th>p</th>
<th>exp(β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.233</td>
<td>.097</td>
<td>5.76</td>
<td>1</td>
<td>.016</td>
<td>1.262</td>
</tr>
<tr>
<td>Individualistic Orientation</td>
<td>-.362</td>
<td>.115</td>
<td>9.83</td>
<td>1</td>
<td>.002</td>
<td>.697</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-.323</td>
<td>.179</td>
<td>3.25</td>
<td>1</td>
<td>.017</td>
<td>.724</td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td></td>
<td>χ²</td>
<td>df</td>
<td>p</td>
<td></td>
</tr>
<tr>
<td>Overall model evaluation</td>
<td></td>
<td></td>
<td>10.068</td>
<td>2</td>
<td>.007</td>
<td></td>
</tr>
<tr>
<td>Wald Test</td>
<td></td>
<td></td>
<td>2252.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R²</td>
<td></td>
<td></td>
<td>.008</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 2 incorporates age category (8 to 12 years old, with children under 8 as the benchmark group) and its interaction with SVO variables. As can be seen in Table 9Table 9, both social value orientation variables and age category are significant as are the interaction terms. The log-likelihood for Model 2 shows an improved fit than in Model 1. Next, Model 3 accounts for other demographic variables, race and gender, using dummy
### Table 9. Logistic Regression Results for Model 2

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE</th>
<th>Wald's $\chi^2$</th>
<th>df</th>
<th>p</th>
<th>exp(β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.636</td>
<td>.146</td>
<td>19.04</td>
<td>1</td>
<td>.000</td>
<td>1.889</td>
</tr>
<tr>
<td>Individualistic Orientation</td>
<td>-.678</td>
<td>.187</td>
<td>13.070</td>
<td>1</td>
<td>.001</td>
<td>.508</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-.951</td>
<td>.292</td>
<td>10.603</td>
<td>1</td>
<td>.001</td>
<td>.386</td>
</tr>
<tr>
<td>Age Category (8 to 12)</td>
<td>-.761</td>
<td>.198</td>
<td>14.791</td>
<td>1</td>
<td>.000</td>
<td>.467</td>
</tr>
<tr>
<td>Indiv x Age Category</td>
<td>.639</td>
<td>.242</td>
<td>6.985</td>
<td>1</td>
<td>.008</td>
<td>1.895</td>
</tr>
<tr>
<td>Compet x Age Category</td>
<td>1.112</td>
<td>.373</td>
<td>8.989</td>
<td>1</td>
<td>.003</td>
<td>3.040</td>
</tr>
</tbody>
</table>

**Test**

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall model evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald Test</td>
<td>27.16</td>
<td>5</td>
<td>.000</td>
</tr>
<tr>
<td>-2Log Likelihood</td>
<td>2234.915</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke $R^2$</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 10. Logistic Regression Results for Model 3

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE</th>
<th>Wald's $\chi^2$</th>
<th>df</th>
<th>p</th>
<th>Exp(β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.794</td>
<td>.257</td>
<td>9.560</td>
<td>1</td>
<td>.002</td>
<td>2.211</td>
</tr>
<tr>
<td>Individualistic Orientation</td>
<td>-.683</td>
<td>.191</td>
<td>12.799</td>
<td>1</td>
<td>.000</td>
<td>.505</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-.982</td>
<td>.296</td>
<td>10.968</td>
<td>1</td>
<td>.001</td>
<td>.375</td>
</tr>
<tr>
<td>Age Category (8 to 12)</td>
<td>-.764</td>
<td>.199</td>
<td>14.777</td>
<td>1</td>
<td>.000</td>
<td>.466</td>
</tr>
<tr>
<td>Indiv x Age Category</td>
<td>.649</td>
<td>.243</td>
<td>7.119</td>
<td>1</td>
<td>.008</td>
<td>1.91</td>
</tr>
<tr>
<td>Compet x Age Category</td>
<td>1.121</td>
<td>.383</td>
<td>8.580</td>
<td>1</td>
<td>.003</td>
<td>3.069</td>
</tr>
<tr>
<td>Gender (0= male; 1= female)</td>
<td>-.061</td>
<td>.107</td>
<td>.321</td>
<td>1</td>
<td>.571</td>
<td>.941</td>
</tr>
<tr>
<td>Race1Dummy (African-American)</td>
<td>-.113</td>
<td>.231</td>
<td>.240</td>
<td>1</td>
<td>.624</td>
<td>.893</td>
</tr>
<tr>
<td>Race3Dummy (Caucasian)</td>
<td>-.137</td>
<td>.203</td>
<td>.454</td>
<td>1</td>
<td>.500</td>
<td>.872</td>
</tr>
</tbody>
</table>

**Test**

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall model evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald Test</td>
<td>27.86</td>
<td>8</td>
<td>.001</td>
</tr>
<tr>
<td>-2Log Likelihood</td>
<td>2234.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke $R^2$</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
variables. As can be seen in Table 10, none of these variables have a statistically significant effect, whereas all previous variables remain significant. This is manifest in a negligible gain in log-likelihood from Model 2 to Model 3.

Finally, in order to control for the effect of card characteristics on the probability of trade, characteristics of the cards for each choice decision were entered into Model 4 in different ways, depending on the nature of these characteristics. The dichotomous card variables of rarity, shininess and animal aggressiveness were included as dummy variables coded 0 if the current card in the top of a child’s owned deck had that feature. The nature of the conjoint analysis task created for this discrete choice task made it such that if one card was rare/shiny/aggressive, the other child’s card was not. Therefore, including the characteristic of the cards along these three attributes in the card they were offered was redundant. As to the animal types, the animals featured on both the card a child owned and on the card they were offered from the other child were included in the model, with the Rodent as benchmark animal in both cases. In order to capture health and damage instead of including the actual levels of the cards, the gain or loss resulting from trading their own card to the offered card was coded. For example, if the card a child owned had 90 health and the card the child was being offered in trade was 110, and the child decided to trade, the exchange was coded as a health gain of 20. If the child decided to keep his or her own card, it was coded a health loss of -20. Coding the health and damage variables in this way is theoretically warranted as the specification captures the differences between gains and losses which prospect theory predicts would be differently valued (Thaler 1980).
As can be seen in Table 11, numerous card characteristics were significantly related to children’s decision to trade, although not all were significant. More importantly, controlling for the card characteristics did not reduce the significance of SVO as individualistic and competitive value orientations remained significant demonstrating that both are significantly different than the benchmark group, prosocial value orientation. Note that even though a qualitatively similar result arises from the aggregated results using ANOVA, the logistic regression allows, in addition, capturing and holding constant task-specific effects which are interesting from a managerial perspective. Controlling for these task-specific effects also allows us to tease out the SVO effect. The aggregate approach does not permit such a degree of control.

To examine the effects of variables on the likelihood of trade, interpretation of the coefficient and odds ratio are examined from Table 11. Both SVO variables, individualistic and competitive orientation, have a negative estimate and an odds ratio below one, indicating that both lower the probability of trade as compared to having a prosocial value orientation which is the benchmark. Age category (coded 0 = under 8 and 1 = 8 to 12) also has a negative coefficient with an odds ratio of less than one indicating that being older is associated with a lower likelihood to trade, which is consistent with the two-way ANOVA results. Health gains and losses have intuitive results with gains having a positive coefficient and an odds ratio over one; thus having a trade that increases your health points makes one more likely to trade whereas losses decreases that likelihood. However, it should be noted that both odds ratios are very close to one
Table 11. Logistic Regression Results for Model 4

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$\beta$</th>
<th>$SE$</th>
<th>Wald's $\chi^2$</th>
<th>$df$</th>
<th>$p$</th>
<th>Exp($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.691</td>
<td>.499</td>
<td>1.916</td>
<td>1</td>
<td>.166</td>
<td>.501</td>
</tr>
<tr>
<td>Individualistic Orientation</td>
<td>-.798</td>
<td>.210</td>
<td>14.480</td>
<td>1</td>
<td>.000</td>
<td>.450</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-1.276</td>
<td>.326</td>
<td>15.335</td>
<td>1</td>
<td>.000</td>
<td>.279</td>
</tr>
<tr>
<td>Age Category ( 8 to 12)</td>
<td>-.925</td>
<td>.218</td>
<td>17.974</td>
<td>1</td>
<td>.000</td>
<td>.396</td>
</tr>
<tr>
<td>Indiv x Age Category</td>
<td>.838</td>
<td>.267</td>
<td>9.867</td>
<td>1</td>
<td>.002</td>
<td>2.311</td>
</tr>
<tr>
<td>Compet x Age Category</td>
<td>1.572</td>
<td>.421</td>
<td>13.964</td>
<td>1</td>
<td>.000</td>
<td>4.815</td>
</tr>
<tr>
<td>Gender (0= male; 1= female)</td>
<td>-.065</td>
<td>.118</td>
<td>.309</td>
<td>1</td>
<td>.578</td>
<td>.937</td>
</tr>
<tr>
<td>Race1Dummy (African-American)</td>
<td>-.320</td>
<td>.254</td>
<td>1.587</td>
<td>1</td>
<td>.208</td>
<td>.726</td>
</tr>
<tr>
<td>Race3Dummy (Caucasian)</td>
<td>-.286</td>
<td>.223</td>
<td>1.634</td>
<td>1</td>
<td>.201</td>
<td>.752</td>
</tr>
<tr>
<td>Health Gain</td>
<td>.067</td>
<td>.008</td>
<td>62.699</td>
<td>1</td>
<td>.000</td>
<td>1.069</td>
</tr>
<tr>
<td>Health Loss</td>
<td>-.032</td>
<td>.009</td>
<td>12.901</td>
<td>1</td>
<td>.000</td>
<td>.969</td>
</tr>
<tr>
<td>Damage Gain</td>
<td>-.036</td>
<td>.011</td>
<td>10.179</td>
<td>1</td>
<td>.001</td>
<td>.964</td>
</tr>
<tr>
<td>Damage Loss</td>
<td>-.008</td>
<td>.012</td>
<td>.498</td>
<td>1</td>
<td>.480</td>
<td>.992</td>
</tr>
<tr>
<td>Bird Own</td>
<td>.535</td>
<td>.233</td>
<td>5.785</td>
<td>1</td>
<td>.016</td>
<td>1.708</td>
</tr>
<tr>
<td>Dog Own</td>
<td>.103</td>
<td>.196</td>
<td>.275</td>
<td>1</td>
<td>.600</td>
<td>1.109</td>
</tr>
<tr>
<td>Horse Own</td>
<td>.755</td>
<td>.191</td>
<td>15.581</td>
<td>1</td>
<td>.000</td>
<td>2.127</td>
</tr>
<tr>
<td>Horse Other</td>
<td>.350</td>
<td>.207</td>
<td>2.858</td>
<td>1</td>
<td>.091</td>
<td>1.419</td>
</tr>
<tr>
<td>Dog Other</td>
<td>.816</td>
<td>.215</td>
<td>14.352</td>
<td>1</td>
<td>.000</td>
<td>2.261</td>
</tr>
<tr>
<td>Bird Other</td>
<td>1.427</td>
<td>.273</td>
<td>27.289</td>
<td>1</td>
<td>.000</td>
<td>4.166</td>
</tr>
<tr>
<td>Shiny Own</td>
<td>-.148</td>
<td>.131</td>
<td>1.268</td>
<td>1</td>
<td>.260</td>
<td>.862</td>
</tr>
<tr>
<td>Rare Own</td>
<td>-.122</td>
<td>.138</td>
<td>.786</td>
<td>1</td>
<td>.375</td>
<td>.885</td>
</tr>
<tr>
<td>Cute Own</td>
<td>-.115</td>
<td>.120</td>
<td>.916</td>
<td>1</td>
<td>.338</td>
<td>.891</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>$\chi^2$</th>
<th>$df$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall model evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald Test</td>
<td>313.53</td>
<td>21</td>
<td>.000</td>
</tr>
<tr>
<td>-2Log Likelihood</td>
<td>1948.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke $R^2$</td>
<td>.233</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

indicating that the magnitude of that influence while statistically significant is not as
great as one would suspect. Having a cute card in the owned deck also decreased the
likelihood of trade with an odds ratio fairly close to one.
Other variable coefficients, however, are more confusing to interpret. For example, the damage gain variable has a negative coefficient indicating that it makes it less likely that a person would trade even though they are gaining damage points. The animal type attribute also increased the probability of trade with the exception of the dog creature which was not significant. When the bird was in the other person’s deck, it increased the likelihood of trading four fold. But when one owned a bird card, they were 1.6 times more likely to trade. When the dog was in the other person’s deck, it doubled the likelihood of trade but when the dog was owned it also increased the likelihood of trade by 1.1 times. The animals however, are not simply the kind of creature created but crossed with levels of aggressiveness, aggressive or cute. Thus preferences mixed with these characteristics may be biasing the results. Consider also that when a child considers a trading task, they must make tradeoffs in their decision. The study was designed to accommodate additional conjoint analysis. Therefore, the card tasks themselves force tradeoffs between attributes to be able to determine part-worth valuations which may account for these results.

To further examine Hypothesis Four, a fifth logistic regression (see Table 12) was conducted substituting individual value orientation with prosocial value orientation to determine if the competitive SVO was significantly different from individualistic as hypothesized. Results indicate that the competitive SVO is marginally significantly different \((p < .10)\) indicating differences between competitive SVO and individualistic, lending support for the original hypothesis that children with a competitive SVO would trade less than individualistic children. Interestingly, when prosocial SVO is included
Table 12. Logistic Regression Results for Model 5

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>SE</th>
<th>Wald's (\chi^2)</th>
<th>df</th>
<th>p</th>
<th>Exp(β)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-1.461</td>
<td>.483</td>
<td>9.129</td>
<td>1</td>
<td>.003</td>
<td>.232</td>
</tr>
<tr>
<td>Prosocial Orientation</td>
<td>.954</td>
<td>.226</td>
<td>17.875</td>
<td>1</td>
<td>.000</td>
<td>2.596</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-.517</td>
<td>.305</td>
<td>2.864</td>
<td>1</td>
<td>.091</td>
<td>.596</td>
</tr>
<tr>
<td>Age Category (8 to 12)</td>
<td>-.121</td>
<td>.146</td>
<td>.688</td>
<td>1</td>
<td>.407</td>
<td>.886</td>
</tr>
<tr>
<td>Prosocial x Age Category</td>
<td>-.997</td>
<td>.280</td>
<td>12.664</td>
<td>1</td>
<td>.000</td>
<td>.369</td>
</tr>
<tr>
<td>Compet x Age Category</td>
<td>.759</td>
<td>.383</td>
<td>3.921</td>
<td>1</td>
<td>.048</td>
<td>2.135</td>
</tr>
<tr>
<td>Gender (0= male; 1= female)</td>
<td>-.089</td>
<td>.117</td>
<td>.574</td>
<td>1</td>
<td>.449</td>
<td>.915</td>
</tr>
<tr>
<td>Race1Dummy (African-American)</td>
<td>-.298</td>
<td>.253</td>
<td>1.392</td>
<td>1</td>
<td>.238</td>
<td>.742</td>
</tr>
<tr>
<td>Race3Dummy (Caucasian)</td>
<td>-.281</td>
<td>.223</td>
<td>1.586</td>
<td>1</td>
<td>.208</td>
<td>.755</td>
</tr>
<tr>
<td>Health Gain</td>
<td>.067</td>
<td>.008</td>
<td>62.865</td>
<td>1</td>
<td>.000</td>
<td>1.069</td>
</tr>
<tr>
<td>Health Loss</td>
<td>-.033</td>
<td>.009</td>
<td>13.379</td>
<td>1</td>
<td>.000</td>
<td>.969</td>
</tr>
<tr>
<td>Damage Gain</td>
<td>-.036</td>
<td>.011</td>
<td>10.184</td>
<td>1</td>
<td>.001</td>
<td>.964</td>
</tr>
<tr>
<td>Damage Loss</td>
<td>-.009</td>
<td>.012</td>
<td>.5047</td>
<td>1</td>
<td>.476</td>
<td>.991</td>
</tr>
<tr>
<td>Bird Own</td>
<td>.532</td>
<td>.222</td>
<td>5.711</td>
<td>1</td>
<td>.177</td>
<td>1.991</td>
</tr>
<tr>
<td>Dog Own</td>
<td>.105</td>
<td>.197</td>
<td>.286</td>
<td>1</td>
<td>.593</td>
<td>1.111</td>
</tr>
<tr>
<td>Horse Own</td>
<td>.759</td>
<td>.192</td>
<td>15.688</td>
<td>1</td>
<td>.000</td>
<td>2.135</td>
</tr>
<tr>
<td>Horse Other</td>
<td>.352</td>
<td>.207</td>
<td>2.887</td>
<td>1</td>
<td>.089</td>
<td>1.422</td>
</tr>
<tr>
<td>Dog Other</td>
<td>.822</td>
<td>.215</td>
<td>14.574</td>
<td>1</td>
<td>.000</td>
<td>2.275</td>
</tr>
<tr>
<td>Bird Other</td>
<td>1.434</td>
<td>.273</td>
<td>27.490</td>
<td>1</td>
<td>.000</td>
<td>4.194</td>
</tr>
<tr>
<td>Shiny Own</td>
<td>-.148</td>
<td>.132</td>
<td>1.273</td>
<td>1</td>
<td>.259</td>
<td>.862</td>
</tr>
<tr>
<td>Rare Own</td>
<td>-.123</td>
<td>.138</td>
<td>.918</td>
<td>1</td>
<td>.373</td>
<td>.884</td>
</tr>
<tr>
<td>Cute Own</td>
<td>-.115</td>
<td>.120</td>
<td>.916</td>
<td>1</td>
<td>.338</td>
<td>.891</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>(\chi^2)</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall model evaluation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald Test</td>
<td>317.38</td>
<td>21</td>
<td>.000</td>
</tr>
<tr>
<td>-2Log Likelihood</td>
<td>1944.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R(^2)</td>
<td>.236</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the model the main effect for age category is no longer significant (\(p = .41\)). But the interaction effects between both prosocial and competitive SVO are significant.

**Cross-tabulation.** The interaction terms are difficult to interpret as the exponentiated coefficient value is a ratio of ratios. To understand the effects, a cross-
Table 13. Cross-tabulation of Social Value Orientation by Trade or Not for Children Under 8

<table>
<thead>
<tr>
<th></th>
<th>Not Trade</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Count 1^5</td>
<td>2</td>
</tr>
<tr>
<td>% Trade</td>
<td>47.9%</td>
<td>52.1%</td>
</tr>
<tr>
<td>Individualistic</td>
<td>Count 9</td>
<td>9</td>
</tr>
<tr>
<td>% Trade</td>
<td>51.0%</td>
<td>49.0%</td>
</tr>
<tr>
<td>Prosocial</td>
<td>Count 3</td>
<td>7</td>
</tr>
<tr>
<td>% Trade</td>
<td>30.6%</td>
<td>69.4%</td>
</tr>
<tr>
<td>Competitive</td>
<td>Count 2</td>
<td>2</td>
</tr>
<tr>
<td>% Trade</td>
<td>57.8%</td>
<td>42.2%</td>
</tr>
</tbody>
</table>

Table 14. Cross-tabulation results of Social Value Orientation by Trade or Not for Children 8 to 12

<table>
<thead>
<tr>
<th></th>
<th>Not Trade</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Count 0</td>
<td>0</td>
</tr>
<tr>
<td>%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Individualistic</td>
<td>Count 25</td>
<td>21</td>
</tr>
<tr>
<td>%</td>
<td>54.1%</td>
<td>45.9%</td>
</tr>
<tr>
<td>Prosocial</td>
<td>Count 7</td>
<td>7</td>
</tr>
<tr>
<td>%</td>
<td>53.1%</td>
<td>46.9%</td>
</tr>
<tr>
<td>Competitive</td>
<td>Count 3</td>
<td>4</td>
</tr>
<tr>
<td>%</td>
<td>49.1%</td>
<td>50.9%</td>
</tr>
</tbody>
</table>

tabulation using SVO and the dependent variable was run separately for each age category. Results indicated a significant relationship, \( \chi^2 (3, n = 560) = 21.84, p < .001, \) between SVO and trading for children under the age of 8 with 69% of cooperative children choosing to trade as compared to 42% of competitive children and 49% of

^3 Values reported in Table 13 Table 13 and Table 14 are for number of children. The logistic regression analysis, however, utilized each trading decision children made as a separate unit of analysis. Children made 16 consecutive trading decisions. Therefore, count numbers reported in the chi-square analysis were divided by 16 to derive the number of children in each cell in order to achieve clarity of interpretation. Statistics reported reflect true number of cases calculated.
individualistic children. (see Table 13). For children ages 8 to 12, however, no significant relationship was found between SVO and trading, $\chi^2 (2, n = 1072) = .971, p = .62$ (see Table 14).

Table 15. Panel Logistic Regression Results of Model 4

<table>
<thead>
<tr>
<th>Predictor</th>
<th>$\beta$</th>
<th>$SE\beta$</th>
<th>Wald's $\chi^2$</th>
<th>df</th>
<th>$p$</th>
<th>Exp($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.682</td>
<td>.509</td>
<td>1.796</td>
<td>1</td>
<td>.181</td>
<td>.506</td>
</tr>
<tr>
<td>Individualistic Orientation</td>
<td>-.808</td>
<td>.222</td>
<td>13.250</td>
<td>1</td>
<td>.000</td>
<td>.446</td>
</tr>
<tr>
<td>Competitive Orientation</td>
<td>-1.289</td>
<td>.344</td>
<td>14.063</td>
<td>1</td>
<td>.000</td>
<td>.276</td>
</tr>
<tr>
<td>Age Category (8 to 12)</td>
<td>-.936</td>
<td>.231</td>
<td>16.403</td>
<td>1</td>
<td>.000</td>
<td>.392</td>
</tr>
<tr>
<td>Indiv x Age Category</td>
<td>.848</td>
<td>.282</td>
<td>9.060</td>
<td>1</td>
<td>.003</td>
<td>2.335</td>
</tr>
<tr>
<td>Compet x Age Category</td>
<td>1.585</td>
<td>.444</td>
<td>12.745</td>
<td>1</td>
<td>.000</td>
<td>4.878</td>
</tr>
<tr>
<td>Gender (0= male; 1= female)</td>
<td>-.068</td>
<td>.124</td>
<td>.292</td>
<td>1</td>
<td>.586</td>
<td>.935</td>
</tr>
<tr>
<td>Race1Dummy (African-American)</td>
<td>-.324</td>
<td>.268</td>
<td>1.464</td>
<td>1</td>
<td>.228</td>
<td>.723</td>
</tr>
<tr>
<td>Race3Dummy (Caucasian)</td>
<td>-.288</td>
<td>.236</td>
<td>1.488</td>
<td>1</td>
<td>.223</td>
<td>.750</td>
</tr>
<tr>
<td>Health Gain</td>
<td>.067</td>
<td>.008</td>
<td>62.726</td>
<td>1</td>
<td>.000</td>
<td>1.070</td>
</tr>
<tr>
<td>Health Loss</td>
<td>-.032</td>
<td>.009</td>
<td>12.960</td>
<td>1</td>
<td>.000</td>
<td>.968</td>
</tr>
<tr>
<td>Damage Gain</td>
<td>-.037</td>
<td>.011</td>
<td>10.304</td>
<td>1</td>
<td>.001</td>
<td>.964</td>
</tr>
<tr>
<td>Damage Loss</td>
<td>-.008</td>
<td>.012</td>
<td>.462</td>
<td>1</td>
<td>.497</td>
<td>.992</td>
</tr>
<tr>
<td>Bird Own</td>
<td>.541</td>
<td>.223</td>
<td>5.856</td>
<td>1</td>
<td>.015</td>
<td>1.719</td>
</tr>
<tr>
<td>Dog Own</td>
<td>.103</td>
<td>.197</td>
<td>.270</td>
<td>1</td>
<td>.602</td>
<td>1.108</td>
</tr>
<tr>
<td>Horse Own</td>
<td>.760</td>
<td>.192</td>
<td>15.682</td>
<td>1</td>
<td>.000</td>
<td>2.139</td>
</tr>
<tr>
<td>Horse Other</td>
<td>.353</td>
<td>.208</td>
<td>2.890</td>
<td>1</td>
<td>.089</td>
<td>1.423</td>
</tr>
<tr>
<td>Dog Other</td>
<td>.822</td>
<td>.216</td>
<td>14.440</td>
<td>1</td>
<td>.000</td>
<td>2.274</td>
</tr>
<tr>
<td>Bird Other</td>
<td>1.441</td>
<td>.275</td>
<td>27.353</td>
<td>1</td>
<td>.000</td>
<td>4.225</td>
</tr>
<tr>
<td>Shiny Own</td>
<td>-.152</td>
<td>.132</td>
<td>1.323</td>
<td>1</td>
<td>.249</td>
<td>.859</td>
</tr>
<tr>
<td>Rare Own</td>
<td>-.122</td>
<td>.138</td>
<td>.774</td>
<td>1</td>
<td>.378</td>
<td>.885</td>
</tr>
<tr>
<td>Cute Own</td>
<td>-.118</td>
<td>.121</td>
<td>.960</td>
<td>1</td>
<td>.328</td>
<td>.889</td>
</tr>
</tbody>
</table>

Test

<table>
<thead>
<tr>
<th>$\chi^2$</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall model evaluation</td>
<td>236.22</td>
<td>21</td>
</tr>
<tr>
<td>Wald Test</td>
<td>236.22</td>
<td>21</td>
</tr>
<tr>
<td>Goodness-of-fit test</td>
<td>-2Log Likelihood</td>
<td>-974.03</td>
</tr>
<tr>
<td>Nagelkerke $R^2$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

249
Panel Logistic Regression. While logistic regression accounts for task-specific trading variables, it treats each trading decision as separate. That is, the model assumes that each observed trade task comes from a different individual. Accounting for unobserved, children-specific factors which may permeate all 16 trading tasks for each child would be desirable. To account for this unobserved heterogeneity, panel logistic regression analysis was conducted using a random effects model (Woolridge 2011). The results (See Table 15) of the panel logistic regression are remarkably consistent with logistic regression results. Both logistic and panel logistic regression support the results found in the ANOVA analysis lending support for Hypothesis Four.

Comparison of Conjoint Estimations with Study Two Results

Additional analysis using conjoint estimation was also completed for two reasons, to compare how introducing a trading context might alter card valuations to the preference decision task and secondly, to provide clarification on how children viewed card characteristics in this study as results from logistic regression were confusing. Analysis proceeded similarly to Study 2 with the importance of each attribute calculated. A test for normality was conducted on each attribute importance variable which found significant non-normality in the data for every attribute to include the presence of positive skewness and the presence of outliers. To correct for non-normality, each attribute importance variable was transformed by taking its natural logarithm.

The fit of the logit model was estimated as in Study Two using the percent certainty and RLH. The percent certainty reported for Study Three was 0.59. The overall RLH reported for Study Three was 0.758. To test for significance, a one-sample t-test
was conducted using the average RLH reported for respondents \((M = 795.46, SD = 108.89)\), which is higher than the overall RLH reported at the group level, against the test value of 500 and found it to be significantly different \((t(101) = 25.07, p < .001)\). Based on the percent certainty statistics and the RLH values, the fit of the model developed through the HB estimation is good.

A MANOVA was conducted using the six logged attribute importance variables as dependent variables and gender and age category (under 8; 8 to 12) as independent variables. A significant multivariate effect for the attribute importance variables as a group in relation to age category (under 8, 8 to 12: Pillai’s Trace = .15, \(F = 2.74, df = (6, 93), p < .05\)) was found but not for gender (male versus female: Pillai’s Trace = .098, \(F = 1.68, df = (6, 93), p = .135\)). The interaction between gender and age category was non-significant.

As can be seen in Table 16, children’s part-worth utils in Study Three are somewhat consistent with results from Study Two although there are differences as well. First, the cognitively salient characteristics of health and damage are consistent with results from Study Two with older children valuing these attributes more highly than younger children. Results for the animal’s aggressiveness is also consistent with younger children caring more about how aggressive or cute the animal was. No differences were

---

6 Table 15 summarizes MANOVA results using the logged attribute importance variables. However, the logged attribute importance variables’ means are difficult to interpret; therefore, while the statistics reported are from the logged attribute importance MANOVA, the actual attribute important scores calculated from the utils of each participant is reported for clarity of interpretation. A MANOVA conducted with the calculated important scores reported significance levels that were very similar to the MANOVA results using the logged variables. The only difference in significant values was for gender with the shininess importance variable showing marginal significance when using the actual attribute importance variable calculated rather than the logged variable.
detected in the shiny variable as was the case in Study Two as well. These results demonstrate that Study Three’s results for attribute importance are consistent with Hypothesis 1. However, no significant effect was found for gender which is inconsistent with Hypothesis 2.

The importance of animal type and rarity, however, are different than Study Two results with neither attribute showing significant differences between age groups although in rarity there was only a marginally significant difference between those under the age 8 and those 8 to 12 years old in Study Two. What might account for this lack of results? First, as concerns rarity, recall that the stimulus was changed so as to not make the instantiation of rarity perceptually salient. Perhaps the change in how rarity was instantiated on the card reduced its importance because children simply did not notice this variable. Results from Study Two suggest that it is an attribute that requires more in-depth understanding. But in order to understand that variable, one must notice that it even exists. The importance of rarity for children in Study Two, while not high, was still in the double digits, whereas here in Study Three, the importance is now in the single digits demonstrating its lack of importance to children.

Why the animal type does not show difference, however, is more of an open question. A partial explanation may be due to the strength of the estimation. This study only collected data from 102 children using only one version of the choice-based tasks. Study Two used 25 versions of the task to increase the efficiency in the estimation and collected data from 354 subjects. The strength of the design for Study Two was 1172.32 while the strength of the design for Study Three was 715.08. The D-efficiency of Study
Three’s design relative to Study Two was 60.9 making it 39.1% less efficient in its estimation. In addition, standard errors are estimated when testing the design for each attribute level using simulated data. While standard error levels were below .05 for all other variables, the standard errors for the animal types were all greater than .05 with an average standard error of .06. Thus the efficiency of this design affected the accuracy of the estimation of the animal type variable the most. Estimations may become more accurate with the collection of additional data.

Table 16. Significant Univariate Effects for Age Category

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>df</th>
<th>df error</th>
<th>F</th>
<th>Age Category</th>
<th>Means (SD) Attribute Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Type</td>
<td>1</td>
<td>98</td>
<td>.047</td>
<td>Under 8</td>
<td>24.08 (10.48)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>23.71 (8.14)</td>
</tr>
<tr>
<td>Animal Aggressiveness*</td>
<td>1</td>
<td>98</td>
<td>6.03</td>
<td>Under 8</td>
<td>20.90 (16.07)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>10.69 (11.09)</td>
</tr>
<tr>
<td>Shininess</td>
<td>1</td>
<td>98</td>
<td>.17</td>
<td>Under 8</td>
<td>5.99 (4.71)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>5.77 (4.99)</td>
</tr>
<tr>
<td>Health*</td>
<td>1</td>
<td>98</td>
<td>4.18</td>
<td>Under 8</td>
<td>22.66 (11.32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>28.89 (12.93)</td>
</tr>
<tr>
<td>Damage*</td>
<td>1</td>
<td>98</td>
<td>5.32</td>
<td>Under 8</td>
<td>18.82 (9.23)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>27.19 (16.39)</td>
</tr>
<tr>
<td>Rarity</td>
<td>1</td>
<td>98</td>
<td>1.96</td>
<td>Under 8</td>
<td>9.43 (8.32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 to 12</td>
<td>7.07 (6.01)</td>
</tr>
</tbody>
</table>

*p < .05

Regardless, the animal type appears to be a very important and valued attribute upon which children base their decisions in trading. When these results are connected to the logistic regression results, it may clarify why the animal variables were positively predictive of likelihood to trade regardless of whether the card was owned or the other child’s. If the child preferred that particular animal, they might base their trading decision on trading or keeping their card if their preferred animal was on the card.
Study Three Discussion

Using three different kinds of analysis, Study Three finds that the effect of being prosocial significantly impacts one’s likelihood to trade. However, these results indicate that the effect of being prosocial on one’s propensity to trade was driven by the younger children as older prosocial children did not have a stronger propensity to trade than their individualistic or competitive counterparts. This effect is interesting, because it suggests that when children are young they are more influenced by their SVO than when they are older in making trading decisions and that as children age this influence diminishes. What might account for this effect?

SVO has been found to be a fundamental and stable personality trait because it can be accounted for both by differences in biological constitution (De Cremer and Van Lange 2001; Kuhlman et al. 1986; Van Lange et al. 1997) and its visibility in early childhood as a part of a child’s temperament ((Van Lange 1997). One’s orientation, however, continues to be shaped by the nature of one’s social interactions throughout a lifetime (Bogaert et al. 2008). Perhaps the nature of the trading interaction somehow tempers a child’s prosocial tendencies. Recall that in Study One, a rather common experience of their children reported by parents was that of younger children being taken advantage while trading. Indeed, the trading observation data bore this out as older children sought to take advantage of younger children. Parents were vigilant when their children traded with older peers or siblings and intervened when necessary. But more often, instead of intervening, they used their children’s experiences of being taken, to
teach them about the value of their objects and how to be more careful in assessing their feelings about that value because once an object is traded away, the object is gone.

Alternatively, what tempers the effect of SVO on propensity to trade may be based upon what attributes children base their trading decisions. Study Three corroborated Study Two findings regarding the attributes that older children find important. That is, older children consistently valued the cognitively salient attributes of health and damage. These attributes require a more in-depth understanding of the object. Perhaps it is this greater understanding that tempers SVO on willingness to trade. However, in addition to requiring more in-depth understanding, health and damage are both objective measures of value. More is better. The higher these numbers are, the more powerful the cards are. Not even younger children would think that less is better.

Younger children, however, tend to value perceptually salient attributes like the creatures aggressiveness which unlike health and damage is a very subjective formulation that may be more subject to persuasive influence.

Theoretically, Study Three also contributes to understanding the decision process of trading and what can influence that decision. Recall that Study Two relied on multi-attribute utility theory (MAUT) which posits that the utility of an object can be found by summing the utilities of each of its subsequent parts (Lancaster 1963). While Study Two measured children’s preferences for the card, Study Three instantiated a trading context which involves an interaction with another child, even though another child was not present in the study. But children were told their decisions affected outcomes for another child. Those children who cared about the outcome of the other child altered their
decision making demonstrating that children’s economic decisions can be influenced by their personality traits, not just the attributes of the object. Caution should be used, however, in interpreting this result. While prosocial children did trade more, as a measured variable, some third factor unaccounted for in the study could be responsible for this influence on trading decisions.
CHAPTER 4: SUMMARY AND CONCLUSIONS

The purpose of this dissertation is to obtain a greater understanding of the phenomenon of children’s trading in order to gain insight into children as consumers. Study One develops a model of children’s trading that integrates the socio-cultural view of children’s development with the dominant frameworks of cognitive developmental and social learning theories. In doing so, it illustrates social interaction as the focal point for learning. Antecedent influences of children’s engagement in the activity of trading are delineated which provides a more detailed understanding of the socialization process that occurs between parents, siblings, peers and children. The socialization process is also embedded in the overall trading process. Other processes, such as the negotiation and valuation process, that occur when children trade are also clarified.

Study Two investigates the valuation process more in-depth examining the valuations and tradeoffs made by children in preference decisions between tradable objects. Furthermore, these valuations and tradeoffs are found to vary systematically by age and gender. Consistent with the literature, children under the age of eight base their preference decisions on perceptually salient aspects of the object whereas older children and adults base their preference decisions on elements that require deeper cognitive understanding. Moreover, proposed age differences between older children and adults were not as significant as originally hypothesized with only significant differences in the
valuation of the animal type and rarity suggesting that older children, ages 8 to 12, make their decisions in a similar manner to adults. Differences were also found in gender with males valuing these deeper cognitive elements more than females.

Finally, Study Three examines how the trading context interacts with a person’s social value orientation (SVO) and how that systematically affects the decision to trade. Those with a prosocial SVO were more likely to trade than those with a competitive or individualistic SVO. But this effect was driven by age, with significant differences in trading by SVO in those under the age of 8 but not in older children. Among younger children, those with an individualistic SVO were shown to differ marginally significantly from those with a competitive social value orientation demonstrating that a person’s stable preference for certain patterns of outcomes for oneself and others affects the probability of making a trade among young children. Furthermore, this study demonstrates that people base their economic decisions in trading based on contextual factors of the situation. Introducing the trading scenario shifted the basis of individuals’ decision making from making decisions based solely on preferences associated with the object to the perceived shared outcome with another person.

**Contribution to the Literature**

While not the first research to examine children’s trading, this dissertation is the first to examine this phenomenon in-depth among children. In doing so, it contributes to the literature in a number of ways. First, it supplements our understanding of the role that the socialization agents of parents and peers play in the lives of young children as previous research in marketing has examined these agents from the perspective of
adolescents. In addition, it highlights the role siblings play in the lives of young children, which while intuitive, has not been well-examined in the literature.

More importantly, however, this dissertation proposes an integrated framework that combines the cognitive developmental, social learning and socio-cultural approaches in order to further our understanding of children’s consumer socialization. Traditional theoretical frameworks are inadequate for explaining and understanding the phenomenon of children’s trading as they assume children are not yet consumers. Incorporating the lens of the socio-cultural framework allows for a more advanced understanding of children as it demonstrates social interaction’s role in children’s function and development as consumers.

Moreover, it captures the processes involved in children’s consumer socialization which has received scant attention in the literature (Ekstrom 2006). In addition to how antecedents work to socialize children in trading, how the negotiation process and the act of trading influences a child’s valuation of objects is illustrated. These acts illustrate a dynamic two-way relationship between children and socialization agents. Children are actively engaged in the trading process using their current knowledge, skills and abilities to act in the trading situation. Simultaneously, from its enactment, children learn lessons about the objects traded, scarcity, value and the other children with whom they interact. These lessons are digested and learned to enhance their capabilities and their development as consumers.

This work also expands the understanding of barter as a core process for barter is delineated. Moreover, the processes of negotiation and valuation in barter for children are
clarified. Intuitively, it was understood that when two parties barter, each must have need for what the other has. But how this ratio is determined and achieved for each party has not been documented.

Moreover, an understanding of how valuation is also specified, the examination of which has also not been well explicated in the literature. What children use to determine the value of traded objects is quite complex. These valuations are filtered through the child’s subjective idiosyncratic preferences. Not only do children use attributes of the object, but they also assess the objects relation to a child’s overall inventory of possessions. Thus items that are unique are sought after in trade. But this uniqueness is not simply in relation to the child’s own inventory, but to that of other children known to him or her. Having rare, hard to find goods provides children status making them subject to envy from other children and sought after trading partners. These factors then interact within a child to form a determination of value for an object which then makes it tradable or not. This valuation process does not end though within a child as a child’s subjective valuation of an object is subjected to influence from other parties, who may or may not benefit from the exchange, who use persuasion tactics to alter a child’s valuation.

To delve deeper into understanding the valuation process children use, Study Two examines specifically the valuation and tradeoff process of traded goods in preference decisions narrowing in to understand children’s valuation of the object specifically. While Study One informed this question providing the attributes upon which children place value, how they use these attributes in the valuation of an object remained unclear. In demonstrating that these valuations systematically vary based on age and gender, a
contribution is made that advances understanding in the cognitive developmental literature which focuses on age differences. Study Two’s major contribution is in demonstrating that younger children base their preference decisions on perceptually salient attributes while older children and adults base decisions on cognitively salient features. Age differences are additionally found in Study Three which examines how the trading context interacts with a person’s social value orientation to systematically alter the decision to trade. Demonstrating that social value orientation influences likelihood of trading only among young children advances our understanding of how age affects economic decision making. Social value orientation’s influence on trading diminishes as children age suggesting that as children grow older that some other factor develops to temper SVO’s influence. Social value orientation, as a trait variable, and its effect within a consumer and economic context has also not been well-examined.

**Contribution to Marketing Practice**

This dissertation also makes managerial contributions to the field of marketing. In understanding the basis for how children of different ages make preference decisions, those who create products specifically for children can ensure that their products have specific attributes that appeal to the age group they are targeting. Marketers targeting younger children should have products that have perceptually salient characteristics to which children of this age group can form an attachment. A specific perceptually salient attribute that appealed to younger children was having characters that embodied cuteness. In and of itself, this contribution is not rocket science. Young children love cute things. More counterintuitive, however, is that as children age, their preferences shift to
attributes that require a deeper cognitive understanding. Thus those targeting older children should incorporate attributes that are more cognitively engaging.

When the findings of Study One and Study Two are thought of in concert, further insight can be obtained. When recruiting for Study One, children were asked to trade an object of mutual interest with their friends. Only groups with younger children traded silly bandz, whereas groups of both age groups traded Pokémon cards. When results from Study Two are applied, this makes sense. Silly bandz consist of only perceptually salient attributes, their shape, color and smell, and as such, appeal to the young. As children age however, an object consisting of only perceptually salient attributes may lose its appeal as it has no features that require deeper cognitive understanding. In other words, silly bandz do not possess any characteristics that require a child to think, a characteristic shown by Study Two to appeal to older children.

Trading cards, like Pokémon cards, on the other hand, were of interest to both younger and older children. Perhaps this interest that spans different age groups exists because it possesses both perceptually salient and cognitively salient attributes. When a child is young, he or she may be attracted by the picture of the creature developing preferences for some cards but not others. Older children may like perceptually salient attributes as well but additionally, are engaged cognitively by the cards more complex elements. Thus, trading cards have elements that allow a child as he or she ages to shift how they view and value them maintaining a child’s interest. Maintaining the interest of children over time is a highly desirable goal for makers of children’s products. The longer a product holds children’s interest, the more likely they will make additional
purchases in that product line. In addition, when older children are interested in a product, it attracts the attention of younger children as they aspire to be like their older peers. It also facilitates interaction and play between younger and older children. It was almost universally reported that younger children’s interest in the objects and trading was initiated by older children’s engagement. If the object only consists of cognitively complex attributes, then such engagement may be more unlikely as a younger child may have nothing to hold his or her interest.

Managerially, the study of children’s trading as a phenomenon also contributes to several intertwined managerial decisions, whether or not to use trading as a tactic to market a good, whether or not to embed scarcity into a product line and whether or not to make a good tradable. Findings suggest that trading is a socially engaging, fun activity for children. Parents reported that children’s interest in the goods often revolved around its trading, which suggests that trading as a marketing tactic would be effective given the correct product composition.

Pokémon card manufacturers also embed rarity and scarcity into their products making some cards harder to obtain through purchase. Embedding rare objects within a product line increases the value of these rare items which drives additional purchase behavior as children seek these hard to find items. This work finds that possession of rare objects increases a child’s status increasing the interest of other children in that child’s good, making the child a sought after trading partner or playmate. Additionally, this dissertation suggests that embedding scarcity into a product line encourages children to engage in trade as their ability to continually make purchases is constrained by their lack
of money and opportunity. Engagement in trading is simultaneously engagement with the good which sustains a child’s interest in the good.

Several factors about objects also were identified regarding encouraging its being traded among children. As parents reported, these items need to be relatively inexpensive amounting to cents on the dollar per item so that parents would not care that their children were trading it away. Secondly, instantiating collectability by creating a wide variety of items in the product line that varied across different attributes which would appeal to different kids also enhances the salability of the object. Periodic refreshing of the product line, that is, introducing and marketing new items in the product line renews interest in the good and its trading. Creating additional supplement products that complement the traded good as well as entire media franchises also engenders additional interest in the object among children.

Future Research

Cook (2009) argues that investigating children’s consumption behavior is essential to understanding consumer culture and consumption in general. Can lessons learned from the study of children’s trading be more broadly applicable? For example, findings indicate that disposition is an important motivator in that value is derived not only from the gain of an object but from the loss of an unwanted one. Is there potential to use this finding to advance our understanding of adult consumers? Would incorporation of disposition into other marketing transactions facilitate additional acquisition behavior? In some product categories such as the automobile market, disposition can be an inherent part of the transaction as consumers need a way to dispose
of the old in order to make room for the new. Given its fundamental importance to children, are there other markets in which disposition can be facilitated to encourage consumption? Other findings may be similarly applicable to adults such as the underlying valuation process uncovered from barter. Might adults evaluate and assess the value of an object in much the same way as children do in a barter situation? Do adults ever evaluate products and their value in terms of their overall set of possessions? Or do adults always use money and price as an objective standard for valuation?

In addition to the insight that might be afforded on adults, much still needs to be understood about children. For example, what accounts for social value orientation’s influence on the decision to trade among young children? Moreover, what about older children accounts for its lack of influence? Findings from Study One suggest that learning might play some role. But other research may point to other factors. For example, does self-esteem matter? Chaplin and John (2007) find that as children get older their materialism increases with an accompanying decrease in self-esteem. Instantiating high self-esteem decreases a child’s level of materialism. While the ages they examined do not map exactly onto the age groups studied in this work, as children’s self-esteem dipped in children ages 11 to 12 as compared to children who were 8 and 9, might self-esteem influence this behavior?

These studies were also rather limited in the children who were studied. Study One only studied children from middle-class families who were generally homogeneous in terms of race and socioeconomic status. Studies Two and Three pulled from a more racially diverse group of children sampling children from different socio-economic
classes and race. But all children resided in small to medium size Midwestern cities in the U.S. What would trading look like with children from different cultures and countries? Would the trading, negotiation and valuation processes be similar or different? Are there aspects of different cultures that would affect the enactment of trading behavior? For example, might children from cultures with an interdependent self-construal trade differently than children from cultures with an independent self-construal? Would they even trade at all having been raised in a culture where the goals of the group are promoted over one’s own goals?

Another arena for further study that would benefit this work is to conduct negative case analysis. Not all children trade. What characterizes children who do not trade and how might this characterization compare to those children that do? What accounts for their lack of engagement in this activity? For example, do these children have a very strong endowment effect? Or are they so strongly prosocial that they give their things away without any expectation or desire for anything in return? As one can see, while this dissertation has shed light on a number of issues, it also engenders a number of additional questions providing multiple avenues for future study.

In conclusion, this examination of children’s trading has developed insight into children as consumers and their consumer socialization through 1) understanding the meaning and purpose this activity has in their lives, 2) investigating how children make valuation and trading decisions and engage in bargaining and negotiation with each other, 3) examining the process of socialization that occurs between parents, siblings and peers and 4) discovering age differences in valuations and trading decisions. Through the
illumination of these factors, an integrated model of children’s trading is developed that demonstrates that children are active economic agents who can shape and control their economic needs dynamically affecting their environment while factors in their environment simultaneously shape their behavior and learning.
REFERENCES


American Marketing Association (2012) "Definition of marketing,"

Antolini, Tina (2012) "Bartering makes a comeback amid tight times,"

Arbogast, Sarah (2010) "Kids crazy over SillyBandz trading party,"


270


Brucks, Merrie (1985), "The effects of product class knowledge on information search behavior," Journal of Consumer Research, 12 (June), 1-16.


David-Marshall, Brian, Joost van Dreunen, and Matthew Wang (2009), "Trading card game industry white paper: From the T to the C to the G," , 23.


Faigenbaum, Gustavo (2005), *Children's economic experience: Exchange, reciprocity and value*, LaVergne, TN: LibrosEnRed.


Mental Health Foundation (1999), *Bright futures: Promoting children and young people's mental health*, London: Mental Health Foundation.


Moses, Louis J., and Dare A. Baldwin (2005), "What can the study of cognitive development reveal about children's ability to appreciate and cope with advertising?" Journal of Public Policy & Marketing, 24 (2), 186-201.


Pacione, Michael (1997), "Local exchange trading systems as a response to the globalisation of capitalism," 34 (8), 1179-99.


Piaget, Jean (1962), *Play, dreams and imitation*, United States of America: W.W. Norton & Company Inc.,


Rockwood, Kate (2010), "How spin master mixes tech and toys-- and keeps mattel looking over it's shoulder," *Fast Company*, April 1


Stouten, Jeroen, David De Cremer, and Eric Van Dijk (2005), "All is well that ends well, at least for prosel: Emotional reactions to equality violation as a function of social value orientation," *European Journal of Social Psychology*, 35 (6), 767-83.


Van Lange, Paul A. M., Wilman Otten, Ellen M. N. De Bruin, and Jeffrey A. Joireman (1997), "Development of prosocial, individualistic, and competitive orientations:


APPENDIX A

Child Assent Script

Child’s Assent Script

Assent Script for Children’s Trading Behavior Study

1. Hi, [child's name].
2. My name is Marie, and I am trying to learn more about how kids collect and trade their toys with other kids.
3. I was talking to your mom/dad and she/he says that you collect and trade some things. So I asked your mom/dad if it was okay to talk to you about what you collect and about whether or not you trade your toys with other kids. She/he said it was okay. Would you be willing to talk to me about your collections and things you trade?
4. Because I have a bad memory, I’d like to tape our conversation using this recorder so that I can remember everything you say. Is that okay with you?
5. If you want to stop at any time just tell me. Okay?
6. Do you have any questions before we start? [Clarify if necessary].
APPENDIX B

Children’s Semi-Structured Interview Outline:

So now I just want to ask you a few questions about trading, but just like before, you can stop at any time. Okay? And if you don’t want to answer any question or can’t come up with an answer that’s okay too

Warm-up Questions:
- So tell me how old are you?
- When’s your birthday?
- Grade?

Objects:
- Do you collect anything? Like what?
- What about INSERT PRODUCT do you like?
- How do you get those?

Trading:
- What about trading do you like?
- How often do you think you trade?
- With who? Where?
- What do you usually trade?
- How do you get this?
- Did you make any trades today?
  - What did you get?
  - Can we take a look at it?
  - What do you like about it?
  - When you decided you wanted something?
    - What made you want that?
- When you decide to trade something away, how do you decide that it’s okay?
  - Did you trade anything away today?
    - What made it okay to trade that away?
- What about INSERT PRODUCT makes you like them?
- Do you ever play the game with INSERT PRODUCT?
- What do you like about INSERT PRODUCT?
- Do you have any special INSERT PRODUCT?
  - Can you show them to me?
  - Can you tell me about them?
- Have you ever made a trade that you felt bad about later?
- When this happened, do you remember what made you do this?
Parent Semi-Structured Interview Guide:

- Can you tell me about your child’s trading?
  - Can you tell me about when Child first started trading?
  - How often does he trade now?
  - Where does he do trading and with whom?
  - What kinds of things are you aware of him trading?
- How does he get the things he trades?
- What do you think he likes about trading?
- How does he interact with his friends in this kind of trading?
- Have you ever had to get involved in trading?
  - What do you think he likes about the product?
  - How knowledgeable do you think he is about the things he trades?
  - How skillful of a trader do you think he is?
  - Allowance?
- How often would you say he spends his money?
- Tell me about your family life.
APPENDIX C

Children’s Questionnaire Study Two

COVARIATES & DEMOGRAPHICS

Demographics

1. How old are you?
2. What grade are you in?

Trading Behavior

3. Do you have any trading cards like Pokémon? Yes/No
   a. What do you have?
   b. If yes, how many cards would you say you have?
   c. Do you play with your cards? Yes/No
      i. How often do you play with your Pokémon cards? Daily, More than once a week, Once a week, A few times a month, once a month, less than monthly
   d. Do you trade your Pokémon cards with other children? Yes/No
      i. How often do you trade your Pokémon cards? Daily, More than once a week, Once a week, A few times a month, once a month, less than monthly

4. Do you trade toys or other items with other children? Yes/No
   a. How often do you trade with other children? Daily, More than once a week, Once a week, A few times a month, once a month, less than monthly

Attitude toward Pokémon

5. Do you like Pokémon or other trading card games?
   Yes If Yes, how much trouble do you think you have sharing:
      A lot
      Some
      A little
   No, by No, do you mean
      Hardly at all
Not at all

Knowledge

6. How much would you say you know about Pokémon cards?
   A lot
   Some
   A little
   Hardly Anything
   Nothing at all

Experience

7. How much would you say you play with Pokémon cards?
   A lot
   Some
   A little
   Hardly at all
   Not at all
APPENDIX D

Children’s Decision Making Study

PARENT QUESTIONNAIRE

Thank you for allowing your child to participate in this study. We just wanted to ask you a few questions about your child as some children may not be able to provide some of this information.

Child’s Name: ___________________________________________________________

(First name) (Last Name)

Child’s Birthday: _____________________________ _____________________________

(Month) (Day) (Year)

Grade: ________________ Zip Code: _________________________________________

1. Does your child have any of the following trading card games (check all that apply)?
   ☐ Bella Sandy – if selected, approximately how many cards does s/he have? ______
   ☐ Digimon – if selected, approximately how many cards does s/he have? ______
   ☐ Magic the Gathering – if selected, approximately how many cards does s/he have? ______
   ☐ Pokémon – if selected, approximately how many cards does s/he have? ______
   ☐ Yu-gi-oh – if selected, approximately how many cards does s/he have? ______
   ☐ Other ____________________________________________________________

2. Does your child participate in the Free School Lunch Program?
   ☐ No
   ☐ Yes

3. Is there anything such as a developmental or behavioral problem that might affect your son/daughter’s ability to participate in this study (please note: your child will still be able to participate in the study)?
   ☐ No
   ☐ Yes – If so, please tell me a little more about it:
   ____________________________________________________________
APPENDIX E

Additional Questions for Parental Questionnaire for Study 3

Now we’d like to ask some questions about your child that might help us understand more about how he or she might make decisions. For the following questions, please select the number that represents how much you agree with the statement about your child. 9 means you strongly agree that the statement describes your child and 1 means you strongly disagree that the statement describes your child. The numbers in between would indicate lesser levels of agreement and disagreement.

1. My child tends to hang on to things that should probably be thrown out.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

2. My child gets particularly upset when he or she loses something.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

3. It is important to my child that other kids like him or her.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

4. My child worries about other kids taking his or her things.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

5. My child has no trouble sharing his or her things.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

6. My child wants other kids to like him.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

295
7. My child does not like to let other kids borrow his or things, even if the other child is a good friend.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

8. In order to get along and be liked, my child can be what people expect him or her to be

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

9. My child enjoys giving gifts to other people.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

10. When his or her friends have things that my child does not have, he or she wishes she could trade places with them.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |

11. My child changes his or her behavior depending on who is around.

| Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Strongly Agree |
APPENDIX F

Additional Questions Children’s Survey for Study 3

Materialism: Possessiveness (Belk 1983)

1. Do you tend to hang on to things that should probably be thrown out?
   Yes Would you say you hang on to things that probably should be thrown out:
   All the time
   Most of the time
   Sometimes
   Every once in a while
   No Do you mean:
   Never or
   Hardly Ever

2. Do you get really upset when you lose something?
   Yes Would you say you hang on to things that probably should be thrown out:
   All the time
   Most of the time
   Sometimes
   Every once in a while
   No Do you mean:
   Never or
   Hardly Ever

3. Do you worry about other kids taking your things?
   Yes Would you say you hang on to things that probably should be thrown out:
   All the time
   Most of the time
   Sometimes
   Every once in a while
   No Do you mean:
   Never or
   Hardly Ever

Materialism: Nongenerosity

4. Do you have trouble sharing your things?
   Yes If Yes, how much trouble do you think you have sharing:
   A lot
Some
A little
No, by No, do you mean
Hardly at all
Not at all

5. Do you let other kids borrow or use your things?
   Yes  Would you say you hang on to things that probably should be thrown out:
         All the time
         Most of the time
         Sometimes
         Every once in a while
   No   Do you mean:
         Never or
         Hardly Ever

6. Do you enjoy giving gifts to other people?
   Yes  If Yes, how much trouble do you think you have sharing:
         A lot
         Some
         A little
   No, by No, do you mean
         Hardly at all
         Not at all

Materialism: Envy

7. When someone has something cool, do you ever wish you could trade places with them?
   Yes  Would you say you hang on to things that probably should be thrown out:
         All the time
         Most of the time
         Sometimes
         Every once in a while
   No   Do you mean:
         Never or
         Hardly Ever

8. Do you wish you had the things my friends have?
   Yes  Would you say you hang on to things that probably should be thrown out:
         All the time
         Most of the time
         Sometimes
Every once in a while
No  Do you mean:
   Never or
   Hardly Ever

Materialism (Goldberg et.al. 2003)

9. Do you think it is fun to think about all of the things you own?
   Yes  Would you say you hang on to things that probably should be thrown out:
      All the time
      Most of the time
      Sometimes
      Every once in a while
   No   Do you mean:
      Never or
      Hardly Ever

10. Is it important to you that other kids like you?
    Yes If Yes, how much trouble do you think you have sharing:
       A lot
       Some
       A little
    No, by No, do you mean
       Hardly at all
       Not at all

11. Do you want other kids to like you?
    Yes If Yes, how much trouble do you think you have sharing:
       A lot
       Some
       A little
    No, by No, do you mean
       Hardly at all
       Not at all
APPENDIX G

Social Orientation Scale

Instructions: In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to as simply the other. This other person is someone you do not know, and that you will not knowingly meet in the future. Both you and the other person will be making choices by circling either the letter A, B or C. Your own choices will produce points for both yourself and the other person. Likewise, the other's choice will produce points for him or her and for you. Every point has value: The more points you receive, the better for you, and the more points the other person receives the better for him/her. Here's an example of how this task works: In this example, if you chose A, you would receive 50 points and the other would receive 10 points, if you chose B, you would receive 50 points and the other would get 50. If you chose C, you would receive 50 and a half points and the other 30. So you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, please keep in mind, there are no right or wrong answer - choose the option that you for whatever reason prefer most. Also remember that points have value: The more of them you accumulate, the better for you. Likewise, from the "Other's:" point of view, the more points s/he accumulates, the better for him.

For each of the nine choice situations, circle A, B or C depending on the column you prefer most:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>48</td>
<td>54</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>28</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For each choice situation:
- **You Get**: The points you receive.
- **Other Gets**: The points the other person receives.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>28</td>
<td>48</td>
</tr>
<tr>
<td>2</td>
<td>56</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>52</td>
<td>52</td>
<td>58</td>
</tr>
<tr>
<td>6</td>
<td>50</td>
<td>50</td>
<td>57</td>
</tr>
<tr>
<td>7</td>
<td>51</td>
<td>56</td>
<td>51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

300