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“¡Chalinas a 20 Pesos!”: Economic Ideas Developed Through Children’s Strategies for  
Successful Selling In Oaxaca, Mexico

By

Yasmin Abdul Sitabkhan

A dissertation submitted in partial satisfaction of the  
requirements for the degree of

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in

Education

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Geoffrey B. Saxe, Chair

Professor Na’ilah Nasir

Professor Kaiping Peng

Fall 2012

## **Abstract**

### **“¡Chalinas a 20 Pesos!”: Economic Ideas Developed Through Children’s Strategies for Successful Selling In Oaxaca, Mexico**

by

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**Doctor of Philosophy in Education**

**University of California, Berkeley**

**Professor Geoffrey Saxe, Chair**

The purpose of this dissertation is to explore the economic ideas of indigenous Triqui children between the ages of 5-15 who sell artisanal goods in Oaxaca, Mexico. I report findings from two studies that investigated (1) sellers’ strategies for successfully selling goods, and (2) children’s economic ideas linked to their selling strategies.

In Study 1, I documented two recurrent problems that sellers found themselves in and the selling strategies they used to solve these problems through observations, home visits, shadowing of sellers, and interviews. The recurrent problems were (1) how to convince a customer to purchase a good, and (2) how to interact with a customer that attempted to bargain. Sellers used sales pitches as solutions to these predicaments, where they attempted to convince the customer to purchase the good at the stated price by emphasizing different aspects of the goods. Some sales pitches emphasized the currency price of the good, others emphasized the quality/esthetic of the good, and yet others emphasized the utility of the good.

To better understand links between seller’s engagement in recurrent problems and their developing economic ideas, I conducted systematic interviews with sellers (n=29) in Study 2. I sought to characterize children’s economic ideas of exchange value (the value of goods in an exchange) and price setting through interview tasks involving fictional bartering and currency trades. I contrasted sellers’ responses on the interview tasks with those of an age-matched control group of non-sellers (n=15). Findings revealed that sellers used price to determine the exchange value of goods more frequently than non-sellers. In contrast, some non-sellers assessed the exchange value of goods by referring to their own individual wants and needs, where goods were things to “own”, not things to “sell”, and therefore may not necessarily have a currency value. Sellers also revealed ideas about price setting that were based on rudimentary notions of profit.

This study made visible the knowledge that a historically non-dominant group of children develop, and thus contributes to literature that seeks to provide an alternative to deficit models through investigation of development in non-traditional contexts.

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recorder and constantly ask questions. I am indebted to their openness and willingness to participate in the study. This dissertation is dedicated to the young sellers in Oaxaca.

## **Chapter 1: Introduction**

Children who live in poverty in developing countries often must work for a living in order to help support their families. Often, these children do not have access to consistent and high quality formal schooling, and are thus viewed as lacking in knowledge. However, studies have shown that children develop various forms of knowledge through participation in out-of-school activities (Guberman, 1996; Khan, 1999; Nasir, 2000; Saxe, 1991; Taylor, 2009).

In this dissertation, I report on a multi-method study in which I investigated the knowledge of a group of children between the ages of 5-15 who earn money through selling artisanal goods for a living. These children live in Oaxaca, Mexico and are members of the Triqui indigenous group. Similar to other indigenous populations in Mexico, Triqui children and their families live in poverty (INEE, 2007; Parker et. al., 2002). The money children earn from selling is a source of the family income; being a successful seller is therefore consequential for these families' livelihoods. In this dissertation, I focus on young sellers' strategies for successfully selling goods, and the links between children's strategies and developing economic ideas of the value of goods.

Although there may be different ways children define successful selling, key to being successful is earning money through the exchange of goods. For some sellers, success in selling may be defined by an authority figure's approval for selling a certain amount of goods. For other sellers, success may involve imitating the behavior of an older seller as he or she sells goods. Yet other sellers may define success as a qualitative or quantitative maximization of total money earned from exchanges, leading to an improvement of one's situation in life. Although there are different ways success may be defined, I treat the notion of "successful selling" as having an outcome of earning money through exchanges. Successful selling is core to children's activity in a selling practice, and a possible context for the generation of economic notions.

To frame this study, I first review prior studies focusing on economic practices and children's practice-linked cognitive development. I then review prior empirical work that has investigated children's development of economic understandings.

### **A Focus on Economic Practices**

Prior empirical research has established economic practices such as buying and selling as sites for the development of arithmetical knowledge (Guberman, 1996; Khan, 1999; Saxe, 1991; Taylor, 2009). Studies have shown that children develop numeric and arithmetic understandings through exchanges, such as using coins and bills in different ways as a support in calculating total price (Guberman, 1996; Taylor, 2009), and developing arithmetic strategies for pricing goods for sale (Saxe, 1991).

Saxe (1991) conducted a comprehensive study in northeastern Brazil investigating the mathematical understandings of young candy sellers. Sellers commonly priced their goods (wholesale boxes of candies of 30, 50, or 100 units of candy) by counting the individual candy bars according to how they would sell them (e.g., three candy bars for Cr\$1000) to determine how much total revenue they would earn once all the candies in a box were sold. If the total revenue earned at that particular pricing structure was double, sellers began vending; if not, they would begin the computations again with a new pricing structure for the candies (e.g., two candy bars for Cr\$1000).

The pricing of goods, while certainly a source for the development of arithmetical knowledge, may also be a source for the development of economic ideas. In the example above,



Brazilian candy sellers created arithmetical strategies for calculating the total revenue they would earn at a certain price. Understandings of how to price candies, however, may involve more than just cost calculation; it may involve other strategies such as knowing how high or low to price, which types of candy are the easiest or most lucrative to sell, and how to target customers most effectively.

Saxe (1991) points to economic issues that emerged as children were deciding on the price of candies. The non-selling children that were interviewed on similar tasks had difficulty in solving problems related to pricing a good. Saxe discusses how non-sellers' difficulty in pricing a box of candy was related to

...understanding that the price for which one sells a box must be coordinated with the price that one pays for the box plus compensation for work produced in selling (profit)...Other children appear to compensate work entailed in selling by creating a profit margin; however, they do not appear to understand that the effect of setting the price too high is the risk of reduced sales which, in turn, affects profit (p.90-91).

Sellers, on the other hand, were more likely to produce responses that demonstrated knowledge of the economics of pricing, where total revenue and profit are important considerations. Successful pricing involved more than arithmetical strategies; therefore, the arithmetical strategies are coordinated with the economic ideas of total revenue and profit when pricing.

In his study, Saxe focused on recurrent mathematical problems that emerged for sellers as a context for the generation of new arithmetical strategies. Children developed strategies to price candies as a means to solve recurrent problems that emerged at various points in the structure of the selling practice, such as calculating the total price of a box of candies if sold at a particular price ratio.

In the studies that I report in this dissertation, I shift the focus from sellers' solutions to recurrent mathematical problems to recurrent economic problems. With economic problems, successful selling is the focus, not accurate numerical strategies. In other words, the pricing of candies can be viewed in terms of the strategies sellers are using in order to ensure that customers will buy the candy. The analysis of recurrent problem shifts from calculation strategies for the total price of a box of candies to pricing strategies that will ensure that customers will buy the candies and will ensure that the sellers earn money from the sale.

To further explain my analytic focus on recurrent economic problems, I turn to an example from a study I conducted in Mumbai, India. I found that young sellers used strategies to try to convince customers to purchase goods, and thus ensure successful selling. In this study, I documented how young sellers developed arithmetical strategies for calculating the total cost of goods (Sitabkhan, 2009; Sitabkhan, 2012). To do this, I identified several recurrent mathematical problems that emerged in my observations of children selling goods.

In one exchange, an 11-year-old seller was vending hairclips priced at 5 rupees each. When a customer decided to buy seven of them, the seller quickly calculated the total cost (35 rupees). After this, the customer gave the seller a 50-rupee note; the seller quickly produced a 10-rupee note, asking the customer to buy one more hairclip because she did not have enough change. So, instead of providing 15 rupees in change (50-rupee note minus the 35 rupees owed for the hairclips), the seller provided 10 rupees in change, with the addition of an extra hairclip. In this exchange, certainly mathematical problems emerged for the seller to solve (e.g., what is

the total price of the goods, how much change should I provide?); in fact, the seller displays quite flexible mathematical thinking at the end of the exchange. However, consider the move the seller made at the end of the exchange. The seller convinced the customer to buy one more hairclip by claiming she did not have enough change.

What was the recurrent problem that the seller was trying to solve in her effort to engage a customer and complete the exchange? Was it solely a mathematical problem of calculating change, or was it a problem that engaged with the objective of successful selling, and thus involved more than mathematical knowledge? I argue that, at the end of the exchange, the seller was trying to convince the customer to buy more goods. In this process, she transformed a successful exchange into an even more successful exchange and thereby increased her revenue. In addition to a mathematical strategy, the seller also generated a strategy to make more money and thus maximizes her revenue by convincing the customer to buy one more hairclip (because the seller said she did not have change).

The two studies discussed above illustrate the emergence of recurrent problems linked to successful selling strategies. In the Saxe (1991) study, the problem was to price candies in such a way as to consider total revenue in coordination with knowledge of what customers may be willing to pay. In the study with children in Mumbai (Sitabkhan, 2012), the problem was how to convince the customer to buy more goods to increase revenue.

I posit that engagement with recurrent problems emerging from the objective of successful selling is a context for the development of economic ideas. For example, consider again the comparison of the selling and non-selling children in Brazil with candy pricing tasks. Non-sellers often priced the candy too high, not realizing that too high of a price would discourage customers to buy their goods. Sellers were more aware of this risk, and thus reflected some everyday knowledge of customer demand. Repeated engagement with such problems may lead children to develop understandings about the monetary value of different goods, as well as how qualities of a particular good are a factor in the determination of the price of that good. In the next section, I focus on the economic ideas that may be developed through engagement in recurrent problems in a selling practice.

### **A Focus on Economic Ideas**

What kinds of economic ideas might children be developing as they engage with problems of making sales? How might one analyze the nature of the economic ideas that children might be developing?

One approach to frame an investigation would be to look to the field of economics, a field in which basic concepts such as supply and demand have been elaborated in varied ways to model economic activity; this modeling is the focus of explicit instruction in school. Using such models, one might probe to what extent do young sellers understand dependencies between supply, demand, and price? But, as I will argue subsequently, there may be little resemblance between such economic models and the productive economic ideas that child sellers' are developing in their everyday economic activities. Indeed, to use such frameworks as a basis to probe economic understandings of child sellers would lead investigators to largely side step children's developing economic ideas.

In the studies that I report with young sellers in Oaxaca, I take a different tack, focusing on the kinds of economic predicaments that young sellers find themselves in through ethnographic study. A principal concern is with the economic ideas that emerge from children's efforts to solve local economic problems that emerge in exchanges.

To organize this study, I find a useful frame in Vygotsky's (1986) differentiation between scientific and spontaneous concepts. I use Vygotsky's general framework to explore differences between economic concepts that are the topic of instruction in school and everyday economic ideas that may be developed in a selling practice such as the one in Oaxaca.

In order to understand the nature of the economic ideas that are the focus of this dissertation, I draw on Vygotsky's (1986) differentiation between scientific and spontaneous concepts. Economic concepts, such as price determined as a function of supply and demand relationships, are the product of a long history of scholars' intellectual work to model and understand economic activity and the topic of instruction in schooling. Therefore, these concepts are distant from the everyday activities of children in a selling practice. I instead focus on children's spontaneous economic ideas that may develop as children are engaged in exchanges with customers. Although prior empirical literature has investigated children's development of economic concepts (Berti & Bombi, 1981; Berti & Grivet, 1990; Leiser & Halachmi, 2006; Siegler and Thompson, 1998; Thompson & Siegler, 2000), this work provides limited insight into the economic understandings that children engaged in economic practices may be constructing through their selling activity.

**Scientific and Spontaneous Concepts.** Vygotsky (1986) identified two types of concepts: scientific, which are generalized concepts acquired through formal instruction, and spontaneous, which are localized concepts acquired through everyday activity. Scientific economic concepts, such as the supply-demand model discussed above, are the product of a long history of scholars' intellectual work to model and understand economic activity. These concepts are presented in high school and entry-level college courses in the United States (see, for example, California State Social Science Standards 1998).<sup>1</sup>

In a supply-demand model, supply refers to the goods that are available to individuals; supply may include the manufacture of a good and the availability of a good. Demand refers to how much of that good individuals want, and frequently takes into account how much individuals are willing to pay for a particular good.

Supply-demand models take local exchanges that are broadly distributed among multiple actors across multiple locations, aggregate them, and then abstract these local exchanges into a model that explains how a good's price is determined by shifting relationships between the supply of goods and the demand for them. In this model, no one individual completely controls the price of goods; price is determined by the actions of many actors that may not be conscious of the effects of their actions on prices.

Spontaneous concepts emerge from the aggregation of specific, localized interactions. Through interactions with their world, children create local meaning of concepts. For example, children may develop local ideas of the exchange values, or values of goods in an exchange, that is specific to the goods being exchanged. The exchange value of goods may be determined in different ways by children, such as basing the value on individual wants and needs. .

**Empirical Work on Children's "Scientific" Economic Concepts.** Prior empirical work on the development of economic ideas in children illuminates developmental trajectories in children's understandings of scientific economic concepts, such as supply/demand relationships (Berti & Bombi, 1981; Berti & Grivet, 1990; Leiser & Halachmi, 2006; Siegler & Thompson,

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<sup>1</sup> The standards cover the introduction of a free market economy based on the work of Adam Smith, as well as coverage of the supply/demand model.

1998; Thompson & Siegler, 2000). Although important, the work provides little insight into the spontaneous economic ideas that young children may develop through everyday exchanges. I review the prior work with an eye towards what may be invisible in this approach in the documentation of children's developing economic ideas.

In research on children's developing "scientific" economic ideas, researchers have used clinical interview methods. The populations of focus have been preschool and elementary school children. Often, children are provided with scenarios of economic activity and asked to provide explanations of what would happen. For example, in a study by Siegler & Thompson (1996), a protagonist might be portrayed as selling lemonade on a hot day, and the participant would be queried about what would happen to the price of the lemonade with the rising heat. Other times, children are asked pointed questions about their understandings of economic concepts. For example, Danziger (1958) asked children, "What does the shopkeeper do with the money he earns?"

The exclusive use of clinical interview methods has sidestepped children's economic behavior in everyday activity, and how economic ideas are generated as solutions to local problems. By beginning with the supply-demand model, and querying children on their understanding of this model, prior researchers have, for example, assumed that children understand that the exchange values of goods are equated with a currency price; this may or may not be true depending on children's everyday experiences with exchanges. For example, a child may evaluate the exchange value of a good on their wants and needs, or the quantity of good in a given exchange.

In one study on children's development of understandings of supply-demand relations in which clinical interviews were used, Berti & Grivet (1990) presented children between the ages of 8-13 with stories of a fictional village that sold different food products. The stories provided various scenarios that corresponded to changes in supply and demand, and children were queried about the outcome of these changes on the price of food products. For example, children are asked what would happen to the price of lettuce when there is a supply increase due to good weather, or the effects on the price of lentils due to a demand decrease when the doctor says that lentils are not nutritious.

They then presented various analyses that provided a trajectory for children's developing understanding of price determination as a function of supply-demand relations. Berti & Grivet (1990) found that

...it is easier for children to realize that customers buy more or less of some goods as a function of their prices, than to understand that the prices of goods change as a function of the quantity demanded or supplied (p.41).

The authors conjecture that children have difficulty understanding the supply/demand relationship with regard to pricing as it "involves predicting the aggregate effects of the actions of many different actors" (p. 38). For example, children tended to believe that price is an inherent quality of the good being sold, and made assumptions based on this idea, rather than being aware of the role of many different actors in an economic system.

Leiser & Halachmi (2006), furthering the work done by Berti & Grivet (1990), found that children are first able to understand demand to price relationships, whereas supply to price relationships were more difficult for children to understand. The authors conclude this result is

explained by the lack of children's everyday experiences with economic systems; to a naïve child's eye, the vendor arbitrarily sets the price, and supply is invisible to the child. In contrast, demand relationships are easier to observe, such as children observing customers' desires for certain goods.

The studies above reveal children's understanding of "scientific" economic concepts in their investigations of developmental trajectories of particular relationships between supply, demand, and price. However, the results of the studies also point to the importance of children's everyday experiences as a factor in their difficulties understanding the complex model of supply and demand. As Leiser & Halachmi (2006) noted, certain aspects of the supply-demand model (such as supply to price relationships) are difficult for children to grasp precisely because children do not have experience with economic systems to develop an understanding of this relationship through everyday activity.

The prior empirical work, while noting the importance of everyday activity, offers little in terms of interpreting and exploring the economic ideas present in children's activity. In this dissertation, I ask, what kinds of ideas *do* children develop through selling activity? Do children develop ideas about supply and demand that, although distant from the model presented above, are rooted in their everyday experiences?

***Spontaneous Economic Concepts.*** Children in a selling practice are engaged in a wide variety of exchanges on a daily basis. Some involve goods traded for currency, and others involve bartering of commodities such as a necklace traded for another necklace. Through exchanges, children may construct ideas about the exchange value of goods; in addition, as well as how to set price that supports sales and at the same time maximizes profit. These developing ideas may be local to the seller's exchanges and distant from models that students may learn in school, like supply and demand that aggregate exchanges across a field of actors. Such local developing ideas about exchanges, what Vygotsky termed "spontaneous concepts," would be of immediate concern to child sellers'.

Consider the following observation of a 9-year-old seller in Oaxaca, in which the seller is engaged in an exchange with a customer. What ideas about exchange value and price might this young seller be developing?

*Observation #1: A 9-year-old seller approaches two customers sitting at a restaurant table in the main plaza, selling two types of necklaces. One type of necklace cost 10 pesos and is made of beans and seeds; the other type of necklaces costs 20 pesos and is made of stones. The seller attempts to vend the 20-peso necklaces to the two customers by carefully choosing two 20-peso necklaces that match the clothes of the customers and putting the necklaces on them. When one of the customers shows interest in the 10-peso necklace, the seller tries to refocus their attention on the 20-peso necklace by pointing out that they are made of stones. She states that it took her a long time to make the necklaces. After some time, one of the customers decides to buy one 10-peso necklace.*

In this observation, the seller used various strategies to convince the customers to buy a necklace. She first showcased the 20-peso necklace, then carefully chose two necklaces and placed them on the customers, emphasizing the quality of the necklaces. As the seller did this,

she may have drawn upon her knowledge that the sale of the 20-peso necklace would increase her total earnings. The seller then explained the process of making the necklaces, again trying to convince the customer that the higher priced necklaces were worth the higher price.

What are the economic ideas that may have been generated through the strategies for successful selling? First, in order to begin the exchange, the seller needed to state the value of the necklaces so that the customer could engage with the seller in the exchange; the seller generated a solution by stating the value of the necklaces as a currency price. In this interaction, the exchange value of the necklaces appeared to be equated with the currency prices of 10 and 20 pesos, respectively. Second, in order to maximize revenue earned, the seller needed to generate a strategy in which she was able to convince the customers to buy the necklaces with the higher price. To do this, the seller appeared to link the prices of the necklaces to the quality of the necklaces when she emphasized the process of making the necklaces. The seller may have rudimentary ideas of the ways in which price is determined by drawing upon her knowledge of the production and raw materials of the necklaces (i.e., supply).

### **Outline of the Dissertation**

In this dissertation, I report on a multi-method study of 5- to 15-year-old sellers. I document the recurrent exchanges with which sellers engage, the kinds of problems that sellers are engaged with as they prepare for and participate in exchanges, and the economic thinking of sellers related to the exchanges.

Chapter 2 is an ethnographic study that includes three interrelated sections. The first documents the structure of the practice; I detail the phases of the selling activity in the course of a selling day. The second section focuses on the types of exchanges with which sellers engage: currency exchanges and barter exchanges. The third section documents the predicaments of selling that emerge as sellers work to persuade customers to buy goods.

Chapter 3 presents results from interviews in which I probed sellers' and non-sellers' understandings of exchange value and price. I discuss results that point to nuances in understandings of exchange value, as well as different patterns in understandings of price and how price is determined. Throughout Chapter 3, I detail differences between sellers and non-sellers in order to establish links between sellers' development of economic understandings and engagement in the selling practice.

Chapter 4 returns to my discussion of the treatment of sellers' developing economic ideas linked to exchanges. I reflect on the results of the ethnographic and interview studies, pointing to the ways in which each sheds light on children's economic ideas that are generated in a selling practice. I then reflect on the lack of a consideration of how children tailor their talk and actions to individual customers. I point to future work that might take this into account.

## Chapter 2: The Selling Practice in Oaxaca

The purpose of this chapter is to characterize young children's economic activity as they engage in selling bracelets, necklaces, and other goods in Oaxaca, Mexico. I begin with detailed information about the site of the practice and the focal population of children. The methods and results sections are organized according to three sections: (1) the structure of the selling practice, (2) the types of exchanges that occur, and (3) the recurrent problems that emerge in exchanges. To detail the different strands, I draw on data from the ethnographic study.

### Oaxaca City, Mexico

Oaxaca City, the site of my research, is the capital of one of Mexico's poorest states, Oaxaca (for location, see Figure 1<sup>2</sup>). According to the National System of Municipal Information (SEGOB), Oaxaca City has a population of approximately 265,000 people. Oaxaca City is home to numerous indigenous groups, including Zapotec, Mixtec, and Triqui groups. The focal population of this dissertation is Triqui children residing in Oaxaca City.

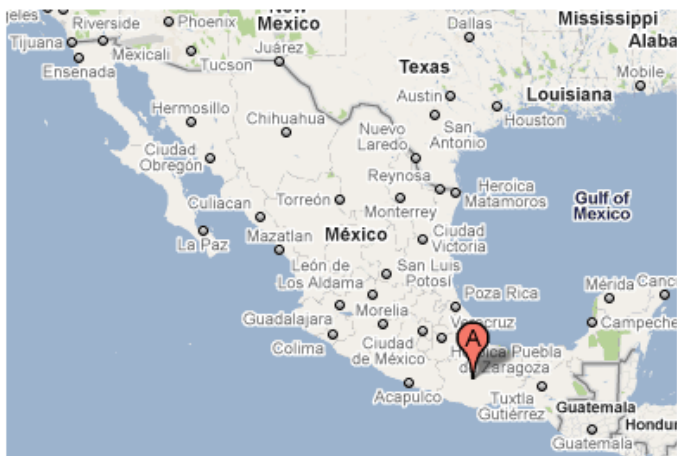


Figure 1. Map of Oaxaca

The Triqui indigenous group, which originates from San Juan Copala (a rural area of the state approximately 130 km. from the city of Oaxaca), is one of Mexico's poorest groups; because of this, there are high migration rates as individuals and families seek work in other parts of Mexico and the United States. Since 2006, migration to Oaxaca City from San Juan Copala has increased due to escalation of violence linked to a political conflict with the government of the state of Oaxaca. Many families with young children flee to Oaxaca City to look for work as well as to escape violence. Often, these families are composed only of mothers and children. Fathers remain in the home region, migrate to the United States seeking work, or are victims of violence and police activity.

Upon taking up residence in Oaxaca City, mothers and children often find limited pathways open for them in order to earn a living. Below, I consider how a Triqui family that has

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<sup>2</sup> The more complete name of the city is Oaxaca de Juaréz.

recently taken up residence in Oaxaca City may view the options available for them in their new life.

### **Recent Residence in Oaxaca City**

Consider a mother and her children who have recently arrived in Oaxaca City. The family may have fled their home village, San Juan Copala, due to violence and/or a lack of opportunity to earn a living. The mother arrives in the city and begins to search for work. However, she finds that obtaining a job is much more difficult than she thought. The mother did not attend formal schooling and does not know how to read or write. She speaks the Triqui language, and cannot communicate in Spanish. She realizes that her options are limited for finding work.

The mother and her children settle into their new home in Oaxaca City, which they are sharing with distant relatives. The home is a small, semi-permanent structure made with corrugated metal and dirt floors, with no access to plumbing, sewage systems, or electricity (see Figure 2). In very cramped spaces, there are, at any point, seven to ten people living together. Other Triqui families, consisting largely of mothers and children, also live nearby in the semi-permanent structures.



*Figure 2. Typical Homes of the Triqui Children*

While in her new home among other Triqui families, the mother sees some Triqui children are wearing school uniforms and attend school for 3 hours/day. She learns that other young children do not attend school because they do not have the proper documentation needed to be able to enroll in a government school (i.e., birth certificates and immunization records). In fact, almost 9% of the young population of Oaxaca City does not receive any type of formal instruction and 13 % of the population of Oaxaca City does not complete primary school.

She sees that many Triqui mothers and older children spend their mornings making bracelets and necklaces. They weave the bracelets from brightly colored string. They dye beans and seeds to later string together to make necklaces. Often, younger children fetch water and wash the bracelets in the communal sink, and then hang them up to dry in the sun.

As she orients herself to Oaxaca City, the mother notices that there are numerous Western and Mexican tourists that travel to Oaxaca. This is due to Oaxaca City's reputation for preserving a rich cultural heritage of indigenous groups, as well as UNESCO's classifications of Oaxaca City as a World Cultural Heritage site (<http://whc.unesco.org/en/list/415>). In fact, almost 77% of the state of Oaxaca's economy is generated through the tourism industry, and much of



that is centered in Oaxaca City (<http://www.local.gob.mx/work/templates/enciclo/oaxaca/municipios/20067a.htm>).

The mother also notices that the tourism industry is concentrated in the historic center of Oaxaca City, which includes ample restaurants, stores, and museums all targeted towards tourists. The historic center consists of a main plaza, known as the Zócalo, and a pedestrian walkway, known as Alcalá. Figure 3 is a map of the historic center of Oaxaca City. The red star on the map indicates the main plaza, and the solid red line indicates the pedestrian walkway. Figure 4 contains photographs of the main plaza and the pedestrian walkway.

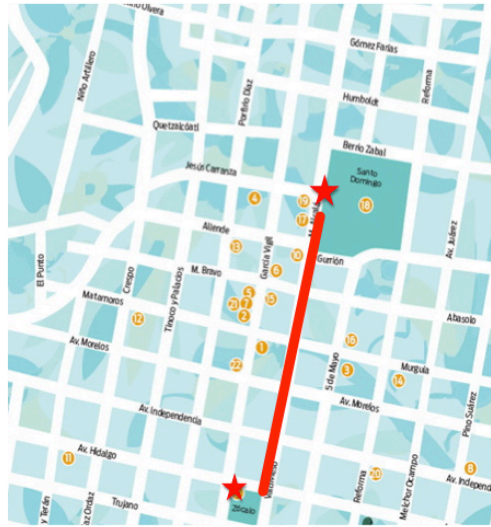


Figure 3. A map of the historic center of Oaxaca City.



Figure 4. (a) The main plaza (Zócalo) (b) The pedestrian walkway (Alcalá)

The newly arrived mother may then observe Triqui children and adults, identified by their red Huipil<sup>3</sup> selling artisanal goods in the main plaza (see Figure 5). The Triqui children in particular are selling shawls, necklaces, and bracelets to customers seated at outdoor restaurant tables in the main plaza. The mother may also notice that although the restaurant security guards do not allow adult sellers to vend to customers seated at the restaurant tables, they do allow the children to sell.

<sup>3</sup> The Huipil is the traditional dress of Triqui women and girls.



*Figure 5.* A Triqui woman wearing a Huipil.

The mother watches the Triqui children approach customers seated at tables in restaurants where the price of a coke is just under the daily monetary intake of entire Triqui families. The menu prices at the restaurant lead her to see that the restaurants are productive sites for selling as tourists and wealthy Oaxacans are the only ones who frequent them. She may notice that the young sellers sit down at the tables for extended periods of time with customers, and talk to the customers to try to convince them to buy goods. This frequently results in customers purchasing the goods the children are selling, and sometimes even buying the children food and drinks.

As this mother and her children begin their new life in Oaxaca City, there are constraints on the options available for them to be able to meet their immediate and basic needs. Selling artisanal goods may be one of the only options available, and although the mother may wish for her children to only attend school and not work, she must also consider the basic needs of her family. For example, as described above, the restaurants in the center of the city do not allow older, adult sellers to vend to customers, but do allow children to vend. Since earning money is a primary, basic concern, the mother may not have other options available for earning money other than having her children sell. At the same time, school may not be an option because of a lack of papers and/or lack of immunization records.

The story of the Triqui family above is only meant to be illustrative of the constraints that are placed on struggling Triqui families in Oaxaca City. Although the constraints are not a focus of this dissertation, it is important to be aware of the larger context in which the selling practice is situated and organized in response to, and to locate children's economic activity within the larger context. In Chapter 4, I return to a more focused discussion of sociopolitical constraints. For now, I turn to the organization of the selling practice in Oaxaca City.

The results of this chapter are presented in three sections, as shown in Figure 6. Section 1 begins by detailing the three phases of the practice that sellers move through in the course of their selling day. In Section 2, I consider in great detail a single phase, the Sell Phase, exploring the frequency with which sellers engage in currency and barter exchanges. In Section 3, I focus on the currency exchanges that occur during the Sell Phase to analyze the recurrent problems that arise for children as they exchange with customers, including consideration of the arithmetical strategies that are interwoven with children's engagement in the recurrent problems.

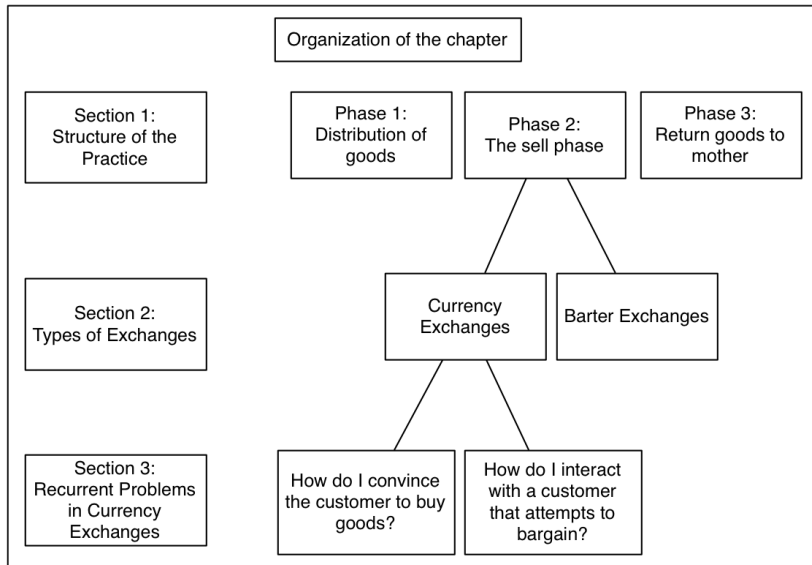


Figure 6. The organization of Chapter 2

In each of these sections, I draw on data from the ethnographic study, which included observations in the main plaza, demographic interviews with young sellers, home visits with selling families, and shadowing two sellers as they vended goods. I elaborate on the methods below.

## Methods

### Setting

The selling practice has two principal locations in the historic center of Oaxaca City: (1) the main plaza, and (2) the pedestrian walkway.

**Main plaza.** The main plaza is located the heart of Oaxaca's historic center. It is a large plaza, containing a museum, a historic church, restaurants, benches, and ample vendors selling a large variety of goods. Like many cities in Mexico, the main plaza in Oaxaca is a central meeting place for locals and tourists alike, and is always full of people. Many people linger in the main plaza for extended periods of time, as it provides a respite from the hustle of the city.

Children's selling activity is concentrated in the outdoor restaurants that are located around the edges of the plaza (see Figure 7). Children are mobile and approach the customers seated at tables to sell their goods.



*Figure 7. The restaurant tables in the main plaza*

**Pedestrian walkway.** The pedestrian walkway is located in the historic center of Oaxaca. It stretches for five blocks, beginning at the main plaza, and ending at a smaller plaza containing a church and museum. The walkway is lined with restaurants, museums, and stores. There are often religious processions, performers, and musical groups weaving their way up and down the pedestrian walkway.

Children's selling activity on the pedestrian walkway is concentrated in an outdoor, semi-permanent market that is located about four blocks from the main plaza (see Figure 8). The children that sell in this outdoor market are not mobile; they sit at the stalls with adults, where their goods are on display.



*Figure 8. The outdoor market on the pedestrian walkway*

The children that sell goods in this market sell less frequently than the children in the main plaza. Children in the outdoor market sit at the stalls with mothers and older sellers; because of this, most young sellers do not conduct transactions alone, but rather with the support of older sellers. For example, a young seller may participate in an exchange by talking to a customer, but may not handle any currency. Because of this, I conducted all observations in the main plaza.

### **Procedures and Participants**

I conducted various waves of data collection in the ethnographic study over the course of 9 weeks. Table 1 below provides an overview of the procedures. Each of the procedures that were designed to reveal (1) the structure of the practice, (2) the types of exchanges young children engaged in, and (3) the recurrent problems that emerged in exchanges.

Table 1. *Overview of Data Collection Procedures*

Sections of the study	Methods
(1) Structure of the practice	Observations in main plaza Demographic interview (n=33) Home visits Shadowing (n=2)
(2) Types of exchanges that occurred	Observations in the main plaza Interview on Participation in Exchanges (n=24)
(3) Recurrent problems in exchanges	Observations in the main plaza Shadowing (n=2)

I used a variety of procedures to illuminate the three sections of the chapter. I conducted observations in the main plaza, interviews (demographic and participation in exchanges), home visits with selling families, and shadowing of young sellers. Although some procedures are listed multiple times in the table above, such as observations in the main plaza, each procedure targeted a different aspect of the three sections of the chapter. Below, I explain in more detail the ways in which each method was used to target the three sections.

**Structure of the practice.** To illuminate the structure of the selling practice, I drew from four methods: (1) observations in the main plaza, (2) a demographic interview (n=33), (3) home visits with selling families, and (4) shadowing of young sellers (n=2).

For the observations, I observed all children between the ages of 5-15 that were selling in the main plaza. Based on observations, I estimate that there were approximately 35 children selling goods; 25 of these children sold everyday. I observed sellers over the course of 7 weeks from 2pm-10pm everyday. I documented recurrent phases in the selling practice through collecting detailed field notes in which I included (1) the order of children’s activity from arrival in the main plaza to leaving at the end of the day, and (2) what occurred in the activity itself.

For the demographic interviews, my purpose was twofold. My first purpose was to acquire basic demographic information about the sellers, such as how long they had been selling and their schooling history (see Appendix A). Second, in order to corroborate my observation data, as well as illuminate aspects of the selling practice that may have been unobservable (i.e., how they learned how to sell, how they priced their items, what they did with their money at the end of the day), I asked children questions that revealed aspects of their daily selling activity (see Table 2). I interviewed children in Spanish at the site of their work, often finding a quiet bench or sidewalk in the main plaza.

Table 2

*Sample of Demographic interview questions*

1. Who taught you how to sell and the price of your items?
2. When you got to the Zócalo today, what did you do in the beginning? Next?
3. What do you do with the money and things you are selling at the end of the day?

I invited all children between the ages of 7-15<sup>4</sup> whom I observed selling in either the main plaza or the outdoor market to participate in the interviews. Thirty-three children participated. Thirteen children were between the ages of 7-8, 13 children between the ages of 9-11, and seven children between the ages of 12-15. Of these children, 19 were female, and 14 were male. Twenty-nine out of 33 children were enrolled in school, according to self-reports.<sup>5</sup> Twenty-six children sold in the main plaza; 7 children sold in the outdoor market.

For the home visits, I visited two Triqui families that sold goods. I noted features of the home environment, including ways in which goods were produced that were later sold by children. For these visits, I accompanied staff from a local non-profit organization that worked with the young sellers<sup>6</sup>. Each family consisted of a mother and three to four children that actively sold in the main plaza. The home visits lasted for 2 hours each in which I noted aspects of the home environment. I also spoke informally with the mothers, about the production of goods as well as the structure of children's daily activity.

For the shadowing, I followed two sellers who I observed selling everyday as they sold goods. My guiding interest in shadowing was to further understand the structure of the selling practice. To this end, I noted the number of approaches the seller made to customers, the time spent with each customer, and the number of resulting sales.

Prior to conducting the observations, I was concerned that my presence during the shadowing would impact the interactions between the child and the customer. To mitigate this, I gave each child an audio DSS recorder that was attached to their belt or shirt, but remained hidden from view. I then followed the young seller from a reasonable distance and took notes on the time and general characteristics of each exchange that were visible from my vantage point. After the shadowing, I transcribed the audio recording and matched it to my observational notes. Seller one, a 10-year-old male, was shadowed for 36 minutes. Seller two, a 9-year-old female, was shadowed for 25 minutes. Seller one did not attend school; seller two did attend school.

**Types of exchanges sellers engage in.** To illuminate the different types of exchanges that young sellers engaged in, I drew from two methods: (1) observations in the main plaza and (2) interviews with selling children (n=24).

For the observations, I was concerned with the different exchanges that young sellers participated in with customers, peers, and older sellers. To this end, I took detailed field notes on (1) with whom the seller exchanged goods, and (2) what was being exchanged. I observed children between the ages of 5-15 over the course of 7 weeks from 2pm-10pm everyday.

For the interviews, my purpose was to learn about the different exchanges children engaged in to corroborate my observation data. To this end, I asked children about their engagement in exchanges that may not have been visible through observations. (see Table 3). I interviewed children in Spanish at the site of their work in the main plaza.

Table 3

*Interview questions about participation in exchanges*

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<sup>4</sup> Children's ages were determined by self-reports. As many sellers and their families frequently did not know children's ages, I used a benchmark child (whose age was confirmed by family members) to approximate the age of those children who did not know or were unsure of their age.

<sup>5</sup> Information on schooling was based on self-reports. Although many children reported being enrolled in school, I often observed these children during school hours working in the main plaza main plaza.

<sup>6</sup> The local organization, CANICA, supported Triqui families with school enrollment, school fees, and extra academic support for Triqui children that worked.

Have you ever traded things that you sell with another seller? If yes, tell me about it.

Have you ever traded the items you are selling with a customer for something other than money? If yes, tell me about a time when you did.

Do you ever ask customers for money or other things? Like what? What do you do with the money they give you?

**Recurrent problems that emerged in exchanges.** To analyze the emergence of recurrent problems in exchanges with customers, I drew from two sources: (1) observations in the main plaza, and (2) shadowing of two sellers.

For the observations, I noted the different recurrent problems that emerged in exchanges between sellers and customers. In order to do this, a research assistant and I posed as customers, occupying a table in one of the restaurants of the main plaza for two evenings between the hours of 5-7 pm<sup>7</sup>. As children approached our table, I noted the approximate age of the child, gender, goods being sold, and what I termed a “sales pitch”, or what the young sellers said or did to convince us to buy goods.

For the shadowing, which is detailed above, I focused on the sales pitches the two sellers used to convince customers.

## Results

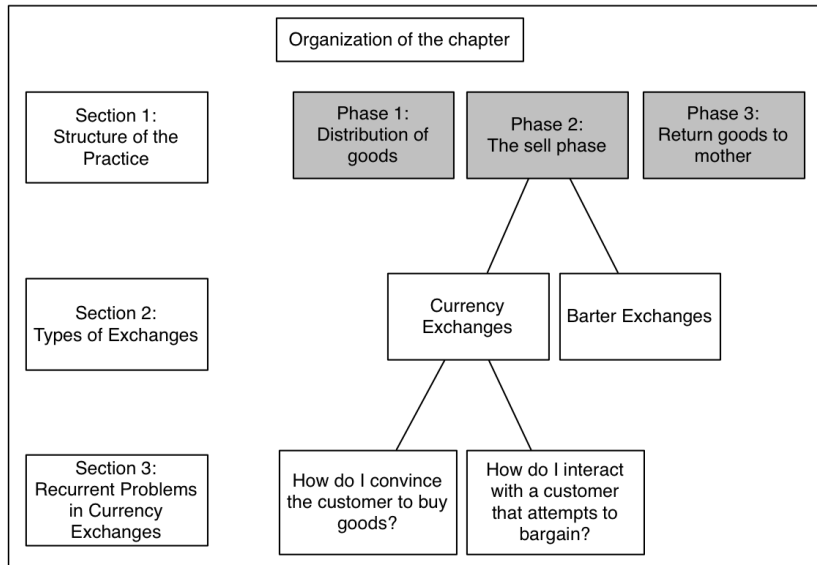
I organize the results according to the three sections described above, which, taken together, shed light on children’s economic behavior within this selling practice. First, I detail the structure of the selling practice. Next, I identify the types of exchanges that young sellers engaged in during one phase of the practice, the sell phase. Last, I analyze the recurrent problems that emerged in currency exchanges during the sell phase.

### Section 1: Structure of the practice

The three phases in the selling practice are shown in Figure 9 (Section 1, highlighted in gray) below. The first phase is the distribution of goods. The second phase is the sell phase, where children vend goods to customers. The third phase, return goods to mothers, is where sellers return the goods that they have not sold to their mothers.

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<sup>7</sup> In order to pose as a customer, it was important for me to be anonymous so that sellers would treat me as they would other customers. Because of this, the data was collected during the first week of data collection.



*Figure 9. The phases of the selling practice.*

Figure 10 contains the layout of the main plaza where each of these phases occurs. In Phase 1, the distribution of goods, mothers and children arrived in the main plaza everyday in the late afternoon/early evening hours. Mothers sat on the benches across from the church, as seen in Figure 10 below. Sellers took or received their goods from mothers or older sellers and arranged them for sale near the benches. In Phase 2, The sell phase, children walked from the benches to the restaurants, represented by the dotted red line. Once at the restaurants, sellers walked around the pavilion and targeted customers seated at tables in the restaurants, represented by the solid red line. Sellers completed their walk around the pavilion several times. Occasionally, sellers stopped and rearranged their goods. In Phase 3, the Return goods to mother phase, sellers returned to their mothers at the benches. Children gave the goods back to mothers, and may have given them the money they earned. Young sellers moved throughout these phases multiple times in a selling day



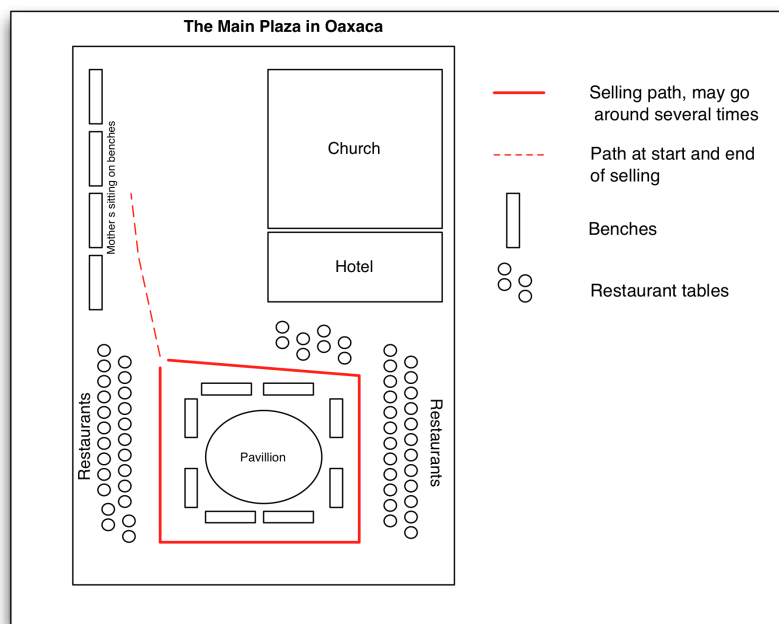


Figure 10. Layout of the main plaza and sellers' activity in phases of the practice

The observation below, from field notes taken during observations in the main plaza, illustrates a young seller moving through these phases.

*Observation #2:* 7-year-old female seller. A seller is sitting on the benches with her mother in the main plaza across from the church. She takes some bracelets from her mother and walks to the restaurant tables. She begins weaving among the restaurant tables, approaching customers seated at the tables. The seller continues around the main plaza, occasionally making a sale. After 25 minutes, she goes back to her mother and gives her the money she earned. She then plays with her siblings. After 20 minutes, she takes the bracelets and begins to walk among the restaurant tables again.

This young seller began her day by taking bracelets from her mother. She then vended to customers seated at restaurants, displaying her goods and trying to convince customers to buy her bracelets. After some time, she returned to her mother and gave her the money she earned. Below, I describe each phase in more detail.

**Phase 1: Distribution of goods.** Phase 1, the distribution of goods, consisted of taking or receiving goods from mothers. The most common goods I observed young children vending were shawls, necklaces, and bracelets. The goods had common prices (see Table 4). Shawls were priced at 20 pesos each, or three for 50 pesos. Necklaces made of beans and seeds were 10 pesos. Necklaces made of stones were 20 pesos. Bracelets varied between 5 and 10 pesos. Although not common, blouses were also sold for 50 pesos<sup>8</sup>.

<sup>8</sup> Only eight children reported in the demographic interview that they also sold blouses in addition to shawls, bracelets, and necklaces, although this was not corroborated by observations.

Table 4

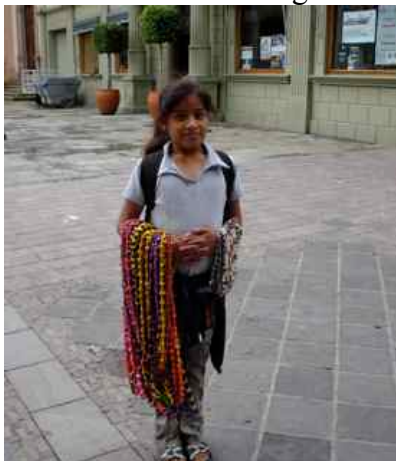
*Goods Sold by Triqui Children in Oaxaca, and Common Pricing*

Goods observed	Prices
Shawls	20 pesos, or three for 50 pesos
Necklaces made of beans and seeds	10 pesos
Necklaces made of stones	20 pesos
Bracelets	5 or 10 pesos
Blouses	50 pesos

Drawing from both observation data as well as conversations with mothers during home visits, I found that older children in a family tended to sell the shawls and necklaces, and younger children sold bracelets.

*Observation #3:* A family consisting of four young sellers arrives in the main plaza. After choosing a bench to sit on, the mother begins to distribute products for the children to sell. The 8-year-old child is given shawls, the 9-year-old child is given necklaces, and the two youngest children, who are 6 and 7 years old, are given bracelets.

The observation and the photos below illustrate the distribution of goods by age. Figure 11 and Figure 12 are photographs of children carrying the various goods. Figure 11 is a photograph of a 9-year-old seller carrying necklaces to sell. Figure 12 is a photograph of three siblings carrying goods. The eldest child, 10-years-old, is pictured in the middle of the photograph selling shawls. The middle child, who was 9-years-old, is pictured on the right selling necklaces. The youngest child, who was 5-years-old, is pictured on the left selling bracelets.



*Figure 11.* A young seller carrying necklaces to sell.



Figure 12. Young sellers with necklaces, shawls, and bracelets.

My conversations with mothers revealed practical reasons that mothers chose to distribute the goods according to age. The shawls were difficult to arrange and display in a flattering way, and the necklaces were heavy to carry. Older children were more able to display and carry the shawls and necklaces. The bracelets were prearranged on a hanger, and were not heavy to carry, so they were given to the youngest children.

My observations also revealed that older children in the family often varied the goods they sold, whereas the younger children did not. For example, I observed a family of siblings (aged 10, 9, and 7), in which the oldest child sold shawls, the middle child sold necklaces, and the youngest sold bracelets. One day, I observed that the oldest child and middle child had switched goods. When I asked the oldest child why, he replied, “She got them [the shawls] first”, gesturing to his middle sister. This observation shows that there was flexibility in the goods that the older children in the family sold. However, the younger children always sold the same good. Given that mothers felt that the shawls and necklaces were more difficult to carry and arrange than the bracelets, it is reasonable to expect that older children would vary their goods, while younger children would not.

When children first arrived in the main plaza, they prepared the goods they were given (or chose) in order to sell them. Consider the following observation:

*Observation #4, 11-year-old male:* The seller is sitting with his mom on a bench in the main plaza. He removes shawls from a plastic bag and begins arranging them on his lap, making sure they are neatly lined up and putting similar colors together. The seller chooses five shawls of different colors and hangs them on his arm. The rest he puts over his shoulder.

Like the seller in the observation above, I observed children arranging shawls and other goods for sale (See Figure 13). Children arranged the goods according to color or style, and made an effort to keep the products neat. At various times when selling, they would pause, sit down, and rearrange their goods.



*Figure 13. A child arranging the shawls*

**Phase 2: The sell phase.** In the sell phase, children would approach customers in the main plaza and try to sell their goods. I observed children walking among the restaurant tables and displaying their goods, loudly saying things such as “Shawls!” to grab customers’ attention. If a customer appeared interested, they would stop, and try to sell the good to the customer (see Figure 14).



*Figure 14. A child approaching customers at the restaurant tables in the main plaza*

Young sellers spent varying amounts of time with customers. I observed two sellers (aged 6 and 8) approach a table with three female customers. The customers waved away the young children, and the two sellers continued on, moving to another table with two customers. The customers at the new table appeared interested, and the two sellers sat down at the customers’ table for 18 minutes.

Of course, not every approach to a table resulted in a sale. Vicente, the 10-year-old male seller who was shadowed in the observations, approached customers 51 times over the course of 36 minutes. Of these approaches, seven led to interactions with customers, where Vicente would display the shawls he was selling and try to convince the customers to buy the shawls. Of these seven, only two led to sales. Guadalupe, the 9-year-old female who was shadowed, approached customers 50 times over the course of 25 minutes. Of these, three led to interactions with customers, and one resulted in a sale.

Children often asked customers for a gift of a coin or food during these interactions, regardless of the sale. In the interview on participation in exchanges, I asked children if they ever solicited gifts from customers. Sixteen out of 24 children replied yes, that they did ask for money. My observations corroborated the gift giving. In an interaction with a customer I

observed, a seller sold three shawls to a female customer. After the exchange of currency, the customer gave the seller 20 pesos extra, and told him to spend the money on gum, or juice, or whatever he wanted.

The gifts were important to children, as it was not money or items that were returned to the mother after the selling phase. Children often spent this money on food and toys that they did not otherwise get; I observed a young boy buying a large balloon from a vendor with money that he received from a customer; another child purchased chips and ice cream. The mothers were aware that gifting occurred, and did not stop children from buying food and toys.

Children walked and sold goods for an average of 35 minutes before returning to their mothers. They returned to their mothers regardless of whether they had successfully sold goods or not.

**Phase 3: Return goods to mothers.** After returning to their mothers, young sellers would give their goods back to their mothers and then run around and play with each other, or possibly do homework, before returning to sell again.

It was difficult to observe what sellers did with the money they earned after selling. In order to determine this, I specifically asked sellers in the demographic interview to explain what they did with the money they had earned. Ninety percent of sellers aged 7 to 8 reported giving the money to their mothers. Seventy-seven percent of sellers between the ages of 9 and 11 reported giving the money to their mothers; only 25% of sellers aged 12 to 15 reported the same. Younger sellers, therefore, returned the money they earned to mothers more frequently than older sellers. Older sellers referred to using the money they earned to either reinvest in new goods or buy food and clothing. Table 5 below contains some illustrative examples of a 7-year-old seller, an 11-year-old seller, and a 14-year-old seller.

Table 5

*Children’s responses to what they do with the money they earn from selling*

What do you do with the money you earn from selling?	
Age	Response
7-year-old	“I give it to my mom.”
11-year-old	“I give it to my mom and she tells me to go to the market to buy things like tortillas and tasajo (a type of meat).”
14-year-old	“With half, I invest in more blouses, and the other half, we use it to buy other stuff for school.”

The three sellers’ answers were typical for their age. The 7-year-old and 11-year-old sellers both referred to giving the money they earned to their mothers, though the 11-year-old seller elaborated on what is then done with that money (i.e., the money is used to purchase food). The 14-year-old seller reported that she used the money to purchase more goods as well as school supplies.

Although there may have been accountability measures in place for the children in order to ensure that they were in fact selling the goods, I was not able to determine with accuracy if mothers employed such measures as counting the goods and money earned. I did not observe any mothers that appeared to count the goods or money that children returned to them; however, two

young sellers alluded to an accountability measure during an observation. The young sellers told me that they couldn't give their goods away to customers because the money and goods are counted. The statements were not verified.

The three phases in the practice of selling provide a recurring structure to the activity of young sellers in which they engaged in various exchanges. I now detail the different exchanges that arose in the course of vending.

## Section II: Types of exchanges

I expected that two principal types of exchanges may occur during the sell phase: currency exchanges with customers, and barter exchanges between sellers (see Figure 15). Recall from Chapter 1 that, for the purposes of this dissertation, I defined exchanges as being concrete and immediate. Since I limit my analysis to this definition, only currency exchanges with customers and barter exchanges between sellers are included, as they are both concrete (i.e., goods being exchanged for currency or other tokens), and immediate.

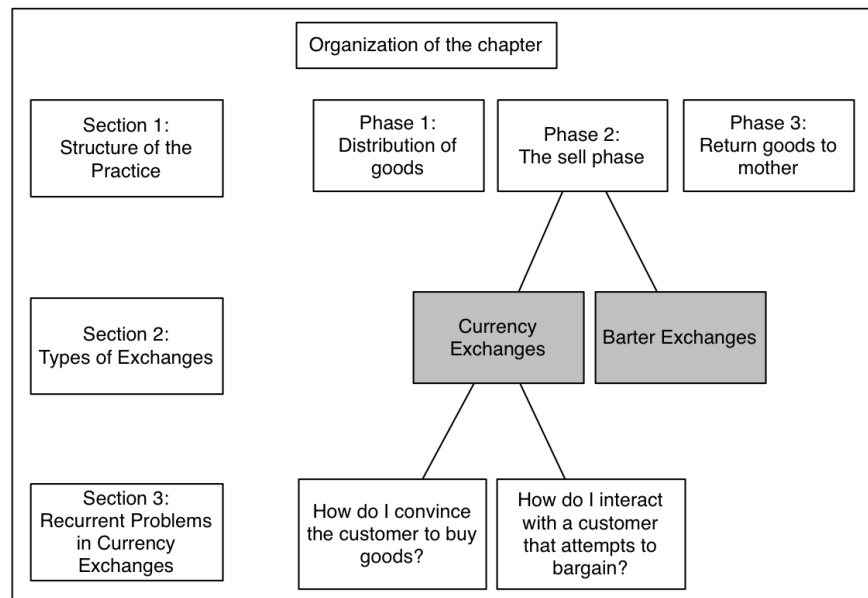
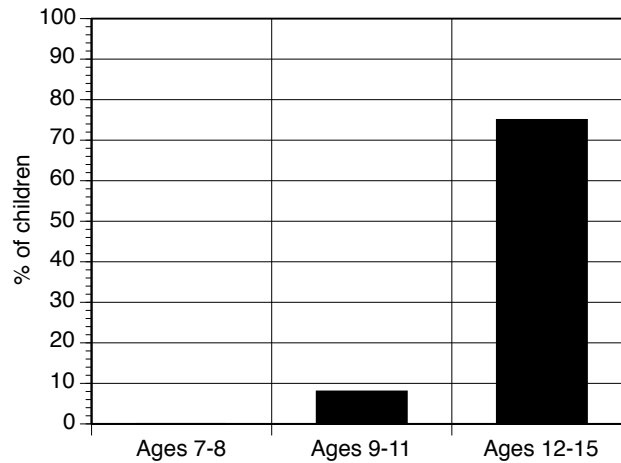


Figure 15. The types of exchanges in the selling practice that young sellers engage in

I drew on data from observations to characterize the exchanges that sellers engaged in. I analyzed (1) with whom the seller exchanged, and (2) what was being exchanged. Based on this data, the only type of exchange that I documented was between sellers and customers, where goods were exchanged for currency. This exchange occurred during the sell phase of the practice.

Barter exchanges, which I expected may occur, were not visible in the observations. Nonetheless, they may have occurred. To determine if barter exchanges occurred, I asked young sellers in an interview if they every traded goods with other sellers, and if so, to tell me about it. Figure 16 below contains the results of this question. Younger children (aged 7 to 8) did not engage in any barter trades with other sellers. Only 8% of sellers between the ages of 9 and 11 engaged in barter trades. Seventy-five percent of older sellers (aged 12 to 15) reported that they had engaged in barter trades.



*Figure 16.* Percentage of children reporting that they traded goods with other sellers by age

When asked to describe the barter trade, all of the sellers that responded yes described a time where they traded one of their goods (e.g., a shawl or a necklace) for a good that they did not have. No sellers reported trading one of their goods for other similar goods (e.g., a shawl for a shawl). Older children had more experience in the practice, and thus may have had more opportunity and autonomy to exchange goods.

Based on the limited amount of barter exchanges that occurred in the practice, as well as the lack of visibility, I consider currency exchanges as the focal exchange for the emergence of recurrent problems. Below, I detail the recurrent problems that emerge for children as they engage in currency exchanges with customers.

### **Section III: Recurrent Problems in Currency Exchanges**

Recurrent problems emerged for children as they sold goods and employed strategies to engage in successful exchanges and thus earn money; I focus on two recurrent problems that emerged in exchanges (see highlighted Section 3 in Figure 17). I then turn to a discussion of the ways in which mathematical knowledge is interwoven with sellers' engagement in recurrent problems.

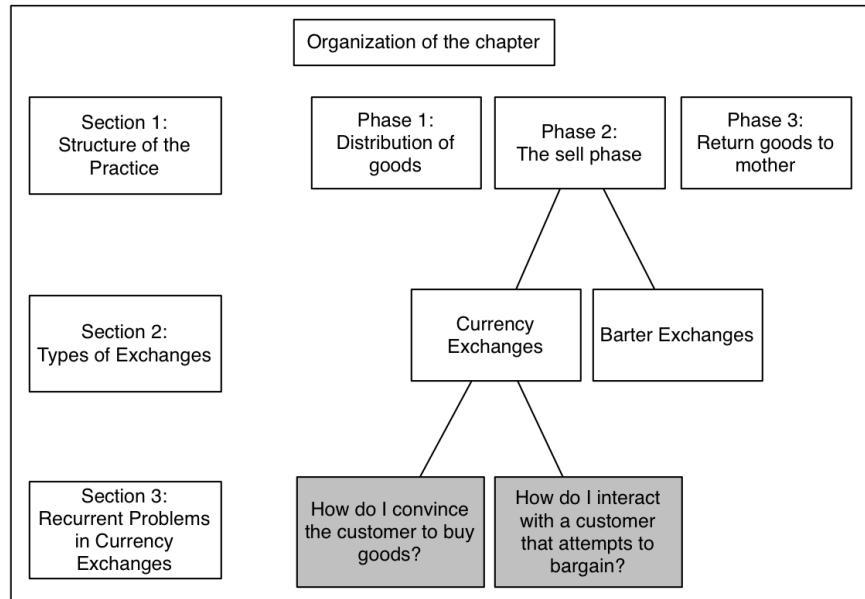


Figure 17. Recurrent problems in currency exchanges

In order to identify recurrent problems between sellers and customers, I first coded all observations of currency exchanges to determine which exchanges involved interaction between the seller and customer. There were a total of 19 observations that included some interaction with a customer. Recall from above that most attempts by children to sell their goods were ignored by customers. Sellers did not stop and interact with customers that ignored them or gave no indication that they were interested in buying goods. I therefore only analyzed observations where customers in some way interacted with sellers, because it was in these interactions that recurrent problems emerged.

I focus on two problems that emerged in the 19 observations of currency exchanges. The first problem, how to convince the customer to buy the good, occurred in all 19 of the observations. The second problem, what to do if the customer attempts to bargain, occurred in six of the 19 observations. Although bargaining did not occur frequently, it is central to children's developing understandings of exchange value and price.

**Recurrent problem: How do I convince the customer to buy goods?** Sellers approached potential customers and attempted to convince the customer to buy the goods they were selling. Consider the following observation, in which an assistant and I were posing as customers at a restaurant table in the main plaza:

*Observation #5:* 14-year-old female seller. The seller approaches the table of the researcher and research assistant, saying "Necklaces?" The two researchers indicate to the seller that they are interested in seeing the necklaces. The seller then chooses one necklace and puts it around the researcher's neck. The seller says, "It [the necklace] looks good on you. It matches well with your outfit. Buy one from me, it's only 10 pesos."

In this observation, the 14-year-old seller attempted to convince us to buy the necklaces. The seller first emphasized the quality of the necklaces she was selling by choosing a necklace that



matched my clothing, and then put it around my neck in an effort to show how good it would look. The seller also emphasized that it was “only 10 pesos”, which might be interpreted as a small price to pay, given that we were seated at a restaurant where a soft drink cost three times that amount. Her sales pitch consisted of showcasing her goods to demonstrate their quality, while concurrently emphasizing the low price of the necklace.

Young sellers used sales pitches to convince customers to buy goods, as seen in the observation above, and thus make successful sales. I consider children’s use of sales pitches as estimates of sellers’ strategies for successful selling. There may have been other ways that sellers strategized to sell goods (e.g., specific targeting of customers), but I do not have data that speaks to other strategies. In this analysis, I also assume that children used sales pitches for the purpose of convincing customers to buy goods. I assume this because the sales pitches took place with the context of the sell phase, in which sales pitches had a very specific function and purpose: to successfully sell goods through convincing customers.

Sellers employed sales pitches in which they said or did something to convince customers to buy the goods they were selling in all 19 observations that I documented. Below, I detail the different patterns in sales pitches that I observed.

**Codes for sales pitches.** I coded 19 observations for patterns in sales pitches. Each sales pitch was coded multiple times, as sellers often relied on more than one way of convincing the customers. The patterns that emerged were (1) showing the goods, (2) putting emphasis on the quality of the good, (3) putting emphasis on the price of the good, and (4) relying on the seller’s age. Figure 18 displays the frequency of sales pitches that used the four patterns.

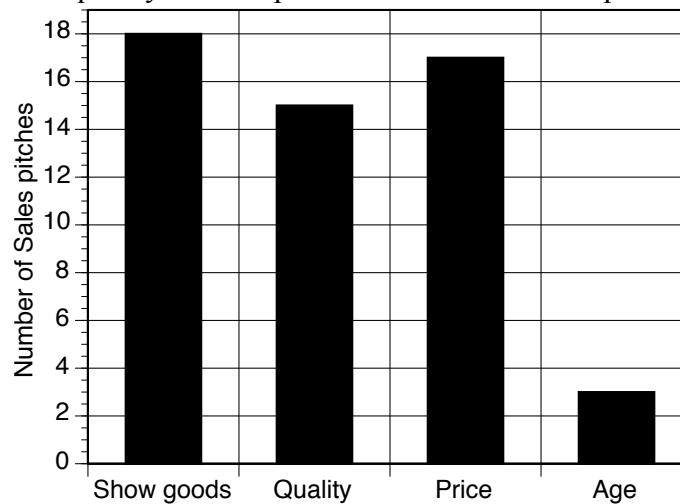


Figure 18. Frequency of each pattern of sales pitches

Showing the goods and emphasizing the price were the two most frequent sales pitches. Eighteen out of 19 sales pitches involved showing the goods to the customer; seventeen out of 19 sales pitches involved emphasizing the price of the goods. Quality was emphasized in 15 out of 19 sales pitches. Age was used infrequently, only three times. Although there is no correlation between the emphases of the sales pitches and the sellers’ age, the only children that relied only on age were in the younger age group (aged 5-8).

Table 6 below contains descriptions and exemplars of the patterns in sales pitches. I detail each one below, and then discuss various coordinations among the different emphases in sales pitches.

Table 6.

*Patterns in sales pitches in the 19 observations*

Type of sales pitch	Description	Example
Showing goods	Displaying the goods	Observation # 6: 7-year-old female seller: The seller is selling bracelets for 10 pesos. She puts the bracelets on the table and encourages the customers to look through them and choose one they liked.
Emphasizing quality	<ol style="list-style-type: none"> <li>1. Show how the good was made</li> <li>2. Discuss the quality of the raw goods</li> <li>3. Discuss the time spent in making the good.</li> <li>4. Discuss the beauty of the good by emphasizing the color, pattern, or style of the good</li> </ol>	Observation # 7: 7-year-old male seller: The seller is selling bracelets for 10 pesos. He says, "Buy one. Only 10 pesos." He shows the customers the bracelets. The seller models how he braided the string on the bracelets. The seller then asks the customers to buy a bracelet, repeating that they only cost 10 pesos.
Emphasizing price	States the price of the good	Observation # 8: 10-year-old male seller. The seller is selling shawls for 20 pesos each, or three for 50 pesos. He approaches a group of customers and says, "Some shawls? For the head, waist, and skirts? Three for 50. Three for 50. Some shawls?"
Relying on age	Smiles, rely on "cuteness"	Observation #9: 5-year-old seller. The seller is selling bracelets for 10 pesos. The seller approaches a table of customers and smiles shyly. She does not say anything, and does not show her goods to the customers.

The first type of sales pitch, *showing goods*, involved displaying the goods. In this case, the seller would display the different colors and styles of necklaces, bracelets, and shawls that they were carrying with them, in the hopes that the customer would choose one (or more) for purchase. This was almost always the first move the sellers would make (18 out of 19 observations consisted of showing goods), trying to capture the interest of the customer by relying on the appearance of the goods. In Observation # 6 presented in Table 6, the young seller put her goods on the table the customers were seated at in order to allow them to see the goods, and encouraged the customers to look at them.

The second type of sales pitch, *emphasizing quality*, involved the seller choosing one or more qualities of the good being sold and emphasizing it. I coded sales pitches in which the seller discussed how the good was made, the quality of the raw goods to make the goods, the time spent in making the good, and/or pointing to the beauty of the good by emphasizing the color, pattern, or style of the good. Emphasis on the quality was common as 15 out of 19 sales pitches were coded as *emphasizing quality*. This could involve a seller showing customers how they made the good. For example, in Observation #7, the young seller showed the customers how he braided the string together to make a bracelet. Other times, a seller would talk about the quality of the raw goods, perhaps emphasizing that the high quality of the string used to make a shawl. Other sellers would emphasize that the goods were handmade (and thus high quality), communicating the time spent and complexity involved in making each good. Still other sellers chose a certain necklace that matched the clothes a customer was wearing, as in Observation #5 above.

The third type of sales pitch, *emphasizing price*, remarked on the low price of the good. I coded all sales pitches in which the seller stated the price of the good; price was very common, with 17 out of 19 sales pitches coded as *emphasizing price*. In Observation #8 above, the seller told customers that the price of the shawls was 20 pesos each, or three for 50 pesos. The seller repeated the price was repeated numerous times.

The fourth type of sales pitch, *relying on age*, involved the youngest sellers that appeared to rely on their young age in order to convince customers to buy from them. This sales pitch was less common, with only three out of 19 codes. Many customers were sympathetic to the children's plight, and it may be that some customers purchased goods in order to help the children. In Observation #9 above, the 5-year-old seller did not use any of the other patterns of sales pitches that I documented above. Rather, she smiled shyly, and may have been relying on her age and "cuteness" to try to sell the goods.

***Coordinations between sales pitches.*** Eighteen out of 19 sales pitches involved more than one emphasis. Showing goods was the first step in a sales pitch, and was used by all but one seller. After showing goods, sellers then coordinated different patterns.

A common coordination was quality coordinated with price. This coordination took two forms: (1) price used to justify quality, or (2) quality to justify price. Price used to justify quality is seen in Observation #8 above, where the 10-year-old seller emphasized the quality of the good by pointing to the multiple uses of the shawl (e.g., for the head, as a belt, or as a skirt), and then directly after stating the price. It may be that the seller was using the price of the shawl to justify the multiple uses of the shawl, trying to convince customers they would be getting a bargain by purchasing a good that has multiple uses for a low price. Similarly, in Observation #5, the 14-year-old seller first highlighted the quality of the good by putting the necklaces on the customers.

The seller then emphasized the price, stating that it's "only 10 pesos". The price was being used to justify the quality.

Quality used to justify price is seen in Observation # 7 above, where the 7-year-old seller attempted to sell bracelets for 10 pesos each. He began by stating the price, and then showed the customers how he made the bracelets, emphasizing the quality of the good. In this case, he was using the quality of the good to justify the price of the good.

**Recurrent problem: How do I interact with a customer that attempts to bargain?**

As children employ sales pitches to convince customers to purchase goods, some customers attempt to bargain with children. One of the young sellers whom I shadowed engaged with a customer that was attempting to lower the total cost of the goods. A 9-year-old seller was vending two types of necklaces; necklaces made of stones were priced at 20 pesos, and necklaces made of seeds were priced at 10 pesos. The customer indicated an interest in purchasing two necklaces, one made of seeds (10 pesos) and the other made of stones (20 pesos). The customer then attempted to lower the total cost by 10 pesos, by offering to pay 20 pesos for the two necklaces, even though the total cost should have been 30 pesos. The seller repeatedly refused to lower the price, citing the price of the raw materials (, the stones are very expensive) as well as the time spent making the stone necklaces. After 4 minutes of interaction, the seller refused to lower the price, the customer refused to pay the full price, and the exchange ended unsuccessfully.

According to observations, none of the exchanges I documented that involved bargaining resulted in a lowered price. In all cases, sellers refused to lower the price. This is not to say that sellers never lowered the price; the small number of observations I documented that involve bargaining may not provide a complete picture of children's willingness to engage in changes to the price. In Chapter 3, I investigate bargaining more thoroughly through systematic interviews.

Even though all sellers I observed in the bargaining exchanges did not change prices of the goods, these sellers did provide justifications to customers for why they would not lower the price, and continued to convince the customer to buy the good and pay the price asked. The 9-year-old seller described above who was trying to sell necklaces relied on the quality of the good (i.e., the raw materials for the stone necklaces were expensive, and time is spent making them) to convince the customer to pay the full price. In other observations, sellers also relied on the quality of the good to convince customers to pay the full price. In two cases, sellers referred to their mothers as authority figures, stating that their mothers would be angry with them if they changed the price.

**Mathematical understandings in recurrent problems.** The focus of this analysis has been on the economic understandings developed through engagement with recurrent problems; however, children's mathematical knowledge may also be interwoven in their engagement. Arithmetical strategies are means by which sellers may make decisions about which goods to sell in order to maximize their earnings. Below, I consider different levels of arithmetical strategies that may be used by sellers while vending in an effort to illustrate how arithmetical understandings are interwoven with selling strategies.

At the simplest mathematical level, each good has a price. This price is a numeric quantity, a quantity that corresponds to certain combinations of currency tokens. In exchanges, sellers often perform simple arithmetic (such as the seller in the observation above) to calculate total cost, check the correspondence between currency tokens and the stated price, and calculate change. Sellers often develop strategies that support them in performing calculations.

More complex levels may involve the seller calculating the total revenue they might earn in order to convince a customer to purchase their good at the price stated. The ability to do this may be constrained by sellers' own mathematical knowledge, as calculation of revenue is complicated and involves more sophisticated arithmetic combined with economic knowledge.

Developing arithmetical understandings are interwoven with children's strategies for successful selling. As they engage in exchanges, sellers may develop and use arithmetical strategies as a means of solving recurrent problems in which a successful exchange is an outcome.

Consider the following observation:

*Observation #10: 10-year-old male seller.* The seller approaches a table with a customer, saying "Shawls? Three for 50 [pesos]." The customer looks interested, so the seller begins to show the customer various colors and patterns of shawls. The customer looks through them, and sets three aside for purchase, saying, jokingly, "Three for 10 pesos, right?". The seller laughs, and says "No, three for 50 [pesos]". The customer opens her purse and begins to look for money to pay the seller. The customer counts out loud as she puts coins (of different values) in the seller's hand one at a time. "10, and 5 is 15, 17, 19, 20, 24, 26, 28, 30". The seller continually checks the amount of the coins. The seller repeats the amounts after the customer as she counts out loud. "30, 35, 37, 39, 40,45, 50. Is it good?" The seller checks the coins again, then says "Yes. Thank you."

The 10-year-old seller in this observation was able to follow the customer as she counted out the coins, which were of differing values. He continually checked the correspondence between the value of the coins and the verbal amount the customer said as she summed up the coins. The seller demonstrated that he knew the values of the coins, and could perform simple arithmetic.

In Observation # 10, if the 10-year-old seller was not able to sum up the coins that the customer gave him as payment for the shawls, the seller might have accepted an incorrect amount. An incorrect amount would affect the seller's overall earnings. Recall that I assume that sellers are acting with the objective of successful selling; in this case, children's lack of arithmetical knowledge may have dire consequences on their lives, and those of their families.

## **Discussion**

In this chapter, I presented results from the ethnographic study which focused on illuminating children's economic activity within this particular selling practice in Oaxaca. I focused on the selling activity of Triqui children, many of whom were recent arrivals to Oaxaca City, and were faced with limited options to earn a living; entrance into the selling practice was common for these young children as a way to earn a living.

I began the chapter by detailing the predictable phases of sellers' activity in the course of a selling day. I documented three recurrent phases. In Phase 1, *Distribution Phase*, mothers distributed different goods to their children to be sold, often assigning goods according to the age of the child. In Phase 2, *Sell Phase*, young sellers walked around the main plaza selling goods,

focusing their attention on customers seated at restaurants. In Phase 3, *Return Goods to Mothers Phase*, sellers returned to their mothers and gave them the goods that they did not sell; most sellers also gave the money they earned to their mothers.

I then examined with great detail the Sell Phase of the practice, documenting the different exchanges that children participated in and the recurrent problems that emerged in exchanges. Because I found that currency exchanges were the only exchanges that young sellers engaged in frequently, I focused my analysis of recurrent problems on currency exchanges. I described two recurrent problems that arose in exchanges with customers: how to convince the customers to buy goods, and how to interact with a customer that attempts to bargain. Young sellers used different sales pitches to convince customers, such as showing the goods, emphasizing the quality of the goods, and/or emphasizing the price of the good. These sales pitches were also used when customers attempted to bargain; in all my observations, sellers did not alter the price of the goods they were selling, but instead tried new sales pitches to try to sell the customer the goods for the price they asked.

I have detailed children's economic activity through an analysis of the recurrent problems that arise in currency exchanges with customers as children try to sell their goods successfully. Although the ethnographic study provided important insights into children's everyday economic activity, it does not characterize children's economic understandings that may have been developed in their activity, such as their use of sales pitches to convince customers to buy goods. Observations alone cannot shed light on how children are thinking about the value of their goods, or the ways in which price is determined.

In order to investigate children's economic understandings, a different type of study was needed that would allow for a systematic analysis of children's developing understandings through targeted interviews. The purpose of the interview study, therefore, was to provide an analysis of children's developing economic understandings that may be developed through engagement in recurrent problems.

The ethnographic study, in addition to revealing children's engagement in recurrent problems while selling, also set the stage for the development of interview tasks. Similar to other studies that have investigated mathematical development in buying and selling practices (Guberman, 1996; Saxe, 1991), tasks in interviews mirrored aspects of the particular practice that children were engaged in. For example, the goods and prices that I used in interview tasks were the same goods that I documented that children sold (i.e., necklaces for 10 pesos and shawls for 20 pesos).

In Chapter 3, I turn to results from the Interview Study in which children's developing economic understandings are explored in great detail through systematic interviews.

### Chapter 3: Children's Developing Ideas of Exchange Value and Price

The purpose of this chapter is to investigate the character of children's ideas about two key economic ideas: (1) exchange value of goods (the value of goods in an exchange) and (2) price of goods (flexibility of price and pricing decisions). To elicit children's developing ideas, I interviewed children on *Bartering Tasks* (exchanging goods for goods) in order to probe ideas about the exchange value of goods and *Selling Tasks* (exchanging goods for currency) in order to probe ideas about price and pricing decisions.

For both the Bartering and Selling tasks, children were asked to imagine that they were selling a good and were approached by another seller who asked them to trade their good for other goods (Bartering Tasks) or by a customer who asked them to sell their good for a set amount of currency (Selling Tasks). The child was asked to state their judgment: whether or not they would trade or sell (at the specified level of barter or price), and provide a justification for their judgment.

Bartering Tasks probed children's understandings of exchange value of goods. For example, a child was told to imagine they were selling a shawl priced at 20 pesos. Another seller approaches them and wants the child to trade the shawl for a necklace, which is priced at 10 pesos. The child was then asked, would they trade their shawl (20 p) for the necklace (10 p), and why or why not? In order to make a judgment and then justify it, I expected that the child would assess the value of the goods in some way. Responses to the "why?" questions would reveal ways the child conceptualized the exchange value of the goods.

I used three conditions for Bartering Tasks, each of which varied by whether the child would lose or gain cash value in the exchange on the basis of the barter. In the *child loses* condition, the child was asked whether they would trade their *one shawl (20 p) for one necklace (10p)*; if they agreed to trade, they would lose cash value in this condition. In the *even trade* task, the child was asked whether they would trade *one shawl (20 p) for two necklaces (10 p each or together worth 20 p)*; if they agreed to trade, they would neither gain nor lose cash value in this condition. In the *child gains* condition, the child was asked whether they would trade *one shawl (20 p each) for five necklaces (10 p each, or together worth 50 p)*; if they agreed to trade, they would gain cash value in this condition. The different quantities of necklaces provided me with the ability to elicit a range of children's ideas of exchange value. For example, were children assessing the exchange value of the shawl based on the quantity of items received (either one necklace, two necklaces, or five necklaces versus one shawl), the unit price of items (the cost of a single necklace versus the cost of a single shawl), or a coordination of quantities and prices when making their judgments?

Selling Tasks probed children's ideas of price and pricing decisions. The tasks asked children to imagine that they were selling a shawl priced at 20 pesos, and whether they would sell the shawl for less than the asking price when a customer tried to bargain.

I used two conditions for the selling tasks that varied the character of the bargain. In the *lowering the unit price condition (1 for 20p altered to 1 for 15p)*, the child was approached by a

customer that wanted to trade one shawl for 15 pesos instead of 20 pesos. In the *lowering price for a multiunit sale condition (1 for 20p altered to 3 for 50p)*, the child was approached by a customer who wanted to buy three of the shawls (20 p each) for 50p. Three shawls for 50p was a price ratio that was used frequently in the selling practice (instead of three shawls for 60p). For both conditions, children were asked to make a judgment of whether or not they would agree to lower the unit price of the shawl, and then justify their judgment. I expected that children's judgments and justifications for their judgments would reveal their ideas about the ways in which prices are set. For example, in the *lowering the unit price* condition, children would need to decide if they would sell the shawl to the customer for 15p, and then justify why they would or would not sell. In this justification, they might reveal ideas about why they think the price of the shawl is set at 20p.

The *lowering price for a multiunit sale (1 for 20p altered to 3 for 50p)* condition probed children's ideas of why the price of 50p for three shawls was a common ratio in the practice (a potential loss of 10p at the unit price of 20p per shawl). Although children did not set the price, they may have generated ideas of why this price ratio exists, and these ideas may be reflective of their understandings of pricing.

I present the results in two sections. In the first section, Exchange Value, I explore children's ideas of exchange value through analyses of Bartering Tasks. In the second section, Price, I explore children's ideas of price and pricing decisions through analyses of Selling Tasks. Throughout the sections, I compare the responses of young sellers with a non-selling comparison group. The seller versus non-seller comparison focuses on whether sellers' developing economic ideas are attributable to their participation in the selling practice.

## Methods

### Participants

I invited all sellers between the ages of 7-15 whom I observed selling in either the main plaza or the pedestrian walkway to participate in interviews. Twenty-nine of these sellers (roughly 90% of all invited) consented to be interviewed on the two sets of tasks (Barter Tasks and Selling Tasks). Fifteen sellers were female, and 14 were male. Fifteen sellers were 7 to 9-years-old; 8 sellers were 10 to 11-years-old, and 6 sellers were 12 to 15-years-old. In return for their participation in the interviews, sellers were offered a 20-minute session with a research assistant in which they received mathematics instruction through a game, as well as a copy of the game to take home.

Interviews took place at the site of the selling practice, such as a bench in the corner of the main plaza or a sidewalk in the main plaza. All interviews were audio-taped and conducted by the author in Spanish.

I invited non-selling children between the ages of 7-13 who were enrolled in grades 2-6 in a government school located in Santa María Guelacé to participate in interviews. Fifteen of these non-sellers (roughly 60% of all invited) consented to be interviewed on the two sets of tasks. Seven non-sellers were female, and 8 were male. Eleven non-sellers were 7 to 9-years-old; 3 non-sellers were 10 to 11-years-old, and 1 non-seller was 13-years-old.

Santa María Guelacé is located approximately 23 km from the city of Oaxaca, and has a population of approximately 700 people. Information about socioeconomic levels in Santa María Guelacé could not be found. The non-selling population was chosen for its semi-rural location, as



well as availability for conducting interviews at the school site. I selected a semi-rural location as I hypothesized that children who lived there would be more removed from the selling practices in the main plaza than children that lived in the city of Oaxaca. However, four of the non-selling children did belong to families who were involved in a vending business.

All of the interviews occurred in a classroom or on the playground of the school, and were audio-taped. All interviews were conducted by the author in Spanish.

## Procedures

**Exchange value through Bartering Tasks.** Bartering Tasks are contained in Table 1 below. For each of the tasks, children were asked to imagine that they were selling a shawl priced at 20p, and another seller wanted to trade some quantity of necklaces for the shawl. For each condition, children were asked to make a judgment that would lead to a loss or gain in cash value, and a justification for their judgment. The first condition, *child loses*, was a trade of one shawl (20p) for one necklace (10p). The second condition, *even trade*, was a trade of one shawl (20p) for two necklaces (10p each). In this trade, the total prices of the goods were equal (i.e., the price of one shawl is equal to the price of two necklaces (20p)). The third condition, *child gains*, was a trade of one shawl (20p) for five necklaces (10p each). In this trade, the total prices of the goods were not equal (i.e., the price of one shawl is not equal to the price of five necklaces (50p)).

Table 1.  
*Bartering Tasks.*

Condition	Exchange	Child's loss or gain in trade
1. Child loses	Child is selling one shawl (20p); another seller asks child to trade shawl for one necklace (10p)	The trade would lead to a loss in cash value.
2. Even trade	Child is selling one shawl (20p); another seller asks child to trade shawl for two necklaces (10p each, 20p total)	The trade would lead to neither a loss nor gain in cash value.
3. Child gains	Child is selling one shawl (20p); other seller asks child to trade shawl for five necklaces (10p each, 50p total)	The trade would lead to a gain in cash value.

I expected that the three conditions would elicit different judgments and justifications from children. In particular, I thought the *even trade* condition would solicit nuanced ideas of the exchange value of the good as there was no judgment that would lead to a loss or gain in cash value, and children would have to provide more detailed justifications of their judgment. In contrast, I expected that the *child loses* and the *child gains* conditions, while contributing to overall analyses of children's ideas of exchange value, would not reveal the nuances in justifications that the *even trade* condition would reveal.

**Price through Selling Tasks.** Selling Tasks are contained Table 2 below. For each of the tasks, sellers were asked imagine they were selling a shawl for 20 pesos. They were then told

that a customer wanted to purchase the shawls, but for an altered price, and were asked to provide a judgment and a justification. The first condition, *lowering the unit price*, queried children about their judgment to lower the price from 20p to 15p. I expected that children’s justifications to this condition would reveal their ideas of (1) the extent that price is flexible, and (2) their ideas about how pricing decisions are made. The second condition, *lowering price for multiunit sale*, queried children about their judgment to lower the unit price of the shawls in order to sell three shawls for 50p to the customer, where the ratio of shawls to currency units is consistent with pricing in the practice. I expected that children’s justifications to this task would reveal (1) the extent that they are familiar with the price ratio, and (2) their ideas about how decisions are made.

Table 2  
*Selling Tasks*

Condition	Exchange	Explanation
1. Lowering the unit price	Child is selling one shawl (20p); a customer asks child to sell shawl for 15p.	The trade is one shawl (20p) for 15p, where the unit price of the shawl is lowered by 5p.
2. Lowering price for multiunit sale	Child is selling one shawl (20p); a customer asks child to sell three shawls for 50p.	The trade is 3 shawls (20p each) for 50p, where the unit price of the shawls is lowered.

I used a probe to further elicit children’s thinking in the *lowering price for multiunit sale* condition. For children that provided judgments in which they said they would lower the unit price of the shawls, I presented them with the probe of “If shawls are 20p each, three shawls would be 60p. Why would you sell three shawls for 50p?” The purpose of this probe was to elicit more detailed explanations of children’s ideas of why this particular price ratio existed.

## Results

My results are presented in two sections: (1) Children’s developing ideas of exchange value through analyses of Bartering Tasks, and (2) Children’s developing ideas of price through analyses of Selling Tasks.

### Section I: Children’s Ideas of Exchange Value

In this section, I explore children’s ideas of exchange value through analyses of the three conditions (child loses, even trade, child gains) on the Bartering Tasks. I first examine the judgments children made of whether they would trade the shawl (20 p) they were asked to imagine they were selling with the necklaces (10 p) the other seller was offering. I focus on children’s judgments that were advantageous to the child in terms of earning cash value<sup>9</sup>. For

<sup>9</sup> In some cases, an advantageous judgment would lead to no loss of cash value, as in the first condition (child loses), where a judgment to not trade one 20-peso shawl for one 10-peso necklace would lead to no loss in cash value. I consider this judgment to be advantageous even though there was no gain in cash value.

example, in the child gains condition, an advantageous judgment would be to trade the shawl (20p) for the five necklaces (50p total) as it would lead to a gain in cash value for the child.

In order to then make sense of the advantageous and not advantageous judgments, I turn to children’s justifications across all conditions. I coded justifications according to reference to price, as the tasks were presented as part of a selling practice in which the exchange value of the goods is equivalent to the price. I was curious as to the extent that children referenced the price of the goods in assessing the value of the goods. I also explore other categories of justifications that did not reference price. Finally, I return to the *child gains* condition to illustrate further nuances in children’s ideas about exchange value.

**Children’s judgments on Bartering Tasks.** All sellers and non-sellers were given the three Barter Task conditions in which they were asked to imagine they were selling a shawl priced at 20p. In the first condition, *child loses*, another seller offers to trade one necklace (10p) for the shawl. In the second condition, *even trade*, the offer is two necklaces (20p total). In the third condition, *child gains*, the offer is five necklaces (50p total).

Children’s justifications to the three conditions were coded as *advantageous* or *not advantageous* to gaining in cash value. Table 3 contains (1) the condition, (2) a description of an advantageous judgment for the condition, and (2) a description of a not advantageous judgment for the condition. Figure 19 below contains the judgments according to population.

Table 3

*Advantageous and not advantageous judgments for conditions of Bartering Tasks.*

Condition	Advantageous Judgments	Not Advantageous Judgments
1. Child loses	Child does not trade one shawl (20p) for one necklace (10p), leading to gain in cash value.	Child does trade one shawl (20p) for one necklace (10p), leading to loss in cash value.
2. Even trade	Child does or does not trade one shawl (20p) for two necklaces (20p total), leading to no loss or gain in cash value.	None
3. Child gains	Child does trade one shawl (20p) for five necklaces (50p total), leading to gain in cash value.	Child does not trade one shawl (20p) for five necklaces (50p total), leading to loss in cash value.

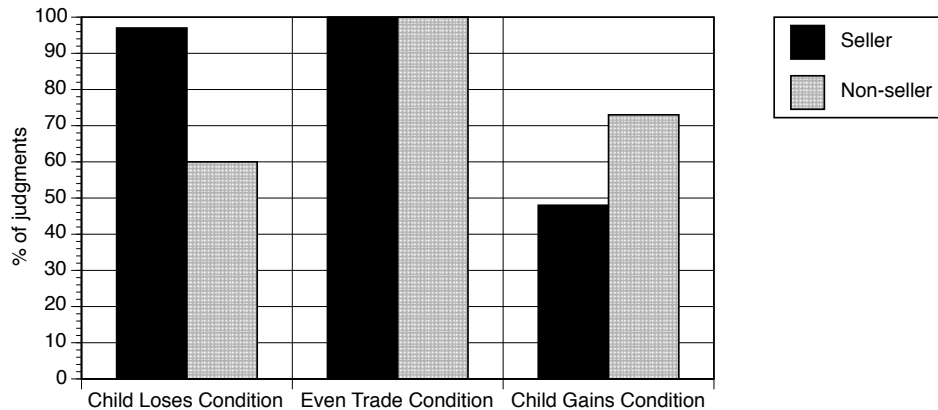


Figure 19. Advantageous judgments on the three conditions of Bartering Tasks according to population type.

For the *child loses* condition, 97% of sellers and 60% of non-sellers made judgments that would be advantageous to earning cash value. For the *even trade* condition, all sellers and non-sellers made advantageous judgments; this was due to the fact that the prices of the goods in this condition were equal, so judgments to trade or not trade with the other sellers were all advantageous. For the *child gains* condition, 48% of sellers and 73% of non-sellers made advantageous judgments.

These results show that although most sellers' judgments on the first two conditions were advantageous to them, a majority of sellers' judgments on the *child gains* condition were not advantageous to gaining cash value. Non-sellers, on the other hand, produced judgments to the *child gains* condition that were more likely to be advantageous. Why were sellers more likely to make a judgment that would not lead to a gain in cash value? Were sellers' ideas about the exchange value of the goods not taking into account the prices of the goods, or were the ideas based on something other than price? In order to answer this, I first analyzed all children's justifications across conditions in order to determine categories of children's ideas about the exchange value of the goods. I then return to the *child gains* condition to more closely examine the justifications.

**Children's justifications on Bartering Tasks.** In this section, I report two analyses of justifications: (1) the extent of children's reference to price across all conditions, and (2) the nuances in children's use of price on the *child gains* condition. Again, I chose to code for price as the Bartering Tasks were presented to children as part of a selling practice, where the exchange value of goods is equivalent to their price.

**Children's use of price across all conditions.** All children's justifications to the three conditions were coded for reference to *price* or *no price*, regardless of their judgments. Table 4 contains the condition, an exemplar of a justification that was coded as referencing price, and an explanation of the justification.

*Price.* Children's justifications referenced the price of shawls and/or necklaces either quantitatively (through stating a currency price) or qualitatively (comparison of values using words such as "more expensive", "equal in cost").

*No price.* Children's justifications did not include any reference to the price of the shawls and/or

necklaces.

Table 4.

*Exemplars of children’s justifications to Bartering Tasks that were coded as price.*

Condition	Child’s Justification	Explanation
1. <i>Child loses:</i> Child is selling one shawl (20 pesos); other seller asks to trade shawl for one necklace (10 pesos)	ID16: 9-year-old seller: No, because the shawl costs more than the necklace.	The seller says she will not trade the shawl for the necklace. She justifies her judgment by comparing the prices of the goods, stating that the price of the shawl is higher than the price of the necklace.
2. <i>Even trade:</i> Child is selling one shawl (20 pesos); other seller asks to trade shawl for two necklaces (20 pesos)	ID 43: 8-year-old non-seller: Yes, the necklaces for 10 [pesos], and he [the other seller] is going to give me two [necklaces], and it’s 20 [pesos]. The shawls are 20 [pesos].	The non-seller says he will trade the shawl for two necklaces. She justifies her judgment by calculating the price of the two necklaces, and then comparing the price of one shawl to the total price of two necklaces.
3. <i>Child gains:</i> Child is selling one shawl (20 pesos); other seller asks to trade shawl for five necklaces (50 pesos)	ID04: 7-year-old seller: Yes, because five necklaces are 50 [pesos] and one shawl is 20 [pesos], so it’s more for the necklaces.	The seller says she will trade the shawl for five necklaces. She justifies her judgment by calculating the price of the five necklaces, and then comparing the price of the shawl with the total price of the necklaces.

On the *child loses* condition, justifications that referenced price consisted of a qualitative comparison of the two goods (i.e., shawls and necklaces) without a direct statement of the numeric value of the two goods. This may be because the trade was a one-to-one exchange, and there was not a need to state the numeric prices of the goods. The 9-year-old seller (ID 16) in Table 4 simply stated that the shawls cost more than the necklaces.

On the *even trade* and *child gains* conditions, children coded as *price* stated numeric values. For both conditions, children coordinated prices and quantities of the goods. On the *even trade* condition, the non-seller (ID 43) in Table 4 calculated the total cost of the two necklaces (20p); she then compared the price of the two necklaces to the price of one shawl. On the *child gains* condition, the 7-year-old seller (ID04) calculated the cost of five necklaces (50p); she then compared the calculated price (50p) with the price of one shawl (20p).

Figure 20 below contains the percentages of justifications that were coded as *price* or *no price* by population. I coded each justification separately, with children receiving a 0 for *price*,

and a 1 for *no price*. I then collapsed each child's score into one of two categories for the three conditions; (a) if a child used price 0 to 1 times, the child was assigned the code of *little to no use of price* and (b) if a child used price 2 to 3 times, the child was assigned a code of *significant use of price*. A Chi-square test revealed significant differences between sellers and non-sellers (Chi-square(1)=12.139,  $p < .01$ ).

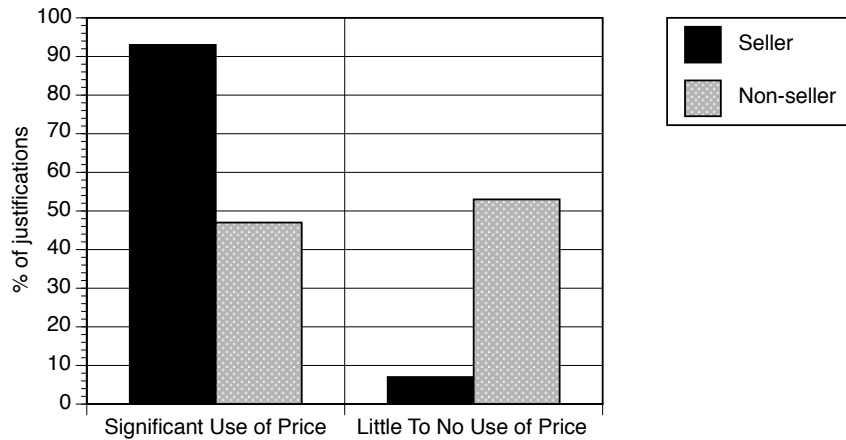


Figure 20. Percent of justifications that contained little to no use of price, or significant use of price across the three conditions

Sellers and non-sellers differed on their use of price, with sellers more likely to reference price in their justifications than non-sellers. Ninety-three percent of sellers' justifications used price significantly, whereas only 47% of non-sellers referenced price significantly. In the selling practice, goods are assigned prices, which may become the means by which to assess the value of goods. The results in Figure 20 offer positive evidence that participation in a selling practice is a context for the generation of ideas of exchange value as price.

For those sellers and non-sellers that did not refer to price in assessing the value of goods, in what ways were they assessing value? In order to answer this, I looked for categories in the justifications across all conditions that were coded as *no price*, regardless of judgments. There were three categories I coded: *individual wants and needs*, *quantity of goods* and *directives of an authority figure*.

*Individual wants and needs.* Children's justifications contained references to individual likes/dislikes and needs.

*Quantity of goods only.* Children's justifications contained references to only the quantity of the goods, without consideration of the price.

*Directives of an authority figure.* Children's justifications contained references to older sellers.

Table 5 below contains the condition, category, exemplar of a justification, and an explanation of the justification.

Table 5

*Categories in children's justifications that did not reference price on condition 2, the even trade.*

Condition	Category	Child's justification	Explanation
1. <i>Child loses</i> condition: child selling a 20p shawl, another seller wants to trade the shawl for 1 necklace (10 p).	Individual wants and needs	ID35: 7-year-old non-seller. Yes, it works for me. When I go to a party, I can put it [the necklace] on.	The non-seller made a judgment that she would trade the shawl for the necklace. She justified her judgment by stating that she wanted the necklace so that she could wear it to a party.
1. <i>Even trade</i> condition: child selling a 20p shawl, another seller wants to trade the shawl for 2 necklaces (10 p each).	Quantity of goods only	ID39: 7-year-old non-seller. Yes, because he's [the other seller] giving me two necklaces for one shawl.	The non-seller made a judgment that he would trade the shawl for the necklaces. He justified his judgment by referencing the quantity of the necklaces and shawls.
1. <i>Child gains</i> condition: child selling a 20p shawl, another seller wants to trade the shawl for 5 necklaces (10 p each).	Directive of the authority figure	ID05: 8-year-old seller. No, because my mom won't let me exchange necklaces for shawls.	The seller made a judgment that she would not trade the shawl for the necklaces. She justified her judgment by referencing the directive of her mother.

Justifications that were assigned the *individual wants and needs* code were those in which children referred to personal likes and dislikes for a good. The 7-year-old non-seller in Table 5 said she would trade the shawl because she wanted to wear the necklace to a party; thus, her assessment of the value of the goods was based on her individual wants.

Although there were not many justifications that were assigned this code (eight total across all conditions), it was only non-sellers who received the code of *individual wants and needs*. Some non-sellers may not have conceptualized the goods presented in the tasks as “sellable” goods; rather, they identified the goods as ones they might want to have or own. Sellers treated the goods as “things to be sold” versus “things to want.” This is not to say that sellers did not also want things that other children may want; rather, the specific goods that they sold were not goods that sellers could own or want, but goods to be sold to earn money.

Justifications that were assigned the *quantity of goods only* code were those in which children made reference to the number of the goods presented without a consideration of the price of the good. The 7-year-old non-sellers' justification, contained in Table 5, compared the quantity of the goods in the scenario (the two necklaces and the one shawl), but did not coordinate the quantity of the goods with the price of the goods. The justifications using quantity

may be based on the idea of a simple numeric comparison, where more of something is better than less.

Twenty justifications were coded as quantity; thirteen were non-sellers, and seven were sellers. *Quantity of goods only* was only used in justifications on condition 2 (*even trade*) and condition 3 (*child gains*); condition 1, child loses, was a one-to-one exchange, and therefore children did not explicitly refer to the quantity of the goods.

Justifications that were assigned the *directives of an authority figure* code were those in which children made reference to older sellers/mothers in their justifications. The authority figures most frequently referred to were mothers and older siblings. The 8-year-old seller in Table 5 referred to her mother and said that her mom would not let her trade the shawl for necklaces.

Across all the conditions, there were three justifications that referred to authority figures, and they all belonged to sellers. In Chapter 2, I detailed the structure of the practice, where selling was a family-based practice with mothers and older siblings distributing goods to young sellers, and young sellers then returning the goods they sold and money to their mothers/older siblings at the end of a selling cycle. Because of this, I posit that many sellers viewed the exchange value of their goods as tied to the directives of their mother. Non-sellers, who did not engage in this exchange, would logically not refer to this structure in their justifications.

***Children's use of price on the child gains condition.*** I now return to the *child gains condition* (child needs to decide if they will trade their one shawl (20p) for five necklaces (50p total)) in order to explore children's justifications further. Recall from above that on the *child gains* condition a majority of sellers made judgments that would not be advantageous to earning cash value (52% of sellers said would not trade their shawl for the five necklaces). Why did so many sellers make not advantageous decisions?

To investigate, I decided to focus on children's justifications to this condition. Specifically, I focused on children's reference to price in justifications in order to investigate if reference to price was related to either advantageous or not advantageous judgments. In other words, did reference to price in justifications always indicate an advantageous judgment, or did reference to price indicate not advantageous judgments as well?

To do this, I first coded all children's judgments for the *child gains* condition as either advantageous or not advantageous<sup>10</sup>. I then coded all children's justifications as either containing a reference to price or no reference to price. I utilized the same coding decisions that I reported above, where justifications were coded for reference to *price* or *no price*:

*Price.* Children's justifications referenced the price of shawls and/or necklaces either quantitatively (through stating a currency price) or qualitatively (comparison of values using words such as "more expensive" and "equal in cost").

*No price.* Children's justifications did not include any reference to the price of the shawls and/or necklaces.

Figure 21 below contains the percentages of children whose justifications were coded as price or no price by judgment type and population group.

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<sup>10</sup> For the *child gains* condition, an advantageous judgment was one in which the child said that they would trade their shawl for the five necklaces. A not advantageous judgment was one in which the child said that they would not trade their shawl for the five necklaces.



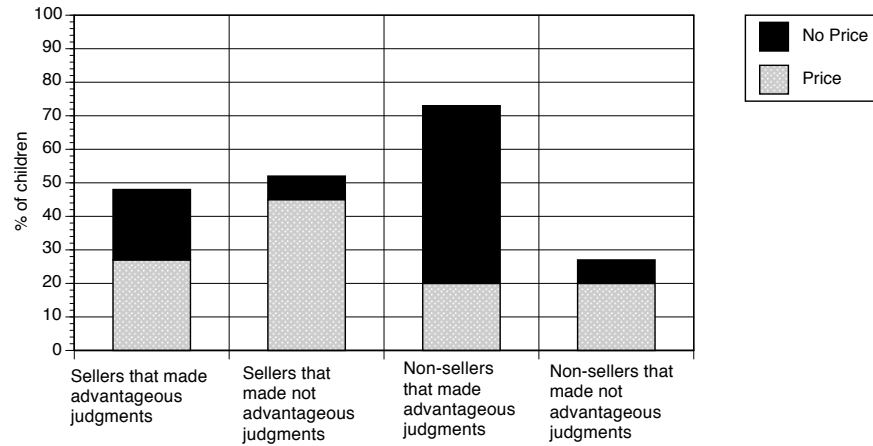


Figure 21. Percentages of children whose justifications were coded as price or no price by judgment type and population group

Sellers and non-sellers overall differed in their reference to price in justifications. A majority of non-sellers that made advantageous judgments (third column in Figure 3) did not refer to price, whereas sellers who made advantageous judgments (first column in Figure 21) were more likely to refer to price than non-sellers. This provides more evidence for earlier findings that sellers were more likely to reference price than non-sellers. Closer examination revealed that a majority of children that provided advantageous judgments (first and third columns) and did not reference price instead referred to the quantity of goods only. For this condition, a consideration of quantity only leads to an advantageous judgment (i.e., the quantity of necklaces is greater than the quantity of shawls).

A majority of sellers and non-sellers that provided not advantageous judgments (second and fourth columns of Figure 21) referenced price in justifications. This suggests that children may have referred to price in different ways in order to justify judgments that were not advantageous to earning cash value. Perhaps reference to price was not as straightforward as children totaling the prices of the goods and comparing the prices.

In order to investigate categories in use of price, I examined the justifications for categories that emerged, and then recoded all children's justifications to the *child gains* condition that contained a reference to price. The justifications were coded as *calculation of total price*, *moral reasoning*, and *index quality of good*.

*Calculation of total price.* Children coordinated price and quantity to calculate the total cost of the goods (5 necklaces for 10p each would be 50p total, and one shawl is 20p) and then compared the prices of the goods.

*Moral reasoning.* Children made a moral argument that reflected a concern for the fairness of the trade, judged through a comparison of the total prices.

*Index quality of good.* Children compared the qualities of the goods, emphasizing the quality of the good with the higher unit price.

For justifications that were assigned a code of *calculation of total price*, children coordinated the prices and quantities of goods to calculate the total prices and then compared prices. Children compared the price of five necklaces (50p) to one shawl (20p). For example, a 7-year-old seller replied: “Yes, because five necklaces are 50 [pesos] and one shawl is 20 [pesos], so it’s more for the necklaces.” This seller first totaled the price of the five necklaces (50p), and then compared this price with the price of one shawl (20p). In this case, the child used the total prices to assess and compare the value of the goods.

For justifications that were assigned a code of *moral reasoning*, children provided a moral argument that reflected a concern for the fairness of the exchange through a comparison of the total prices of the goods. For example, a 14-year-old seller made a not advantageous to earning cash value judgment, saying that she would not trade her one shawl for five necklaces. She then justified her judgment by saying “Because I’ll be abusing his confidence, and since he’s a fellow seller, no.” I interpret this justification as one in which the seller recognized that the price of the five necklaces was greater than the price of one shawl, and that trading her shawl for the necklaces would lead to a gain in cash value; however, the seller still did not want to trade as it would not be fair to other sellers.

Some young sellers may have seen their individual role in the practice as falling within the larger recurrent structure of the selling practice and were conscious of fairness between sellers; justifications coded as *moral reasoning*, therefore, reflected a concern with community and family earnings, not individual earnings. As detailed in earlier chapters, young sellers functioned within small, close communities of sellers. Sellers were members of the same indigenous group, and often had extended family ties. The exchange value of the goods in the *child gains* condition was not based solely on price, but also family and community ties that were situated within the larger selling practice.

For justifications that were assigned a code of *index quality of good*, children emphasized the quality of the good with the highest unit price. I defined quality as emphasizing a feature of the good that may relate to customer demand (e.g., customers buy the shawl more than the necklaces), origin of the good (e.g., the shawls are harder to make than the necklaces), or the utility of the good (e.g., the shawls keep people warm, the necklaces do not).

Justifications coded as *index quality of good* contained comparisons of the quality of the good with the higher unit price (in this case the 20-peso shawl) with the quality of the good with the lower unit price (the 10-peso necklace). In all justifications within the *index quality of good* category, children elevated the qualities of the good with the higher unit price. Table 6 contains exemplars.

Table 6.

*Children’s justifications coded as index quality of good on condition 3, child gains.*

Child gains condition	Judgments and justifications using <i>index quality of good</i>	Explanation
Child selling a 20p shawl, another seller wants to trade the shawl for five necklaces (10 p each).	ID13. 8-year-old seller: No, because we make the shawls. The shawls are more expensive because they are shawls.	The seller made a judgment that he would not trade the shawl for the five necklaces. He justified his judgment by comparing the quality of the higher unit-price good

	<p>ID29. 13-year-old seller: No, it doesn't work for me. It's 50 [pesos], but what if they don't sell. People like the shawls better than the necklaces.</p> <p>ID28: 12-year-old seller: No, because the necklace might break or lose its color.</p>	<p>(shawls are handmade) to the quality of the lower unit-price good (necklaces).</p> <p>The seller made a judgment that he would not trade the shawl for the five necklaces. He justified his judgment by comparing the quality of the higher unit-price good (customers like the shawls) to the quality of the lower unit-price good (necklaces).</p> <p>The seller made a judgment that he would not trade the shawl for the five necklaces. He justified his judgment by comparing the quality of the higher unit-price good (shawls) to the quality of the lower unit-price good (necklaces break and lose their color)</p>
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The children's responses in Table 6 contained comparisons of the goods by indexing the quality of the goods. ID 13 emphasized the handmade origin of the shawl and then stated that the shawls are more expensive. Although ID13 did not mention the necklaces, there was an implicit comparison of the shawls and necklaces. ID 29 drew upon customer demand to state that customers like the shawls better than the necklaces. ID 28 emphasized the quality of the necklace, and made an implicit comparison to the shawls.

Figure 22 below contains the percentages of children whose justifications were coded as either: (1) one of the three categories in use of price (*calculation of total price, moral reasoning, index quality of good*), or (2) *no use of price*, by judgment (advantageous vs. not advantageous) and population type (seller vs. non-seller).

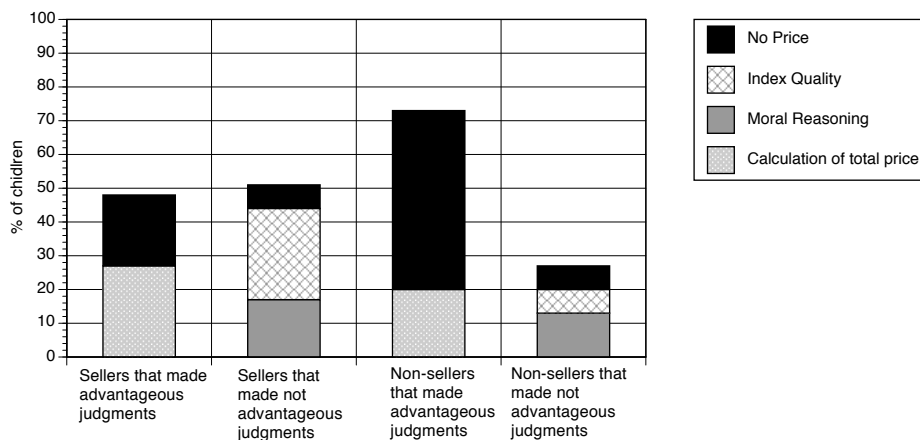


Figure 22. Percentage of children whose justifications were coded as *calculation of total price*, *moral reasoning*, *index quality of good*, or *no use of price*, by judgment and population type on *child gains* condition.

The results point to nuances in uses of price. Sellers and non-sellers that made advantageous judgments provided justifications coded as *calculation of total price*. Sellers and non-sellers that made not advantageous judgments provided justifications that were coded as *moral reasoning* and *index quality of good*. There were no significant differences between populations.

Although initially it appeared as though many sellers, and some non-sellers, were making not advantageous judgments in terms of earning cash value on the *child gains* condition, nuances in the ways price was referenced by children point to children still being concerned with earning cash value. The moral reasoning category, for example, still reflected a concern for earning cash value, but that cash value was distributed among members of the community and family.

The index quality of good category may also reflect a concern for earning cash value. As detailed in previous chapters, sellers often must choose which goods to emphasize as they approach and try to sell goods to customers. Sellers may have generated ideas that the good with the highest unit price yields the highest amount of cash value for the least amount of work. That is, selling a shawl for 20p yields more revenue than selling a necklace for 10p. To make the same amount of money, a seller would have to work harder to sell two, or five, necklaces. This may be a source for children's understandings of the exchange value of their goods, and may explain the different uses of price that exist.

Of course, this study has limitations due to the consistency of the goods presented in the various conditions. For example, it may be that the shawls have a special status in the practice in Oaxaca, and that children are not indexing the quality of the good with the higher unit price, but rather simply valuing the shawls above all other goods. Further conditions in which the goods are changed may address these concerns.

There were no significant differences between populations on uses of price. This may be due to the small sample, especially the small sample of non-sellers. Alternatively, non-selling children, although they do not participate in the selling practice, may have attributed a special status to the shawls because they were used in the interview tasks frequently. Further conditions in which the goods are changed may also address this concern, and point to differences between populations.

Section I: Exchange Value results point to nuances in understandings of exchange value. There were different categories among justifications in which children did not use price in determining exchange value such as individual wants, directives of authority figures, and quantity only. There were also different categories among justification in which children did use price, such as moral reasoning and index quality of good.

Although the focus in the above section was on exchange value, price was featured prominently in the analyses, as most sellers and some non-sellers frequently drew upon the price of a good to determine the exchange value. In the following section, I treat price as the focus of analysis. Through Selling Tasks that explicitly equate the exchange value of a good as its price, I ask, how do children understand the price of a good? What are children's ideas about why particular pricing decisions are made?

## **Section II: Children's Ideas of Price**

In this section, I turn to children's ideas of price through analyses of Selling Tasks, featured in Table 2. The two conditions asked children to imagine that they were selling shawls priced at 20p. In the first condition, *lowering the unit price (1 for 20p altered to 1 for 15p)* a customer approaches the child and asks them to sell one shawl for 15p (instead of the set price of 20p). In the second condition, *lowering price for a multiunit sale (1 for 20p altered to 3 for 50p)*, a customer approaches the child and asks them to sell three shawls for 50p (instead of 60p, the total price of three shawls for 20p each). Three shawls for 50p is a common price ratio in the practice. For both conditions, the child was asked to provide a judgment of whether or not to lower the unit price of the shawls, and a justification for their judgment.

Below I present results in two parts: (1) children's ideas about flexibility of price through analysis children's judgments on whether or not they would lower the unit price of the shawl, and (2) children's ideas of pricing decisions through analysis of the justifications children provided for judgments.

**Children's judgments on Selling Tasks.** I focus on sellers' and non-sellers' judgments to lower or not lower the unit price of the shawl. I do this to investigate the extent that sellers and non-sellers will (1) negotiate with a customer regarding the price of a good, and (2) recognize and validate a common price ratio in the practice (i.e., that of three shawls for 50 pesos).

**Judgments on the lowering the unit price condition.** Children's judgments were coded as either *will lower the price* or *will not lower the price*.

*Will lower the price.* Children said that they would lower the price of the 20-peso shawl to 15 pesos, as the customer asked.

*Will not lower the price.* Children responded that they would not lower the price of the 20-peso shawl to 15 pesos, as the customer asked.

Figure 23 below contains children's judgments by population. Fourteen percent of sellers and 40% of non-sellers would lower the price. A Chi-square test revealed significant differences between sellers and non-sellers (Chi-square(1)=3.87, p=0.05).

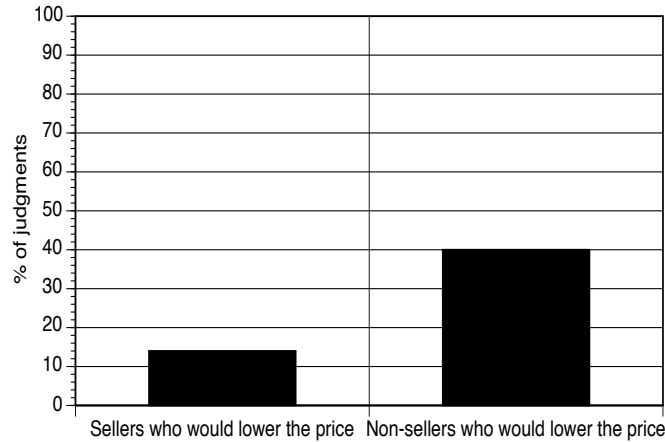


Figure 23. Percentage of children that would lower the price of the shawl on *lowering the unit price* condition.

Results show that non-sellers were more likely than sellers to lower the price of the shawl to 15p. It may be that sellers do not think that the price of a shawl can be lowered to 15p; that is, when this particular price is set, it is fixed and cannot be altered to a lower price. Alternatively, children might have more principled reasons behind why the price cannot be lowered, which I explore in more detail in the section below on pricing decisions. Of course, it may also be that the majority of children would not lower the price of the shawl because the price presented in this particular condition (i.e., 15p) was too low, and that a price of 18p, for example, would be acceptable. Nevertheless, the results do provide some insight into children’s ideas about the flexibility of prices.

**Judgments on the lowering price for a multiunit sale condition.** Children’s judgments were coded as either *will lower the price* or *will not lower the price*.

*Will lower the price.* Children responded that yes, they would sell three shawls for 50 pesos, as the customer asked.

*Will not lower the price.* Children responded that no, they would not sell three shawls for 50 pesos, as the customer asked.

Figure 24 below contains children’s judgments by population. Ninety-seven percent of sellers and 40% of non-sellers would lower the unit price. A Chi-square test revealed significant differences between sellers and non-sellers ( $\text{Chi-square}(1)=18.00, p<.01$ ),

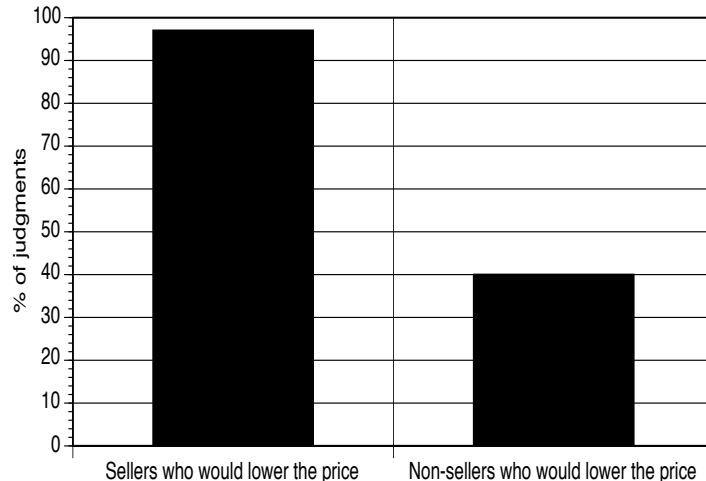


Figure 24. Percentage of children that would lower the price of the shawl on *lowering price for a multiunit sale* condition.

Ninety-seven percent of sellers, therefore, would lower the price of the shawls for a multiunit sale, and therefore recognize the common price ratio of three shawls for 50p. In contrast, only 40% of non-sellers accept this altered, but common, price ratio. Given that non-sellers do not have a means to learn about the common pricing structure that is particular to the sellers in Oaxaca, the differences between populations was expected when designing the task

**Children’s justifications on Selling Tasks.** In the second set of analyses, I turn to children’s justifications for their judgments. I first focus on difficulties with mathematics that emerged in justifications. I then focus children’s ideas of pricing.

**Difficulties with mathematics.** An interesting pattern that emerged from children’s justifications was non-selling children’s difficulty with the mathematics needed to respond to the *lowering price for a multiunit sale (1 for 20p altered to 3 for 50p)* condition. Sixty percent of non-sellers had difficulty with the mathematics, manifested in two categories difficulty: (1) non-sellers struggling to calculate the cost of three shawls at 20p each, and (2) non-sellers for whom the probe of “Three shawls for 20p each is 60p. Why three for 50p?” provoked them to reconsider their judgment to lower the unit price and change their answer.

In the first category, non-sellers unsuccessfully tried to calculate the total cost of three shawls at 20p each. For example, a 9-year-old non-seller responded to the question of, “would you sell three shawls for 50p?” with a “yes”. When asked why, he said, “Because it’s [the total price of three shawls] 50p... Wait, no... three [shawls] would be... It [the total price of three shawls] should be 75p”. This non-seller initially said he sell three shawls for 50p to the customers, indicating that total price of three shawls would be 50p. He then changed his answer, attempting to calculate what the total price would be if each shawl had an individual price of 20p. The non-seller calculated incorrectly and stated that the total price of 3 shawls would be 75p. He changed his response to “no”, indicating that he would not sell three shawls for 50 p, but would instead charge 75p. Another 7-year-old non-seller, attempting to calculate the total price of three shawls, concluded that the price should be 100p.

In the second category of difficulties, non-sellers changed their answer after the probe of “Three shawls for 20p each is 60p. Why three for 50p?” For example, a 7-year-old non-seller initially responded, “Yes, 50p is a lot”, indicating that she would sell three shawls for 50p. After

the probe, the non-seller said, “Actually, it’s better to sell [three shawls] for 60 [pesos], not 50 [pesos],” indicating that she would not lower the price of three shawls, and would instead sell the three shawls for 60 pesos. The shifting answer suggests that the non-seller was not confident in her calculations of the total price of the three shawls.

No sellers had difficulty calculating the total cost of the three shawls. In addition, no sellers changed their answer after the probe, whereas 40% of non-sellers changed their answer after the probe. Although not a focus of this dissertation, these patterns support findings from prior literature illustrating that sellers develop strategies and mathematical understandings that are different from those of non-selling children (Saxe, 1981; Sitabkhan, 2009; Taylor, 2010).

**Justifications on the lowering the unit price condition.** I reasoned that children’s justifications to why they would or would not lower the price of the shawl from 20p to 15p would reveal their ideas about pricing, in particular why the price of a shawl was 20p. To do this, I expected that children would refer to either the original price of the good and provide reasons for why the original price was set at 20p, or refer to the lowered price of 15p and provide reasons for why the lowered price was acceptable or not acceptable.

In order to investigate children’s ideas, I examined the justifications for categories that emerged, and then coded children’s justifications for the ways in which they referred to the original price (20 p) or the lowered price (15p). Their justifications were coded as either *price set by an authority figure*, *price referred to as fixed*, and *price set by ideas about profit*.

*Price set by an authority figure.* Children referred to the price as set by an older seller.

*Price referred to as fixed.* Children referred to the price as fixed by the selling practice.

*Price set by ideas about profit.* Children referred to the price as set by profit (i.e., amount of money that the child would earn from engaging in this exchange, either a qualitative sense or a quantitative calculation).

Justifications that were assigned a code of *price set by an authority figure* were ones in which children referred to an older seller in their justification of why they would or would not lower the price. Table 8 below contains exemplars of justifications.

Table 8.

*Children’s justifications for lowering or not lowering the price of a shawl by referencing an authority figure.*

<i>Lowering the unit price condition</i>	Exemplars of justifications
Child is selling one shawl (20p); a customer asks child to sell shawl for 15p.	ID 02: 7-year old seller Yes, because that’s what my mom does.  ID 24: 11-year old seller No, because my mom will scold me because I sold it [the shawl] too cheap.

Justifications that were assigned a code of *price referred to as fixed* were ones in which children referred to the price of a good as set either through the selling practice or the interview



tasks. All of these children, despite repeated probing to expand their thinking, were not able to elaborate on how the price as 20 pesos is determined beyond statements that reiterated the price or referred to the price as being fixed. For these children, it may be that the price of a good is not determined by anything other than the price itself, and that price is an entity that exists independently in the world. Table 9 below contains exemplars of justifications.

Table 9.

*Children’s justifications for lowering or not lowering the price of a shawl by referencing price as fixed*

<i>Lowering the unit price condition</i>	Exemplars of justifications
Child is selling one shawl (20p); a customer asks child to sell shawl for 15p.	ID 18: 10-year-old seller: No, because it can’t be done...Because if the customer gives me 15 [pesos]...well... It just can’t be done.  ID 41: 7-year-old non-seller: No, I would only sell them for 20...for 20.

ID 18, a 10-year-old seller (see Table 9), said “... it just can’t be done.” I interpret his justification as falling into the category of price as fixed because he treats the price of 20p for a shawl as fixed, and does not elaborate on why the price is 20p; rather, he refers to a vague notion of “it just can’t be done”, without providing further reasoning. For this seller, the price of the shawl may exist simply because it exists.

ID 41, a 7-year-old non-seller (See Table 9), said that she would only sell the shawls for 20p. Again, despite probing about why she would only sell the shawls for 20p, the non-seller simply repeats the price. I interpret her justification, and others like it, as falling into the category of the price as fixed because the price of 20p is treated as set, with no further justification provided.

Justifications that were assigned a code of *price set by developing ideas about profit* were ones in which children referred to ideas about profit. Table 10 below contains exemplars of justifications and explanations of the justifications.

Table 10.

*Children’s justifications for lowering or not lowering the price of a shawl by referencing ideas about profit.*

<i>Lowering the unit price condition</i>	Exemplars of justifications	Explanation
Child is selling one shawl (20p); a customer asks child to sell shawl for 15p.	ID 05: 8-year-old seller: No, we can’t sell it for 15 [pesos] because the string is very expensive.	The seller made the judgment to not lower the price of the shawl, and justified his judgment through ideas about profit by saying that he would not earn enough money if the price was lowered because of the high cost of the string

	<p>ID 20: 10-year-old seller: No, it doesn't work for me. Each shawl is worth 10 pesos, and I don't earn anything.</p> <p>ID 28: 12-year-old seller: No, I wouldn't sell it [the shawl], because I won't earn anything.</p>	<p>used to make the shawls.</p> <p>The seller made the judgment to not lower the price of the shawl, and justified his judgment through ideas about profit, saying that he would not earn enough money because of the high cost of the shawls' wholesale price.</p> <p>The seller made the judgment to not lower the price of the shawl, and justified his judgment through ideas about profit by stating that he would not earn money if he sells the shawl for the lowered price.</p>
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I defined profit as any reference to the amount of money that the child would earn from engaging in this exchange, either a qualitative sense or a quantitative calculation. ID 05 and ID 20, in the table above, both referenced the idea of profit by referring to the cost of the wholesale items, though they each described the origin of the shawls in different ways. ID 05 referenced the cost of the raw materials (i.e., string) to make the shawls, suggesting that his family may have made the shawls themselves. ID 20 referred to the wholesale cost of the shawls, which he stated was 10 pesos, suggesting that his family may have bought the shawls from outside vendors. ID 28 and ID 20 both stated that they wouldn't "earn anything". In this sense, profit may have been determined by a difference between the wholesale cost of the goods and the price of the goods. If the price was too low (and too close to the wholesale cost), there would be little to no profit.

Children's justifications that were coded as profit highlighted the relationship between the money one must earn from sales in order to make it profitable and why a particular price was set. For these children, their judgments to lower or not lower the price of the shawl were based on the idea that they needed to earn money from sales. These children differentiated between the total amount of money earned and the profit earned from a sale.

There were responses that did not fall into the above patterns, which I grouped together as idiosyncratic. The 4 responses that fell into this pattern represented children's misunderstandings of the task.

Figure 25 below contains the percentages of children's justifications in each category by population group.

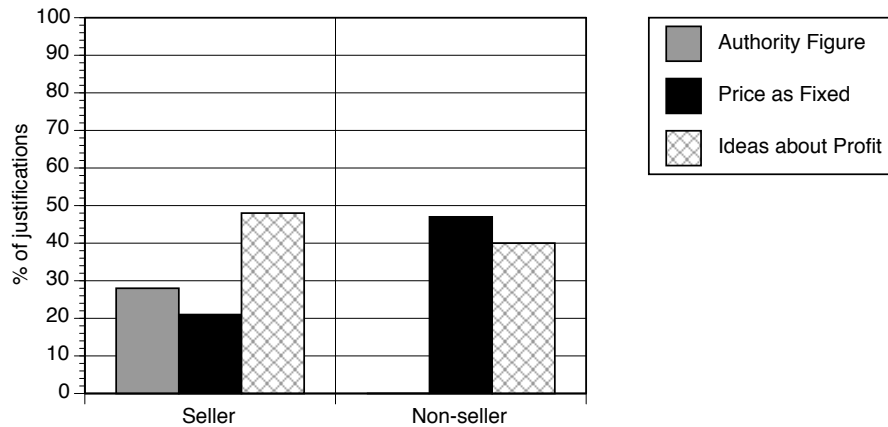


Figure 25. Percentage of justifications coded as *price set by an authority figure*, *price referred to as fixed*, and *price set by ideas about profit* by population on *lowering the unit price* condition.

Overall, sellers were more likely to refer to ideas about profit than other categories. Non-sellers were more likely to refer to the price of goods as fixed than other ways, possibly due to their lack of experience in the practice.

***Justifications on the lowering price for a multiunit sale condition.*** For this condition, I reasoned that justifications for why children would or would not reduce the price of the shawls from 60p for three to 50p for three in order to make a multiunit sale would also reveal their ideas about why this particular price ratio was set. Specifically, this task engaged children in thinking about profit, in that the discounted price of three shawls was an incentive to get customers to buy more goods. At the same time children may have had ideas that it was less work for them to sell three shawls to one customer all at the same time. A seller would not then have to convince three separate customers to buy one shawl each as selling three shawls to one customer is a guaranteed sale of three shawls. Even though the price was discounted, the security of the sale and the lowered time and effort in work made offering the discounted price advantageous for sellers' profit.

I expected that children, in justifying their judgments to lower or not lower the price, would provide reasons for why the discounted price of 50p was either acceptable or too low. To do this, I coded children's justifications as *price set by an authority figure*, *price referred to as fixed*, or *price set by developing ideas about profit*.

*Price set by an authority figure.* Children justified the price of 50 pesos by referencing an older seller.

*Price referred to as fixed.* Children justified price of 50 pesos by referencing the price as fixed by the selling practice.

*Price set by ideas about profit.* Children justified price of 50 pesos by referring to idea that lowering the price for a multiunit sale is profitable as it provides an incentive to customers (either through a quantitative calculation or a qualitative sense of profit).

In the first two categories, *price set by an authority figure* and *price as fixed*, justifications were similar in character as the *lowering the unit price* condition. Children's

justifications that were coded as price determined by an authority figure referenced a mother or older seller in justifying the price. For example, ID 13, an 8-year-old seller, responded, “Yes, 3 [shawls] for 50 [pesos], 1 [shawl] for 20 [pesos], 2 [shawls] for 40 [pesos], 3 [shawls] for 50 pesos]. That’s what my mom told me.” This seller referred to the price ratio of 3 shawls for 50p based on the directives of her mother.

Children’s justifications that were coded as *price as fixed* revealed that children considered price as an entity that exists in this practice, and did not refer to any factors that may determine price, even with repeated probing. For example, ID 09, an 8-year-old seller, responded to this scenario by saying, “Yes, because everyone sells them for three [shawls] for 50 [pesos].” The price was treated as fixed, and the seller did not explain why the price of three shawls for 50 pesos existed.

The justifications that were coded as *price set by ideas about profit* consisted of an explanation of why the price of three shawls for 50 pesos existed, referring to the profitability of a reduction in price for a multiunit sale. This was done either by referring to customer preferences for the discounted price, or referring to the fact that they were selling *three* shawls, so it was profitable to offer a discounted price. Forty-one percent of sellers’ and 13% of non-sellers’ justifications were coded as price determined by supply/demand/profit. Table 11 contains exemplars of justifications and explanations.

Table 11.

*Children’s justifications for lowering or not lowering the unit price of a shawl by referencing price set by ideas about profit.*

<i>Lowering the unit price for multiunit sale condition</i>	Exemplars of justifications	Explanations
Child is selling one shawl (20p); a customer asks child to sell three shawls for 50p.	ID 05: 8-year-old seller Yes, we sell three for 50 [pesos], and then we have to lower the price by 10 [pesos], otherwise no one will buy it. If we put it for 60 [pesos], no one will buy it so we lower it by 10 [pesos].	The seller made the judgment to lower the price of the three shawls. He justified the judgment by saying that the total price of the three shawls was lowered by 10p (from 60p to 50p) in order to make the sale appealing to customers.
	ID 15: 9-year-old seller Yes, I’m just lowering the price by 10 pesos. Not one [shawl] for 15 [pesos], but yes three [shawls] for 50 [pesos] because I’m selling a lot of shawls.	The seller made the judgment to lower the price of the three shawls. He justified the judgment by saying that the unit price can be lowered for a multiunit sale, but not for a single sale.
	ID 23: 11-year-old seller	The seller made the judgment

	Yes, because if they take three [shawls] we lower the price by 10 [pesos]. Not one [shawl] for 15 [pesos], because they're only buying one [shawl]. It's a lower price for buying more.	to lower the price of the three shawls. She justified the judgment by saying that total price of the three shawls can be lowered by 10p (from 60p to 50p) because multiple shawls were being sold.
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All the sellers in the table above referred to lowering the total price of the three shawls as an incentive to customers. ID 23 said "... It's [3 shawls for 50p] a lower price for buying more," and ID 05 said "...otherwise no one will buy it [the shawls]." ID 15 and ID 23 considered the role of profit when they said that they would not sell one shawl for 15p, but would only lower the price when they are selling more than one shawl. The justifications within this category suggest that some children are developing ideas of the role of profit in the setting of price.

Figure 26 below contains percentages of justifications in each pattern by population group.

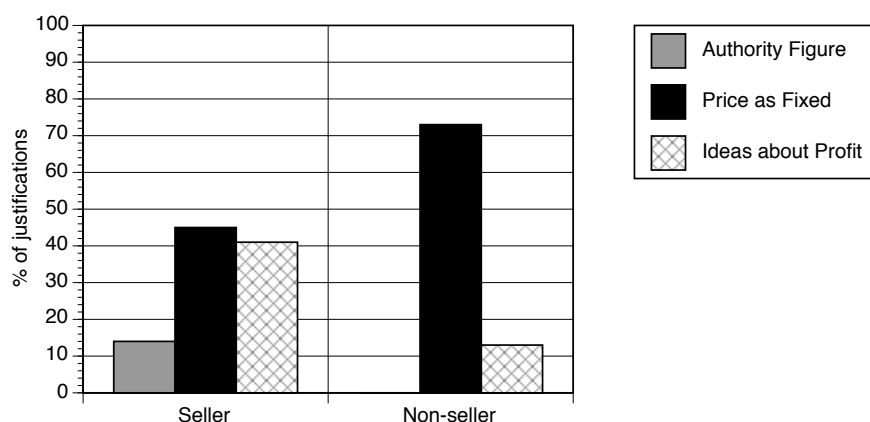


Figure 26. Percentage of justifications coded as *price set by an authority figure*, *price referred to as fixed*, and *price set by developing ideas about profit* by population on *lowing the unit price for multiunit sale* condition.

There were no significant differences between sellers' and non-sellers' ideas about how price was set. However, sellers were referred to both the price ratio as fixed as well as developing ideas about profit with similar frequency. Non-sellers were less likely to refer to developing ideas about profit, and the majority of justifications of non-sellers treated the price as fixed.

Recall from above that only 40% of non-sellers responded that they would lower the price of the three shawls to 50p, whereas 97% of sellers responded that they would lower the price. Because of this, many non-sellers produced justifications of why they *would not* lower the price; these justifications were different in nature than the justifications in which children were explaining why they *would* lower the price, and all involved the *price as fixed* code. Recall also that 60% of non-sellers had difficulty with arithmetical calculations for this condition. These non-sellers were all coded as *price as fixed* also, as their justifications did not offer any reasons for the price ratio beyond restating the ratio.

## Discussion

The purpose of this chapter was to investigate children's ideas of exchange value and price through interview tasks. I presented results from Bartering Tasks that were designed to reveal children's ideas of exchange value; Selling Tasks were designed to reveal children's ideas of price.

### Exchange Value

Results revealed children's that developing ideas about exchange value were nuanced in ways that aligned to the structure of the selling practice. I explicitly focused on what I regarded as a principle locus of development of ideas about exchange value: exchanges where the child assessed and compared the values of goods. For example, many children's ideas about exchange value referred to the price of the goods (i.e., the shawl for 20, and the necklace for 10p), where children assessed and compared the currency values of the goods in each condition. However, there were also ideas about the exchange value of goods that did not reference the price. Children referred to their individual wants and needs, the directives of authority figures, and quantity of goods only when evaluating the value of goods.

When children did treat exchange value as equivalent to price, there were nuances in the ways that price was used, which I explored on the *child gains* condition (trade of 1 shawl (20p) for 5 necklaces (50p total)). Some children calculated the total price of the goods, coordinating the price and quantity to come up with a total price. Other children based the value of the goods on the total price but also took into consideration the fairness of the trade, and produced a moral justification. Yet other children indexed the quality of the goods, and compared the qualities of the goods, favoring the good with the higher unit price.

### Price

Children's ideas about price and pricing decisions were also diverse. For some children, price was based on the directives of an authority figure, where children were told the prices of goods, and thus the exchange value of the good was attributed to an authority figure. For other children, price was fixed, and existed in the world independent other factors. The price was fixed largely by the structure of the selling practice. For example, almost all sellers reinforced the price ratio of 3 shawls for 50p; even though some sellers could not justify why this price existed, they knew it existed within the practice. Yet other children referenced profit in their ideas about pricing, pointing to a concern for earning money as well as developing ideas about the differentiation between total revenue earned versus the profit earned.

### Practice Participation

The results from both Bartering and Selling Tasks reveal that sellers and non-sellers performed differently on some tasks, and point to engagement in recurrent economic problems in the practice as a source of development for ideas of exchange value and price.

Overall, sellers were more likely to have ideas about exchange value as equivalent to price than non-sellers. Exchange value of goods as equivalent to price was linked to engagement in recurrent economic problems, as sellers exchanged goods for currency with customers. Repeated engagement in these exchanges may have been a source of development for sellers' ideas of exchange value, as the goods became entities that were "things to be sold" versus "things to want and own."

Non-sellers may have been less likely to develop ideas of exchange value as equivalent to price because they did not engage in the recurrent problems of the practice where goods took on a currency value. Of course, some non-sellers did equate the exchange value of the goods as price; this may have been due to experiences running errands for parents and buying goods in local stores. However, the extent of practice participation for sellers, within a highly structured and repetitive practice, was different in character than non-sellers' everyday experiences. Therefore, I posit that differences in ideas of exchange value as price was linked to participation in the selling practice.

The results of Bartering and Selling Tasks point to differences between sellers and non-sellers performance on aspects of the practice that are closely tied with practice participation. For example, only sellers referred to the directives of an authority figure, both in assessing the value of goods on Bartering Tasks and justifying prices on Selling Tasks. The directive of an authority figure is part of the everyday structure of the selling practice, where mothers provided the goods for their children to sell and directed their children to sell the goods for a certain price. Mothers may have had accountability structures in place. All of these factors supported ideas of exchange value and price as being determined by an authority figure in the practice. No non-sellers fell into the pattern, which, again, was expected because of a lack of participation in the practice.

Exchange value as determined by individual wants and needs was found exclusively among non-sellers. This points to some non-sellers as not viewing the goods in the exchanges as goods to be sold, but rather goods to be owned. Because non-sellers did not participate in a practice where they sold the goods, this pattern was not surprising, and points to ideas of exchange value as price being linked to the selling practice.

Only non-sellers had difficulty with the mathematics of the exchange on the *lower price for multiunit sale* condition on Selling Tasks. These findings suggest that sellers developed mathematical understandings and strategies through repeated engagement in the recurrent problems of the practice, whereas non-sellers did not.

Overall, the results of Chapter 3 point to varied ideas of the exchange value of goods, as well as how prices are set. In the next chapter, I discuss the overall findings of the Observation and Interview studies. In doing this, I reflect back on the prior literature reviewed in Chapter 1, focusing on the contributions of this study.

## Chapter 4: Discussion

The purpose of this dissertation was to explore the economic ideas that young children develop in selling artisanal goods in Oaxaca, Mexico. My overarching concern was to link children's engagement in economic exchanges with their developing economic ideas. In this concluding chapter, I review the major findings of the study, discuss contributions, and then consider limitations and next steps.

### Findings and Summary of Ethnographic and Interview Studies

In Chapter 2, I reported on an ethnographic study of sellers' economic behavior. The study consisted of observations of children's selling-related activities, demographic interviews with sellers, home visits to sellers' families, and shadowing of two young sellers. I then produced three strands of analysis: (1) the activity structure and associated phases of the practice, (2) common exchanges in which children participated in, and (3) recurrent problems in common exchanges.

In my analysis of the first strand, *phases of the practice*, I detailed three predictable and recurrent phases of the selling practice. In the first phase, distribution of goods, mothers or older siblings provided the young sellers with goods to sell. These goods typically consisted of shawls, necklaces, and bracelets. In the second phase, sell phase, sellers walked around the main plaza, attempting to sell goods to customers seated at restaurant tables. In the third phase, return goods to mothers, children returned the unsold goods and frequently the money they had earned to their mothers. Sellers moved through these phases multiple times in a selling day.

For the second strand, I described the *common exchanges* that occurred in the practice. Though I expected to find some bartering between sellers in the trading of goods, I did not. Instead I found that currency exchanges with customers during the sell phase were the only common exchanges that occurred.

For the third strand, I identified two *recurrent problems* that emerged in common exchanges: (1) how to convince a customer to buy a good, and (2) how to interact with a customer that attempted to bargain. When these recurrent problems emerged, I found that children used pitches to support a sale. These sales pitches had different emphases. Some involved showing the goods. Others emphasized the quality. And still others emphasized the price. Often, children coordinated emphases in sales pitches. I concluded Chapter 2 with a consideration of the arithmetical strategies that were interwoven in sellers' strategies to sell successfully, from coin and bill recognition to strategies to calculate total cost and change. I found that, in order to successfully engage in transactions with customers, young children coordinated their developing arithmetical understandings, such as knowledge of the value of coins and bills, with economic ideas such as emphasizing the qualities of goods. For example, if a child were selling two types of goods (e.g., shawls and necklaces), she would emphasize the quality of the good with the highest currency price.

In Chapter 3, I reported on my interview data with sellers and non-sellers. My focus was children's ideas about the exchange value of goods (i.e., the value of a good in an exchange), and strategies for the pricing of goods. I analyzed tasks in which children were asked to imagine they were selling a 20-peso shawl. Children were then presented with various conditions in which other sellers and customers wanted to trade the shawl for other goods or currency amounts. For example, a child was asked to imagine they were selling a 20-peso shawl, and another seller wanted the child to trade their shawl for one 10-peso necklace. Children were asked to provide a



judgment of whether they would or would not trade for each task, and then a justification for their judgment.

Analyses of children's judgments and justifications to tasks revealed differences between sellers and non-sellers, where sellers' ideas about the exchange value of goods and pricing of goods were reflective of their interactions with customers. Recall that in some of the tasks, children were asked if they would trade their 20-peso shawl for differing amounts of necklaces. Sellers were more likely to assess the exchange value of the shawls and necklaces by referencing the price of the good. In contrast, some non-sellers assessed the exchange value of the shawls and necklaces by referring to their own individual wants and needs, where goods were things to "own", not things to "sell", and therefore may not necessarily have a currency value.

## **Contributions**

**Focus on economic practices.** This dissertation focused on urban Oaxacan children's selling activities in an effort to enhance our knowledge of children's developing economic understandings as they engage with recurring problems that emerge in the selling practice. To do this, I built on prior work that investigated children's developing arithmetical strategies through ethnographic and interview studies (Saxe, 1991). The coordination of ethnographic and interview studies in Saxe's 1991 study provided a way for arithmetical strategies to be attributed to participation in the selling practice. For example, Saxe (1991) used findings from his ethnographic analysis of the candy selling practice to then design interview tasks that enabled a systematic probing of children's arithmetical thinking. In this dissertation, I coordinated ethnographic and interview studies; however, unlike the prior work, my focus was on the economic thinking of children and whether children's development of economic ideas could be attributed to their participation in the selling practice.

Recall my discussion of prior studies focused on children's development of arithmetical strategies while selling in Brazil (Saxe, 1991), and India (Sitabkhan, 2009). Saxe's (1991) study with Brazilian candy sellers, in addition to investigating arithmetical strategies, also documented sellers' pricing strategies in which children marked-up prices that balanced the likelihood of sale with the amount of profit per sale. However, a focus on children's developing understandings of the value of goods in transactions, and the pricing of goods, was not systematically studied.

Similar to the Saxe (1991) study, my prior study with children vending goods on trains in India (Sitabkhan, 2009) pointed to a need for a systematic investigation of children's strategies for successful selling. Recall the exchange I presented of a young child selling goods on a train in Mumbai, India, where the young seller was successfully able to convince the customer to buy one more good by saying that she did not have enough change. In the context of this exchange, I raised questions as to the child's motivations: did she not have enough change, or was she trying to increase her earnings from selling? The current study in Oaxaca addressed these questions by systematically documenting children's successful selling strategies, and the ways in which children understood the exchange value of the goods they were selling. In other words, sellers in Oaxaca used sales pitches as strategies for convincing customers to buy goods, much like the young seller in Mumbai did. The focus on successful selling strategies as a unit of analysis, and the investigative shift from a focus on recurrent mathematical problems to a focus on recurrent economic problems, thus enhances our understandings of children's activity in a selling practice.

**Focus on economic understandings.** To illuminate the economic ideas that sellers were developing in their practice, I drew upon Vygotsky's (1986) differentiation between scientific

concepts and spontaneous concepts. Scientific concepts are ideas that are the historical product of human's efforts to model and understand economic activity. Spontaneous concepts are ideas that children build from the aggregation of local interactions with the world. I used this framework in order to differentiate between the "scientific" economic ideas that children may learn in school (e.g., supply and demand models) versus the "spontaneous" ideas they may develop in a selling practice (e.g., exchange value of goods, price of goods).

Sellers' economic ideas bore little resemblance to the previous research on children's development of economic ideas, which focused on "scientific" economic concepts such as supply and demand models. I therefore departed from this previous work by shifting my analysis to spontaneous concepts. To do this, I focused on two core ideas that emerged through my analysis of the ethnographic data: (1) exchange value, or the value of goods in an exchange, and (2) pricing strategies for successful selling.

I documented children's varied ideas of the exchange value of goods through analysis of the interview tasks. For example, some children assessed the exchange value of goods through referencing their own individual wants and needs. Other children assessed exchange value based on the numeric quantity of goods. Yet other children assessed exchange value based on the price of the good, though I found that the character of price use differed. For example, some children coordinated quantity and price to calculate total prices. Other children coordinated price and quality of goods, drawing on characteristics such as the good's use, esthetic, and/or origin.

I documented children's varied ideas about pricing for successful selling through analysis of interview tasks in which children were asked to imagine they were selling a shawl for 20 pesos, and customers wanted to pay a lowered price. Children were asked if they would accept that price, and why or why not. I found that many children generated ideas about profit (both calculated quantitatively and qualitatively) while justifying a particular price. Other children referred to an authority figures such as a mother or older sibling as a source of a particular price. Yet other children referenced the structure of the practice where prices simply existed.

The focus on spontaneous economic ideas made visible the variation in children's developing ideas of the exchange value of goods and pricing. The focus also allowed for an investigation of what children knew, versus what they did not know. In other words, I was not measuring the extent to which children were familiar with economic concepts that may have been a topic of instruction in school. This is particularly relevant for the population of young sellers in Oaxaca, who live in poverty and must work for a living and therefore are provided with limited opportunities to receive a quality formal education.

There are many children in similar situations in the developing world who are often viewed as lacking in knowledge and skills, partly due to studies that measure only school knowledge and emphasize what children, such as the sellers, do not know. This dissertation offers a counterpoint to this narrative, by focusing on what children do know and learn from their everyday experiences.

## **Limitations and Next Steps**

This study leaves out an important consideration: the ways in which children tailor their talk and actions to customers to effectively sell goods. Focusing on children's consideration of customers would not only further illuminate the cognitive work with which they were engaged,

the focus would also reveal economic ideas left undocumented that are linked to sellers' activities.

To what extent were children aware of the individual needs and wants of customers in Oaxaca? As I documented in Chapter 2, there were varied types of customers that purchased artisanal goods from children. There were foreign tourists, frequently from the US or Europe. There were domestic tourists, usually from Mexico City. There were local Oaxacans. All three of these groups were able to afford a meal at the restaurants in the main plaza, which were known to be expensive, pointing to a large economic disparity between the young sellers and their customers. Did young sellers notice these differences between themselves and the customers, and/or between the foreign and domestic customers? Did children target customers differently based on what they knew about their needs and wants?

Recall the observation from Chapter 1 of a young girl selling necklaces to foreign tourists from the United States. I consider aspects of the sellers' tailoring of her talk and action in order to successfully sell to these two foreign tourists.

*Observation #1: A 9-year-old seller approaches two customers sitting at a restaurant table in the main plaza, selling two types of necklaces. One type of necklace cost 10 pesos, the other 20 pesos. The seller attempts to vend the 20-peso necklaces to the two customers by carefully choosing necklaces that match the clothes of the customers and putting the necklaces on them. When one of the customers shows interest in the 10-peso necklace, the seller tries to focus their attention on the 20-peso necklace by pointing out that they are made of stones, and took her a long time to make. After some time, one of the customers decides to buy a 10-peso necklace.*

In this observation, the young seller focused the customers' attention on the higher priced necklace by emphasizing the handmade quality of the necklaces, telling the customers the necklaces took a long time to make. Why did the seller choose a sales pitch that emphasized the handmade quality? Perhaps, the child believed that foreign tourists were particularly interested in buying necklaces that are handmade; alternatively, the child may have been relying on the sympathy of the customers by pointing out the labor that she undertook to make the necklace. This observation illuminates the importance of investigating children's understandings of their customers' need and wants, as children's ideas about their customers may be important factors in the development of sales pitches, and the economic ideas they may then develop.

Next steps would be to systematically investigate how children tailor their talk and actions based on their knowledge of the customer. For example, how do young sellers make decisions about which customers to target, and which sales pitches to use with which customers? Do young sellers recognize and understand the economic disparity between themselves and customers, and take advantage of it? In the observation above, did the young seller specifically target the foreign women? Did the seller make a decision to focus on the handmade aspect of the necklaces in order to ensure a successful sale?

Further observations and interviews could be targeted towards answering these questions. Observations could focus on descriptions of the customers children chose to target. Observations could also take note of the ways in which children differ their sales pitches according to what they perceive as the needs and wants of the customer. Systematic interviews could also be designed in which young sellers' views of their customers are probed.

It is important that future empirical work that attempts to make clear links between cognitive development and everyday activity consider individuals not in isolation to one another but as part of a collective group in which talk and action are tailored to one another. A focus on children's consideration of audience would thus enhance our understanding of processes of cognitive development, as well as provide more detailed knowledge of children's everyday economic ideas.

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