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## The Retail Shopping Experience for Low-Literate Consumers

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### ABSTRACT

With the lack of research on low-literate consumer shopping behavior in retail settings, retailing decisions are likely to be based on implicit assumptions about literate consumer behavior. In turn, this leads to a lack of understanding of how low-literate consumers can be empowered in the retail environment. A series of interviews and observations offer qualitative insights about the challenges that low-literate consumers face when shopping in retail settings and the coping strategies they employ. These insights are used to develop a theoretical interpretation of low-literate consumer behavior in the retail setting, covering aspects such as environmental effects, self-esteem maintenance and avoidance behaviors. Implications for retailers and consumer research are discussed.

### ARTICLE

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Grocery shopping for literate consumers may involve comparisons of prices, brands, and package sizes, and weighing costs and benefits to obtain the best deal. Being short of money at the counter may require returning an item, perhaps attributing the event to, and mildly scolding oneself for, forgetfulness. However, this typical visit does not begin to emphasize the challenges that low-literate consumers face at retail stores. Moreover, outcomes such as being short of money at the counter may be attributed to low literacy and lead to even despair rather than being attributed to something as mundane as forgetfulness. The 2002 National Assessment of Adult Literacy (NAAL) suggests that at least 22% of US consumers lack the ability to perform basic tasks in retail environments such as calculating unit prices and price discounts or comparing product attributes (Viswanathan et al. 2009). Skills taken for granted by the literate world are central to the low-literate shopping experience.

In this paper, we review research on low-literate consumer behavior to provide the background for our endeavor. We then use observational and interview data to examine shopping behavior among low-literate consumers, proposing a framework of challenges and coping strategies that characterize the low-literate consumer experience. We then explain this behavior using existing environmental and social psychological theories and develop implications for research and practice.

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## Review of Literature

Past research suggests two points of interest that this paper attempts to address. First, most of the marketing literature focuses on literate consumers and overlooks low-literate consumers. Thus, the literature does not encompass the behaviors displayed by low-literate consumers (cf., Adkins and Ozanne 2005a, 2005b; Viswanathan et al. 2005). Second, there is a relative lack of research on actual consumer shopping experiences that explicitly addresses interactions with store layout, price and discount displays, and the checkout process. There are, of course, notable exceptions, such as Baker's (2006) examination of the shopping experience for visually impaired consumers. Theoretically, the influence of the retail environment on low-literate consumers parallels past research on environmental effects on decision making (Lewin 1936; Donovan and Rossiter 1982). Our research is intended to develop themes that reflect the retail shopping experience for the low-literate consumer by building on research on low-literate consumers, particularly Viswanathan et al. (2005) and Ozanne and Adkins (2005).

More broadly, this work fits into research on vulnerable consumers. Smith and Cooper-Martin (1997) note that much of this work has examined different consumer demographics. Examples include consumer research on income (e.g., Alwitt 1996; Andreasen 1976; Hill 1991), race (e.g., Pollay, Lee, and Carter-Whitney 1992; Smith and Cooper-Martin 1997), age (e.g., Benet, Pitts and LaTour 1993; Lee and Soberon-Ferrer 1997), education (e.g., Lee and Soberon-Ferrer 1997, Smith and Cooper-Martin 1997), and physical health (e.g., Baker 2006; Mason and Scammon 2000). Our work examines low-literate consumers who, until recently, have been largely unexamined in research. Similar to much of the vulnerable consumer literature, we illustrate the increased susceptibility to harm that low-literate consumers face. However, our emphasis goes beyond suggestions for keeping low-literate consumers from harm. Instead, our contention is that low-literate consumers should be empowered to make better decisions in the retail setting, paralleling calls for education, in addition to protection, for resource constrained consumers (Viswanathan, et al. 2009).

Viswanathan et al. (2005) discuss the cognitive predilections, decision-making, and coping strategies of low-literate consumers. They report that low-literate consumers tend to use *concrete thinking* (processing single pieces of information without deriving higher-level abstractions, such as only considering price, versus making trade-offs between attributes such as price and size) and *pictographic thinking* (viewing brand names and prices as images in a scene rather than symbols to read; visualizing amounts of products to buy by picturing them rather than using available symbolic information). In both cases, empowering low-literate consumers requires clear presentation of price information (or other focal information, particularly with regard to pictorial information). Additionally, they find behavioral differences based on literacy level, suggesting that low-literate consumers are not a single, homogeneous group.

Adkins and Ozanne (2005a) report similar findings, including pictorial dependence, habitual purchase, and choices based on familiarity. They note the use of coping strategies including avoidance, self-esteem maintenance, and dependence on others. Their findings are based on low-literate consumers' feelings of being judged and stigmatized. They identify groups of low-literate consumers along the dimensions of identity management strategies and acceptance/rejection of the stigma arising from low literacy, and note different behaviors resulting from different levels of functionality within the low-literate population. Overall, they find that those who can manage or reject the stigma are more successful in negotiating the marketplace.

Our research examines low-literate consumer behavior in the retail shopping environment. We build on prior research to further understand differences between low-literate and literate consumer behavior and decision making. We organize our findings around two areas: challenges and coping strategies. We identify the basic literacy, numeracy, and functional retail skills that drive these challenges and coping strategies, and differences that arise based on functional literacy levels. This represents a logical progression of research to date that has examined functional literacy, building on distinctions among low-literate consumers suggested by previous research (e.g., Adkins and Ozanne 2005a; Viswanathan et al. 2005).

## Method

We attempted to illustrate the retail shopping experience for low-literate consumers by drawing from guidelines for designing qualitative research (McCracken 1988; Strauss and Corbin 1990). We used open-ended, relatively unstructured interviews to better capture the consumer's perspective (Spradley 1979). We examined interview and observational data collected over a number of years.

Our research was conducted at adult education centers and retail outlets in the Midwestern United States. Our focal informants were adult education students. Students ranged in grade equivalent levels from 0-12, based on reading and math ability, measured at enrollment and periodically thereafter. The students were placed into classrooms based on one of three groups: 0-4, 5-8, and 9-12. We also conducted four interviews with adult education teachers to gain a basic understanding of students, and three interviews with store managers to better understand store policies and attitudes toward low-literate consumers. The store managers were from a national discount chain, a national chain of superstores, and a regional grocery store.

We conducted 14 in-depth interviews with 0-4 level students and 21 in-depth interviews of 5-12 level students. Interviews ranged in length from 20 minutes to 2.5 hours, averaging about an hour. The interviews were tape-recorded and transcribed for analysis. Broad questions about a) store/brand preferences, b) price-value relationships, c) nutritional labels, d) the influence of ads, television, and other people on buying decisions, e) budgeting, and f) attitudes toward stores were used to focus the conversation on consumer experiences. Informants were encouraged to focus on what they considered important. To facilitate the interviews, examples of ads and coupons were shown to 0-4 grade level consumers who were initially reluctant to speak.

Group observations were also conducted with 0-4 grade level students on two separate shopping trips, spaced a year apart. One trip was at a single store (ten students), and another at a mall (ten students), with many of the students participating in both trips. Some of these students were interviewed individually. The shopping trips were regularly scheduled field activities that the students anticipated enthusiastically. Teachers developed shopping tasks as part of the field trips. Students were asked to find a set of items, list their prices, compute totals, and ascertain whether they stayed within a pre-specified dollar limit. If the limit was exceeded, they were asked to replace an item and re-compute the total.<sup>2</sup>

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<sup>2</sup> While assigned shopping tasks can potentially change the students' natural shopping behaviors, the running conversation among the students and between students and teachers during the shopping trips suggested that the students generally approached their regular shopping trips in a similar manner. Moreover, the students voted on which outlets to visit which increased their sense of confidence and ownership in the task.

To study direct interaction with the retail environment, we also conducted six one-on-one shopping observations of 0-4 grade level students and nine one-to-one observations with 5-12 grade level students. With the exception of one student who had moved from the 0-4 to the 5-12 level, these students were not interviewed or observed previously. The observations were not a part of the students' curriculum, however volunteers were recruited at the adult education center. Informants were asked to complete their typical shopping at a grocery/department store. To supplement their personal funds, informants were given a gift card worth \$10 and 2 coupons, each worth ¼ pound of branded meat. Informants were observed from a distance and occasionally asked short questions about their product choices in proximity of the focal products. Observations were followed by interviews where clarification of shopping behaviors was sought, with purchased items used as stimuli around which questions were organized. Notes and conversations were recorded during the observations to supplement the interview data.

## **Analysis**

We drew from literature on qualitative research in analyzing the data (Strauss and Corbin 1994). We examined interview transcripts and field notes to derive insights about the retail shopping experience, reading and rereading the transcripts from our interviews. We aimed to develop a deeper understanding of the retail store experience for low-literate consumers.

We observed a variety of skills covering a range of literacy levels, suggesting that low-literate consumers are a heterogeneous group. Our research suggested differences between 0-4 and higher levels, and paralleled prior findings of grade equivalent level as a proxy for functional literacy (e.g., Viswanathan et al., 2005). Students at 5-8 level are typically in transition, many of whom had previously been at the 0-4 level, and many were likely to be at the 9-12 level in the future. Given these distinctions, we analyzed interviewees in two groups, 0-4 and 5-12.

In this paper, we describe low-literate consumers' challenges in the retail setting and the coping strategies used in response. We categorize challenges and coping behaviors as being at the retail environment level or at the specific product level. The retail environment level relates to the broader retail setting (i.e., how low-literate consumers avoid or choose stores), whereas the product level relates to specific product choices. Our discussion of these elements draws from differences in functional literacy (i.e., 0-4 versus 5-12 grade equivalent levels). We examine underlying causes (i.e., basic literacy and numeracy, functional skills in the shopping realm) to draw inferences from available information, and aim to provide insight into the processes that underlie our findings.<sup>3</sup> Our discussion is summarized in Figure 1.

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<sup>3</sup> We use basic literacy and basic numeracy to refer to issues in reading and number processing. We also refer to functional skills in a retail context to refer to using available information to complete tasks at retail outlets, sometimes separating these into retail literacy and retail numeracy. At a broader level, we use the umbrella term, low-literate consumers, to refer to individuals low on both basic literacy and basic numeracy.

FIGURE 1



## Findings

### Consumer Challenges

#### *Retail Environment Challenges*

Low-literate consumers' challenges at the retail environment level encompass cognitive and affective aspects. The findings pertaining to these two aspects are outlined below.

#### *Cognitive Difficulties*

Perhaps the biggest challenge our informants faced was the vast information and product choice within the retail setting (Figure 1). Such challenges occurred at the retail environment level due to the size and layout of stores. Even in familiar locations, our informants had difficulty locating products.

Dale (40 years old, 0-4): I went to (large national superstore) one time and I couldn't find what I wanted, so I had to ask what I wanted.

Interviewer: How long did it take you to find (the product)?

Dale: An hour or a half-hour.

Dale may have overestimated the time spent, but several informants noted difficulty locating products in large stores, even familiar ones. Large, unfamiliar stores further exacerbated such problems.

Robert (50, 0-4): I have been at (national superstore) once but I didn't like it. It was too big to get around in... (regional grocery store) – I know where everything is, and when I go to a new store I got to look for everything.

Whereas literate consumers may prefer familiar surroundings, our informants depended on familiarity and were overwhelmed by large, unfamiliar locales where a high amount of effort was required to locate products. .

The overabundance of information and choice in the retail environment cognitively overloaded our informants. Price displays and sale signs with multiple prices (e.g., original prices, discounted prices, prices with coupons) caused confusion for our informants. Confusion with price displays sometimes led to difficult, highly emotional situations at the checkout counter.

Annie (58, 5-12): One day I went to the store and I looked at the sale... and then they had two labels on there, so I didn't know which label to go by. So I took it up to the cash register and the girl said, "Well, this is not on sale." I said, "Well, it said on sale." And she said, "No, it is not on sale." I ask her, "Why do they have two tickets on there then?" So she said, "well it's not," so I took it back. It made me angry because you see it on sale and not just when I was looking for it. So I was going to pay – it cost \$14 and I was going to pay the \$14 and I was going to pay for it but then she said it wasn't on sale and she tried to go up on me... I walked out the store and I was angry.

For our informants, the lack of functional retail skills (i.e., skills related the use of symbolic information to complete tasks, which we refer to as retail literacy/numeracy) prevented the identification and effective use of available information to navigate the retail environment. . These issues were more pronounced for 0-4 level informants compared to the 5-12 level informants who reported more confidence in the face of cognitive difficulties.<sup>4</sup>

### *Affective Aspects*

For our informants, affective and cognitive factors were mutually reinforcing (Figure 1), to the point that going to the store was often a threatening experience. Negative experiences arose from a variety of factors, such as carelessness and unscrupulous or inconsiderate sellers.

Janie (17, 5-12): I bought this coat . . . had like a burn right at the inside, and I am like I brought it back . . . nobody in my house smokes . . . I don't smoke. The woman

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<sup>4</sup> As discussed, we distinguish between 0-4 and 5-12 levels in much of our discussion because of the qualitative differences between these levels. However, when relevant, we mentioned differences between 5-8 and 9-12 levels.

was like, "Well see, you have burnt it because you know we don't sell anything with burns" . . . I was like, "Well you know I just want to exchange it, because I didn't do anything."

The cause of Janie's experience may have been her own carelessness or an unscrupulous seller, but the ultimate result was frustration and a feeling of helplessness. Such experiences add insult to injury, exacerbating the challenges of low literacy, and lead to apprehension and mistrust with shopping encounters. As negative experiences accumulated, regret over poor decisions and feelings of apprehension and mistrust led to the belief of being cheated or exploited.

Fran (24, 5-12): Well I had a car once.... It was about \$3000 or so. I guess people there kind of messed me around. They had me paying a little bit more than I should have.

Interviewer: How do you know that?

Fran: Because my brother talked to me and stuff. He told me that I was paying more... That kind of messed with my head a little bit because I was like, "You know it's the education." I need more skills if I go about doing stuff. I put a lot of money into it. I only had a few more payments to pay, and they came and repossessed it. I still think about it. I was like, "I was f\_\_\_\_\_d." I was played for the fool, I guess. It never happened again. That's how I feel. It won't happen again.

Our informants also reported hostility from sales personnel and attributed such hostility to misunderstandings caused by their limited retail skills.

Janie (17, 5-12): (store A) is just ... does not look the same as (store B)... Where (store A), everybody's really friendly. I mean they have like the right kind of music. When you are in (store B) you have to rush, and... At (store A) you can go at your own pace. Some people actually have a conversation with you (store A), and then the person bagging my food, they would say like, "Have a nice day." At the (store B) they're all looking at you like, you know, "Give me your money and get out of here," or whatever.

Janie's experiences were relatively benign but significant and related to a preference for friendliness (i.e., Store A), versus a feeling of being rushed by employees of Store B. In Janie's case, the feeling of being rushed arose at the cash register where she relied on the check-out procedure to eliminate items from her cart until the total matched the amount she was carrying.

The most dramatic and widespread intrinsic cost we found was undermined self-esteem, compounded by the reactions elicited from others. Practically all informants expressed concern over feeling belittled while shopping. Simply having enough money at the counter was cause for celebration and being caught short was cause for despair.

Jill (46, 5-12): That was hard... I say, "Do you think I reach a hundred and fifty dollars?" That's what I say to myself. "Do you think I reach a hundred and fifty dollars?" I say, "Don't think so." I talk like I'm talking... "Don't think so." Then I go to the cashier. When I see I haven't covered a hundred dollars I say, "Wow! I did good. Wow, I did good."

Affective environmental challenges were more pronounced among the 0-4 informants compared to the 5-12 level informants, consistent with the higher level of cognitive difficulties and accumulated negative experiences they reported.

### ***Product-related challenges***

Product-related challenges stemmed from product decisions and focused on decision making. The information display issues discussed earlier provided the context in a broader sense and were relevant for specific product purchases.

#### *Difficulties in processing numerical product information*

Our informants spent considerable effort processing numerical information. This was particularly the case with 0-4 level informants who labored over locating price displays, reading prices, and translating volumes into purchase units (e.g., a total of 150 candles requires boxes of 100 and 50). We observed several errors in locating prices (i.e., finding the correct price tag), reading prices (e.g., reading \$220 as \$22), and writing prices down (e.g., \$11.99 as \$11). Errors in reading numbers also occurred, due to a tendency to interchange digits (reading \$49 as \$94).

Basic computations, such as computing the price of two units given the unit price, required paper and pencil calculations or the use of calculators for 0-4 level informants, as did sales tax estimates. Some informants erred when using a calculator. Relatively simple subtractions, such as those involving round numbers, required arithmetic computations.

Interviewer: How do you figure that (half price) out? If it is \$10 how much would it be?

Dale (40, 0-4): Maybe \$9.

Interestingly, a different phrasing of the same problem resulted in a different, correct answer, though a more complex problem was avoided entirely..

Interviewer: If something is \$10.00 normally and they say it's half off how much would you pay?

Dale (40, 0-4): Five dollars.

Interviewer: What about \$13.50?

Dale: I don't know.

Interviewer: Can you do that in your head?

Dale: No.

Our informants struggled with the use of percentages and fractions and often confused discounts (e.g., 30 cents is confused with 30% off). One informant avoided products with percentage off signs, explaining that it would require checking the price at the checkout counter.

#### *Difficulties in processing text-based product information*

Our informants had difficulty reading product information (Figure 1), which resulted in problems at the product level, given the need to transact, read brand names, store signage, and product information. Problems included misreading (or not reading) relevant information and struggling to recognize complex words. Difficulties with reading resulted in avoiding text-based information and the use of visual cues to gather information.



These difficulties led to confusion about what was actually being purchased. For example, reading difficulties led to confusion over which items were on sale. Although our informants generally struggled with reading, some did not resign themselves to poor outcomes. In particular, informants with relatively high literacy levels leveraged their skills and noted the importance of reading when making purchases.

Xavier (21, 5-12): Basically, I get the sales pages before I get there. You know, look at the sale paper... Then you know and go by their prices. Cuz, it don't make sense to be going to (Store A) and they got a pack of chicken wings for ten something a pound, and I go to (Store B) and they got a pack of chicken wings for \$4.99 a pound. So, I go to (Store B). But, you got to survive and eat out here, so you got to spend what you need. That's what I basically do, but I like the sales as far as the food and everything...

(later in the interview) You just can't pick up something and don't read. You just can't go to the grocery store and say, "I want that." You gotta read. That's what the label's there for. You gotta look at it and read.

## **Coping strategies**

Low-literate consumers displayed ingenuity and adaptivity through coping strategies based on the challenges faced in complex retail environments. These strategies addressed both environmental and product level challenges (Figure 1).

### ***Coping with environmental challenges***

Our informants' coping strategies for environmental challenges were related to simplifying cognitive demands and reducing the likelihood of negative affect associated with shopping (Figure 1), and often involved putting oneself into a comfortable environment (e.g., shopping in stores where prices are easy to calculate or going to stores with helpful employees).

#### ***Simplifying cognitive demands***

Our informants coped with cognitive demands in a variety of ways (Figure 1). One strategy was to choose outlets with fewer choices as the confusion from having too many options actually inhibited meaningful choice. Erika described two outlets: Store X was a large grocery store and Store Y was smaller "dollar store" with limited product choices.

Interviewer: Does Store X have more to choose from or Store Y? Which one has more stuff to choose from?

Erika (38, 0-4): Store Y.

Interviewer: Store Y has more stuff to choose from?

Erika: Yeah.

Erika's self-imposed misconception of a store's features may have been a response to the sheer size of a store, but was a functional misconception as it placed the informant in a less cognitively demanding retail environment. Similarly, informants mitigated confusion over store prices by employing a broad rule to decide which store had lower prices.

Interviewer: So where do you go grocery shopping?

Shauna (35, 0-4): (National grocery store). Because food is cheaper there... they don't do sales, but everything is always cheaper there.

Similarly, Brandon preferred shopping at a national "dollar-store" because of the "easy prices," which referred to keeping track of money and related tasks.

Interviewer: Why do you like (national "dollar-store")?

Brandon (23, 0-4): The prices are easy... They have the lowest prices, but I like that everything is a dollar or two dollars. It's easier to keep track of my money.

Whereas Shauna and Brandon employed broad rules to simplify cognitive demands, literate consumers may do so for the sake of convenience. Other informants reported choosing familiar contexts which made it easier to locate products, identify brands, and identify discounts. This resulted in store loyalty. The retail context became central to informants' processing of numerical information, evidenced by the use of price reference points.

Teacher (0-4): . . . when they go to (national fast food restaurant), they know that for \$5 they can get a meal. That's how they have been taught. So they'll always have a \$5 bill and they'll just expect (national fast food restaurant) to give them back right change. So they're really easy to cheat.

The simplification of cognitive demands provided a stable context in informants' lives and enabled them to negotiate the information environment, but resulted in surrendering the option of searching for the best values at different stores.

Overall, difficulty with abstraction led to the use of broad rules which simplified cognitive demands and resulted in store and brand loyalty. Our informants justified store choices on the basis of having done it before, thus knowing how to conduct transactions. The strategy of simplifying cognitive demands (e.g., seeking out stores with fewer choices and fewer demands) was particularly germane for 0-4 compared to 5-12 level informants, the latter being less likely to report avoiding complex retail environments.

### *Seeking security in shopping environments*

Our informants sought security in their shopping environments (Figure 1). Feeling comfortable during shopping (e.g., shopping at a comfortable pace) took on added value given their cognitive difficulties, harsh retail experiences, and undermined self-esteem. One major coping mechanism that our informants reported was dependence on friends, relatives, store personnel, and even strangers.

Fran (24, 5-12): It took me a long time kinda, you know, to go grocery shopping for myself. I always get my mother to come with me so she can help me do the pricing, and it's still hard for me like with meats and stuff...

Retail store personnel played a central role as our informants often visited stores where they knew helpful employees who helped them overcome struggles in the store. They reported establishing relationships with employees who were aware of their literacy and numeracy deficiencies and were willing to work with them whenever their shopping basket total exceeded their funds on hand. Relationships with employees created a defensive barrier against hostility

and embarrassment while shopping. Implicit here was relief at not being embarrassed at the store which translated into gratitude and goodwill toward the store. Annie's approach involved using a mistake by a sales clerk as a means of establishing what she labels a "best friends" relationship.

Annie (58, 0-4): One time I went and asked a man that worked back there in the meat department, and he was kind of a snot, so I didn't like that too much. Afterwards he came and told me, sorry, that he didn't mean that and he wasn't feeling too good today. I said "well, why did you take it out on me?" Now we are best friends.

Those who reported cultivating relationships with store personnel also reported feeling more comfortable while shopping and seemed highly loyal to the stores in question.

### ***Coping with product-related challenges***

At the product level, our informants' coping strategies aimed to address difficulties in encoding alphanumeric information and difficulties with functional skills when making specific product choices. Our informants used coping mechanisms related to concretizing decisions and relying on a sense of knowing, both of which facilitate the usage of available information to make product decisions (Figure 1).

#### ***Concretizing shopping decisions***

Our informants concretized decisions to negotiate difficulties with issues related to basic literacy, numeracy, and functional skills in a retail context (Figure 1). Informants used numbers to perform concrete operations. For example, one informant reported that they learned, through instruction, to look at the expiration dates without necessarily understanding their exact meaning, but knew that they shouldn't buy products where the dates on the label have already past. Although our informants used a relatively low amount of symbolic information, a large proportion of the information used is numerical in nature which resulted from the focus on price information and on the necessities of handling money (Viswanathan et al. 2005). Ironically, the centrality of price and the inability of handling money necessitated numerical processing. Our informants were often unable to derive meaning from numerical information but were able to concretely process numbers by focusing on the larger or smaller number (e.g., picking the product with the lower price).<sup>5</sup>

Holly (18, 5-12): If it is 40-50% off, I'll just get it anyways. Then I'd know in a close range it's close to half off and it's easier...

Interviewer: Suppose something is 75% off, let's say it's \$40 and 75% off, would you get it?

Holly: Probably.

Interviewer: Are there some sales like that, particularly half off, 30% off that you avoid because you say "I don't want to figure that out" or do you normally if it's 30% off you figure it out?

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<sup>5</sup> Numerical information can be processed at a surface level without attention to meaning, and can consequently be easily processed as well (Viswanathan and Childers, 1996; Viswanathan and Narayanan, 1994), but deriving meaning from a single piece of numerical information (e.g., 120 calories is low) requires additional effort and knowledge.

Holly: Sometimes I see it for 30 or 50% off, I'll just walk away. Because sometimes you're not in the mood (to figure out the price). You just come to buy something and you just buy something else.

Holly used the basic rule that 40-50% off was good, thus anything more than 50% off was probably worth buying. However, with numbers less than 50% off, the added difficulty of calculation made not buying a more likely option. Similarly, some informants abandoned purchases altogether due to difficulty computing final prices based on percentage-off or fraction-off offers.

In addition to judging larger versus smaller numbers, some informants developed conservative rules to circumvent computational difficulties. For example, Kendra (46, 5-12), who does not appear to work well with percentages and fractions, used an instinctive, conservative estimate for the cost of sale items and then compared it to her available funds. When asked how much she would pay if the price was 50% of \$90, she answered that she could and that she "would pay about \$60". Kendra had a reasonable idea about the price but this was likely from experience, not necessarily from being able to quickly make computations. Other informants set a limit on the number of items purchased based on approximate dollar amounts, a tactic that Fran employed.

Fran (24, 5-12): When I'm shopping on my own, I mostly stay in my budget... If I like had \$5 on me, I would just get one thing.... I get whatever I can find the cheapest.

Some informants used pictorial information relevant to product choice to bypass problems with symbolic information. Pictographic thinking emerged in several forms at the product level, including dependence on visual information.

Paula (18, 0-4): I look at the price, I look at the picture. Whatever the picture, if that's what I want, that's what I'm gonna get.

Pictographic thinking also extended to "sight reading" and viewing numbers as images, as our informants repeatedly purchased the same brands by viewing brand names as images in a scene, as reported by Viswanathan et al (2006).

Robert (50, 0-4): If I see something or a word that I don't know and you show it to me and tell me what that word is, a lot of times the next day or the day after I am still going to know what that word is. I call it sight reading. Everything I did, I had to do by sight.

Interviewer: So you recognize things?

Robert: Yeah and then when you drive on the road and a lot of the stuff you see, a person like me, when you see it, you got to remember because it might be a place where nobody else is around and you might not be able to ask a person. So when he sees that word, he got to learn it and learn it right. That way, the next time he see it he is going to know that. He might be in a place where he can't be making no mistakes. Sometimes mistakes can get you killed.

Interviewer: ... how could shops make things easier for you?

Robert: If you see (Restaurant A), you wouldn't go to (Restaurant B) looking for a (Restaurant A) sign. You see (Restaurant A) and you know there it is. They are going to have a – even if you can't spell the word (Restaurant C) you are going to see (recognizable icon) and the big old chicken box up there so you got to have some common sense.

However, the use of surface level cues on a package led to incorrect choices.

Zachary (38, 0-4): Well you know just like they got the sugar in the box. They got the white sugar and the brown sugar. See I had problems with that now once – sugar. I got a box of brown sugar at the house, I didn't even know, I thought it was a box of white sugar because the price I seen is 99 cents. Yeah, that's a good deal on the sugar and I'm gonna get it. I got the sugar in there, brought it home, and opened it up and it's brown sugar. I'm like, s\*\*t, I can't use this, you know? That happened.

Teacher (for 0-4 grade level classroom): . . . they'll buy (national brand) green beans because... [it has] got a wonderful picture on the label. We had a student (wrongly) buy a pound of (national brand of shortening) because it had a picture of a fried chicken on it. They depend on the visual. . .

Extending beyond using pictures on packaging, our informants visualized attributes to get around the use of numerical information. For instance, informants visualized the amount of sugar required for baking a cake which enabled them to bypass numerical information. Other informants computed money spent by picturing the dollar amount they started out with and then mentally removing dollar bills during shopping.

Wilson (35, 0-4): The reason I like her (teacher's) techniques is she lets you picture it in your mind, she visualizes and she tell you to take that picture and picture it in your head... Just pictures something in your head and it pops right out and you get it and that really is the number one thing... Because I was so stressed out with this math and measurement and she – we worked on it for two days and the second day it just popped in my head. Picture it. And I got that picture of how many liquid in a jar to how many yards in a stick and picture a stick and picture how many units in it and I just caught on right there. I only had to work on it for two days and she taught me it two days to picture it in my head. And now I got it down pat that I know it now and there isn't nothing to stop me no more. Just sit and picture it.

One informant further concretized the task by actually moving money from one place to another as they went through the store.

### *Shopping with a sense of knowing*

Our informants often relied on a *sense of knowing* when making product decisions. This was an overarching feel for product quality and suitability that informs product decisions that is not based on symbolic information (Figure 1). This addressed challenges in effectively using widespread symbolic information in retail environments. Our informants based purchases on products “looking good” or “being fresh,” or merely on a positive feeling engendered by exposure to the product. However, they were hard pressed to provide explanations for their choices based on objectively assessed attribute information. “Gut feeling” was another vernacular label applicable to a sense of knowing that was otherwise hard to explain. The key was that our informants fell back on a sense of knowing based on intuitions about product quality and benefits. One way in which this intuition manifested itself was in forming an overall product assessment, followed by using one attribute to justify the assessment. This was evidenced by Fran's shopping approach.

Fran (24, 5-12): I just look at what's healthy for them [children]. I don't really look at how many grams was in it, or how much fat is in it. I don't really pay attention to that too much. I know they get their fruits and vegetables, and they eating healthy. So I don't really pay no attention to that (nutritional labels).

Interviewer: So how do you figure what is healthy?

Fran: For instance I wouldn't give them too much sweet. I'd rather give them like a (brand name) crackers or something that ain't got a lot of sweet in it 'cause my mother didn't give us a lot of sweets. They like a lot of broccoli and cheese. That's one of their favorites. They eat healthy. I know that. My mother always cooking good foods so she tells me, you need to feed them good food. And baked foods.

For Fran, healthiness was a combination of compatibility with what she learned from her mother and her intuitive knowledge about nutrition. Baked foods were good, but she did not know why. Similarly, a specific brand of crackers was lower in sugar than other alternatives, but the point of reference is unclear.

Lauren (60, 5-12): I don't read. I just look at stuffs that look good to me. I just get it; I don't have to go by ingredients... Sometimes I look and see it's fresh, and I just pick it up.

Lauren anchored on things looking "fresh," but when asked about how she assessed freshness, she found it hard to articulate.

Though many consumers use intuition in making product choices, unique to our informants was the use of this approach to bypass product related challenges. Xavier said it best when asked if he ever became frustrated with outcomes resulting from the use of a sense of knowing.

Interviewer: Have you ever felt frustrated? For instance, the instruction manual ... (interrupted).

Xavier (21, 5-12): No. Because, you have to use common sense. I mean, your brain thinks. A person getting his diploma, that don't mean he gotta be dumb... Ain't no sense in me being frustrated. If I be frustrated, I be frustrated all my life. So, that means I have to really think.

Xavier, who expressed detailed explanations about products, product labels, retailing, and human nature in general, refused to get frustrated. He used the word "think" to convey a sense of knowing about products and going forward based on that assessment. For Xavier, the use of a sense of knowing was the norm and did not merit changing despite the potential for detrimental outcomes, particularly by literate consumer standards.

Relying on a sense of knowing does not mean that functionally low-literate consumers do not recognize when their decisions produce clearly detrimental outcomes. Our informants were sensitive to poor quality and performance, and readily admitted when they made a bad purchase. When an overall sense of knowing led to detrimental decisions (e.g., buying a defective product), our informants switched brands and products but the reasons attributed were holistic in nature, a sort of trial and error approach.

Interviewer: How do you learn about these brands?

Robert (50, 0-4): Because you messed up once and you bought something that isn't right and you know that it don't taste right so you ain't going to buy that no more.

In switching their holistic sense about the specific product from positive to negative (as Wilson did when he declared, “this car ain’t no good”), they sometimes offered with a single attribute explanation or rationale (e.g., oil burning hot) for the new assessment. In effect, they used what outside observers would call a trial and error approach for product selection.

## **Summary of Findings**

We organized our findings into the challenges and coping strategies of functionally low-literate consumers at the product and the larger retail environmental levels (Figure 1). Retail environmental challenges capture cognitive and affective elements and product level challenges capture processing of text-based and numerical information. The anxiety and cognitive difficulties associated with the larger retail context can further inhibit product-related processing of information and exasperate product level challenges. At the retail environmental level, coping strategies relate to seeking simplified cognitive environments and seeking security in the retail context. At the product level, coping relates to concretizing decisions and using a sense of knowing.

In general, informants at the 5-12 level were better able to use basic literacy and numeracy and retail functional skills to navigate the retail environment and compensate for deficiencies. On the other hand, 0-4 level informants faced a negative spiral caused by the mutually reinforcing nature of challenges at both the product and retail environmental level. This resulted from the decreased possibility of using one form of information to compensate for the other or of developing functional skills pertaining to text-based or numerical information.

Despite our informants’ negative outcomes, there was also evidence of empowerment for low-literate consumers. Some informants exhibited a willingness and desire to learn, suggesting that meaningful changes in how consumers deal with the retail environment can lead to real life changes. Our data also suggest that as low-literate consumers increase their literacy levels, genuine improvements in the ability to navigate the retail environment are seen. Similarly, some low-literate consumers display ingenuity in developing rules to cope with the constraints they face. The usage of calculation tools and the learning of accurate heuristics can empower low-literate consumers’ decision making in the retail setting while minimizing the cognitive effort required. Additionally, our data suggest that those who are able to develop social networks are also able to achieve better outcomes, and thus efforts by retail outlets can further empower low-literate consumers in the retail environment.

## **Theoretical Interpretation of Findings**

In this section we use existing theories to interpret our findings. Our data suggest that our informants experience anxiety in the retail environment, resulting in avoidance behaviors (i.e., desire to avoid interactions or even certain environments), which are characterized by deteriorated performance and dissatisfaction (Donovan, et al. 1994). We use findings from environmental and social psychology to explain these behaviors, contrasting traditional notions of consumers optimizing decisions on economic outcomes.

Any context can be described by the environmental cues that trigger specific mental states that influence behavior. Lewin (1936) proposed that behavior is a function of person and environment, examples of which are studied in environmental psychology (e.g., Mehrabian and

Russell 1974). Donovan and Rossiter (1982) used a modified version of the Mehrabian and Russell (1974) model, based on the Stimulus-Organism-Response (S-O-R) paradigm, where environmental characteristics influence an individual's affective state, which subsequently affects approach/avoidance behavior. Accordingly, we organize our discussion around stimulus, organism and response.

### ***Stimulus: The retail shopping environment***

Donovan and colleagues used the S-O-R framework to examine the effects of store atmosphere on purchase (Donovan et al. 1994) and purchase intention (Donovan and Rossiter 1982). They argued that store atmosphere affects in-store behavior, with cognitive aspects driving store selection and planned purchases and affective factors influencing unplanned spending. They additionally posited that cognitive (e.g., product variety, product quality, price, and value) and affective (e.g., arousal, pleasure) factors are mutually reinforcing in driving actual purchases. Similarly, Sherman et al. (1997) examined store environment and consumer purchases, finding that a variety of emotions (particularly pleasure and arousal) can play a mediating role. Whereas this research generally examines consumers at-large, we use the basic S-O-R paradigm of examining the interactions of cognitive and affective factors to describe the low-literate shopping experience. Our data suggest that the low-literate consumer experience can differ fundamentally, as evidenced by the unique challenges previously described.

### ***Organism: Self-esteem maintenance***

Our data offer evidence that shopping-related tasks can trigger anxiety, fear of embarrassment, and damage to self-esteem. For low-literate consumers, this anxious state develops over time resulting from years of negative outcomes, and is often attributed to one's cognitive constraints, subsequently affecting self-esteem. A drive to maintain self-esteem serves as a reference point from which broad goals are drawn and subsequent behaviors are molded. We observed many behaviors that suggest self-esteem maintenance, rather than the pursuit of an optimal outcome, is the driving force in low-literate retail decisions. We find evidence that low-literate consumers engage in management of anxiety and shame, which result in the avoidance of better economic choices in favor of maintaining self-esteem by avoiding troublesome situations. Overall, our data parallel the Adkins and Ozanne (2005a) and Viswanathan et al. (2005) findings that self-esteem maintenance is central to low-literate consumers. Adkins and Ozanne found that low-literate consumers who are able to manage the stigma of low literacy are more successful in the retail environment. Broadly, our informants use various coping mechanisms to alleviate threats to their self-esteem. However, we find that success hinges on the ability to leverage other abilities when attempting to mitigate deficiencies and that individuals with relatively higher literacy levels are more likely to be able to do so.

### ***Response: Avoidance behaviors***

Donovan et al. (1994) used a modified version of the Mehrabian and Russell model to describe approach/avoidance behavior in the retail context. This model describes four types of behavior: willingness to stay, willingness to explore, willingness to communicate with others, and whether the environment enhances/ hinders performance. They found two significant dimensions of emotional response, pleasure/displeasure and arousal/nonarousal, with interactions between the two dimensions driving approach/avoidance behavior. Relevant to our work, they argue that in unpleasant environments greater levels of arousal lead to increased avoidance behaviors and vice versa. They suggest that arousal can be decreased by being selective in what information is



attended to (Donovan and Rossiter 1982). Many of our informants see the retail environment as unpleasant, which combines with an overwhelming amount of information to result in avoidance behavior. Over time this results in chronic avoidance.

Coping strategies related to the simplification of problems through a decrease in the amount of information considered represent an attempt to reduce arousal and subsequently alleviate chronic avoidance behaviors. These strategies combine with coping strategies related to seeking safe environments to address cognitive and affective issues encountered in the retail environment. This is achieved via self-esteem maintenance and risk avoidance which have been found to buffer anxiety (Greenberg, et al. 1993; Maner and Schmidt 2006). One noteworthy coping mechanism that we encounter in our research is the complete avoidance of specific shopping situations or decisions. At some level, this speaks to the value of maintaining self-esteem by not risking public humiliation, similar to the findings of Baron and Spranca (1997) who suggested that core values, such as self-esteem, are immune to economic tradeoffs.

## **General Discussion**

Although our research fits under the umbrella of work on vulnerable consumers, it diverges by examining literacy rather than commonly used demographic factors. We focus on the individual interactions of low-literate consumers in the retail context. Specifically, our data illustrate how low-literate consumers differ from the literate consumers who have been traditionally studied to develop and test theories in consumer behavior and marketing. Additionally, we illustrate differences between functional literacy at the 0-4 level and the 5-12 level. Overall, we provide a theoretical explanation for these differences in consumer behavior, building on prior research on low-literate consumer behavior which has described the cognitive predilections, decision-making, and coping of low-literate consumers in general. Prior decision making research parallels our findings. Hastie (2001) notes that many common decision making processes are not consequentialist, particularly processes that rely on social roles and self-identity (e.g., Baron 1994; March and Shapira 1992) and are characterized by the protection of personal values (e.g., Baron and Spranca 1997). For our informants, self-esteem maintenance may be an immovable core value and is immune to any trade-offs, including economic ones.

Our framework builds on prior research on low-literate consumers by linking consumer challenges and resulting coping mechanisms to the environmental and product levels (Figure 1). Our data suggest a number of ways in which the traditional decision-making process based largely on research on literate consumers can be short circuited in low-literate consumers, particularly with the strong reliance on perceptual tasks and relatively simple processing of information. Though there were many unfortunate economic results, our data also showed many successful encounters and even instances of individual empowerment, akin to the findings of Adkins and Ozanne (2005a). For example, Annie was able to extend her social networks to include a store employee with whom she is now “best friends,” which has in turn provided her with a shopping environment that is safer to her self-esteem. The visualization techniques described by Wilson help him keep track of money spent, which gives him confidence in the retail setting. However, some coping mechanisms appeared to gain emotional utility while sacrificing economic utility. Understanding the causes of the challenges and subsequent coping responses of low-literate consumers in the retail setting has implications for theory and practice.

Many of the findings we present can be extended to other groups of consumers, including immigrants and other disadvantaged consumers. Though we do not explicitly examine these groups, there are some similar outcomes, particularly with regard to the pictorial thinking that is

exhibited in the retail setting. However, low-literate consumers are distinct from groups such as immigrants who may be highly educated in their native language and fluent in abstract thinking (Viswanathan et al. [2005] note fundamental differences between low-literate and ESL consumers). These groups may process information quite differently and the stigma attached to members of different groups may manifest differently..

The limitations of low-literate consumers refute common assumptions about ability that underlie marketing mix decisions by retailers. Empowerment of low-literate consumers requires a fundamental and challenging shift in thinking that goes beyond implicit assumptions about one's own ability as a literate decision-maker. The broad implication of this research for retailers is careful consideration and research of the low-literate segment to enhance the marketing mix. Such consideration is difficult in light of the nature of difficulties faced by functionally low-literate consumers, often taken for granted by literate consumers. Moreover, from a methodological perspective, research on this group is not easy to conduct. However, herein lies an important opportunity to practice the essence of the marketing philosophy and especially the societal marketing concept (Kotler 1984). Such efforts are likely to empower low-literate customers while also resulting in enduring customer loyalty, thus leading to competitive advantage while benefiting other consumer groups.

Our research has a number of implications for retail and brand managers that can both empower low-literate consumers and lead to profitable outcomes through customer loyalty. For example, it may be much easier for functionally low-literate consumers to navigate new or refurbished stores if illustrations of the product categories in each aisle are placed on store signs alongside category names. Similarly, by using graphical representations of sizes, ingredients, and instructions, in-store displays can communicate product information more effectively to the low-literate consumer. The retaining of some elements (e.g., colors, font types) that can be recognized by low-literate consumers when developing new brand packaging and store signage is an important consideration.

Clearly posted and legible unit prices that use a common format across retailers, brands, and product categories would give low-literate consumers access to concrete information that is more informative than price or size, and would help them to take better advantage of price deals. The final price could be presented in addition to the original price and the discount. The use of dollars and cents off, rather than fraction or percentage off can serve to further concretize the final price. When fraction off and percentage off displays are inevitable, the use of simple graphical representations, such as pie charts, would provide additional information without being intrusive or publicly revealing. In addition, retail outlets could consider experimenting with simple computational aids for their customers that lead to better purchases while avoiding embarrassment. Going beyond calculators, they could start developing and testing devices attached to shopping carts that scan product labels, provide unit price comparisons, and possibly keep a running total for the products placed in the cart. Similarly, devices that assist customers in locating products would also be helpful.

In light of dependence on others as a coping strategy, comfortable shopping environments with friendly service by personnel who are trained and sensitized to the difficulties faced by functionally low-literate consumers can go a long way in building relationships. Clear disclosure of policies and training of employees to minimize the cheating of customers are important. The highly damaging perceptions of being cheated in payment or refund suggest the need to train and oversee service personnel to facilitate proper treatment and minimize instances of cheating, and to treat customers equitably and explain company policies clearly. Low-literate consumers often avoid product returns due to apprehensions about being blamed or questioned.

Concurrently, episodes that generate negative emotions may result in incorrect self-attributions of blame and may produce lingering negative emotions that result in future avoidance of the associated product or store.

A number of avenues of future research are suggested by this work. Further understanding of what drives the perception of store environment for low-literate consumers is important in determining its effects on shopping tasks. This understanding needs to be developed at both cognitive and affective levels. An example of the latter is the need to examine the social psychological issues relating to employee interactions and affective reactions as a function of literacy. Also relevant here is an understanding of the interplay between basic literacy and basic numeracy, as well as functional skills in the retail store. In fact, the need to isolate numeracy from literacy represents a limitation of this research, although the difficulties in gaining access to informants combined with the need to study different combinations of numeracy and literacy makes this limitation a very difficult one to overcome. In conclusion, the study of low-literate consumer behavior in a retail setting offers important implications for research for consumers.

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