Product Differentiation, Celebrity Endorsements and

the Consumer's Perception of Quality

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To My Wife and Children

Katherine, Adam, Kaitlyn and Todd

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Table of Contents

List of Tables

List of Figures

Abstract
Product Differentiation, Celebrity Endorsement
and the Consumer's Perception of Quality
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In any market-driven Capitalistic economy it is the consumer that accounts for the vast

majority of the output. Economists and Marketing scholars have long studied what

motivates the consumer to demand, and eventually purchase, specific products.

Depending on the type of product, the rational consumer will seek information about the

quality and performance prior to purchase. Much of this information comes from

advertising.

Often times, seemingly similar products sell for different prices meaning that the utility

maximizing consumer has differentiated the products and will pay different prices based

on the perception of how well his needs will be satisfied by the product. Marketing

scholars have researched this product and price differentiation phenomenon and have

noted that symbolic differences exist which come mostly from information gathered

through advertising. This information may have an affect on consumer tastes.

Economists, on the other hand, have viewed advertising as primarily providing

information for consumers, but have generally looked unfavorably on noninformative

ads, noting that they have little value and are not able to change consumer tastes and

preferences (Becker and Murphy 1993).

It is the objective of this thesis to show how the use of a properly matched product endorser in advertisements can have a significant impact on consumer tastes and preferences, by influencing the consumer's perception of product performance and quality. This is true for both search goods and credence goods. I will also attempt to bridge the gap that currently exists between the work of Marketing Scholars and Economists on the affect of advertising on consumers' tastes and preferences.

CHAPTER 1: INTRODUCTION

In any market driven capitalistic economy it is the consumption expenditure by consumers/households that accounts for the vast majority of total output. In the U.S. economy, consumption expenditure is about 68% of GDP according to the *Economic Report of the President.* In order for consumers to purchase this large quantity of goods and services the products must be transferred from the producer to the ultimate consumer. In capitalistic economies it is the marketing function that is responsible for this transfer.

Perrault and McCarthy (2000) define marketing as the process of planning and executing a strategy to create exchanges that satisfy perceived needs, wants and objectives of the individuals. They further explain that a marketing strategy consists of 1) clearly defining who are the potential purchasers of each product, and 2) developing a marketing mix to reach these consumers. The target market is the group of consumers most likely to purchase the product. Often this target market is segmented into subgroups with similar needs.

For instance, an automobile manufacturer identifies anyone who is interested in purchasing a car, as the target market. But if the producer marketed a subcompact car, the target market would be segmented into groups of consumers who are probably unmarried, price conscious and may have other traits which would identify them as buyers of compact cars.

In order to develop a marketing mix, four factors must be considered, namely: Product, price, place and promotion. The product must be made with the characteristics needed to satisfy the needs of the target market. The price must be set to meet the objectives of the firm and also to be in the range of the targeted consumer's affordability.

The product must be distributed in such a way so that the final place is accessible to the consumer. And, lastly, the consumer must be aware of the product and its attributes. This last function is accomplished through promotion of the marketing strategy.

Promotion, according to Perrault and McCarthy (2000), is any communication used to inform, persuade and/or remind people about an organization's or individual's goods and services. Promotion includes advertising, publicity/public relations, personal selling and sales promotion. Advertising, generally the largest component of promotion, is defined by Perrault and McCarthy as the structured and composed non-personal communication of information, usually paid for and commonly persuasive in nature, about the products through various media by identifying sponsors.

Various media in which advertisements are placed include television, newspapers, direct mail, radio, yellow pages, magazines, the Internet, business publications, outdoor advertisements and other miscellaneous sources. According to *Marketing News* (2000), the total annual amount of advertising expenditure in the U.S. for year 2000 was $269 billion. The distribution of this total among various media is listed in Table 1.1. It is indicated that television, newspapers and direct mail are the three most widely used media. The advertising expenditure for these three was over 64 percent.

At the industry level, the most visible advertisements on television seem to be for automobiles and fast food, leading to an impression that these products must cost a large portion of their revenues on advertising. However, an examination of the actual total advertising expenditure as a percent of sales, for which television is only one of more than eight media, draws a different picture. According to Advertising Age (2000), leather products, dolls and stuffed toys and watches and clocks are the top three industries which

spent the highest percentage of sales dollars on advertising with 17.5, 15.2 and 15.2

percents respectively. In other selected industries advertising expenditures as a percent

of sales are listed in Table 1.2. Automobile dealers spent less than 1.5 percent of their

sales on advertising, while the food products industry spent 1.1 percent.

1.1. Motivation of study

The amount of money spent on advertising worldwide is staggering. According

to *Business Week* (January 14, 2002) total worldwide advertising expenditure was $456

Billion in 2001, with $257 Billion being spent in the United States (down about 4% form

2000). Many multinational giants spent billions on advertising. Table 1.3 shows total

world-wide annual expenditure for the ten largest companies ranked by dollar amount.

Proctor and Gamble Co., Unilever and General Motors were the top three spenders with

total advertising expenditure of $4.7, $3.4 and $3.2 billion respectively in 1998. Even

Volkwagen which ranked at the bottom of the list spent more than $1.3 billion on

advertising in 1998. It is also informative to note how much a single company spent on

advertising. For instance, Table 1.4 shows the annual domestic advertising expenditure

for the last ten years for Proctor and Gamble Co. who spends more money on advertising

than any other U.S. Company. At current dollars, Proctor and Gamble Co.'s annual

advertising expenditure was $2.5 billion in 1991 and steadily increased to more than $3.6

billion in 2000, except two years in 1996 and 1999 when the expenditure declined

slightly from the previous year's level. Over the period, advertising expenditure at

current dollars increased by 4% annually. This much is spent on advertising primarily to

1) inform consumers about the goods and services that they offer to the market, 2) to

persuade consumers to purchase their products and, 3) to remind consumers about the product's availability.

The information found in ads can be divided into two categories. Direct information is factual and usually includes such things as features, price, locations where to make the product purchase, etc. Indirect information, on the other hand, is obtained by the consumer who makes inferences based on his or her perception. The amount and value of the indirect information to the consumer, as well as the ad's ability to persuade, is often based on who is presenting the information. It is for that reason that advertisers will use properly matched and positively viewed endorsers in the ads.

Celebrity endorsement is expensive. Yet the companies are willing to pay for the powerful endorsement embedded in the celebrities whose name, face and/or voice recognition can draw considerable attention of millions of consumers. Agrawal and Kamakura (1995) estimate that approximately 20% of all advertisements use some form of celebrity endorsement to inform and persuade. In 2001, IEG Endorsement Insider, an advertising trade publication, estimated that celebrities directly received more than $800 million in 2001. Celebrities come and go, and their fame may fluctuate as well. However, there are always some celebrities available from entertainment and sports. Some past and present successful celebrity endorsers used over the years include:

Bill Cosby for Jell-O and Kodak; Ray Charles for Diet Pepsi; Candice Bergen for Sprint; Kathie Lee Gifford for Carnival Cruise Lines and Ultra Slimfast; Sara Fergeson for Weight Watchers; Michael Jordan for Nike, McDonald's, Hanes, Wheaties and Gatorade; Allen Iverson for Reebok; Kobe Bryant for Adidas; Tommy Lasorda for Ultra Slimfast; Nolan Ryan for Advil; Arnold Palmer for Jiffy Lube, Hertz and Sears.

1.2. Overview of relevant studies

Through the use of these endorsers, the firm's intention is to affect consumer behavior so that their product is purchased. But does advertising effect consumer behavior? And what impact do these endorsers have on the consumer? Researchers have attempted to answer these questions for several decades. For example, Chandy et. al (2001) point out that to date the research can be broadly classified into two streams: 1) experimental studies on the effect of ads on buying intentions, and 2) econometric studies on the effects of advertising intensity on purchase behavior.

In the marketing literature, experimental seminal studies have examined a variety of advertising elements including emotional cues (Holbrook and Batra 1987), types of arguments (Etgar and Goodwin 1982), humor (Sternthal and Craig 1973), endorser effectiveness (Friedman and Friedman 1979) and music (MacInnes and Park 1991). The dependent variables most often used include attitude toward the ad, attitude toward the brand, memory and purchase intent.

In contrast, econometric studies concentrate on the role that advertising intensity has on consumer behavior. Researchers measure advertising's effect on sales, market share, market price, consumer choice and quality signaling (for review, see Tellis 1998). Most of these studies have utilized precise modeling of the sales response or some other dependent variable. Most studies are field-based and often concentrate on the examination of very specific commodities such as laundry detergent, vegetable juice, automobiles or some other consumer packaged goods.

Although these two research streams have greatly contributed to the current understanding of advertising, each has focused on different variables and has operated largely in isolation of the other. The experimental studies of consumer behavior concentrate on the effects of an ad's signals on brand attitudes and buying intentions, but rarely examine how these signals affect individual behavior. Further, despite extensive econometric modeling of the advertising response, little is known about why and how ads effect consumer behavior and whether variations in the signals create a variation in the behavioral response. As a result, many researchers have called for an integration of these two research streams (Winer 1999; Cook and Kover 1997; Wells 1993; Stewart 1992).

It is the intention of this thesis to integrate the research of the marketing scholars and economists in order to study the effect on consumer behavior of the signals received from a properly matched celebrity endorser. It is believed that when an endorser is used in an ad, the indirect information inferred by the consumer becomes more credible and more relevant. The result is that the consumer has the perception of a higher quality for the advertised product. Since consumers prefer high quality over low quality, the endorsed product is more likely to be purchased. This addresses the questions of why and how consumer behavior is affected. Considering that more than one quarter of a trillion dollars was spent on advertising in the U.S. last year, the subject of how these dollars effected consumer behavior is well worth further study.

1.3. Study outline

There are a number of specific areas in both the economics and marketing literature that will be reviewed in Chapter 2. One important area in the economics literature concerns the economics of information which, according to Ekeund, Mixon and Roberts (1995), is a prominent and important development in modern micro-economic thought. Nelson (190,1974) provides the basis to begin this thesis. He classifies goods into two categories: search and experience goods. Search goods are those for which the quality can be determined prior to purchase. Examples include furniture, lumber, clothing, footwear, jewelry and bicycles. Experience goods are those for which the quality cannot be determined until the product is purchased and used. Examples include many services like plumbing, electrical contractors, travel services and cleaners. Darby and Karni (1973) add a third class of goods called credence goods which are those for which the quality may never be fully determined. Examples include many services like surgery, optometrists, marriage counseling and other medical services. This study will focus on experience goods because consumers must gather and process information and then develop a perception of the quality and performance of the product which is used to determine its utility prior to purchase. The use of an endorser will be manipulated to show significant differences between viewers of the ads.

Furthermore, the relevant literature discussing how changes in the perception of quality impact product differentiation, will be reviewed. This concept is known as variable quality. Wadman (2000) provides an excellent historical review of the literature.

On the marketing side of the literature, scholars have examined how consumers rely on various information cues or perceptions of product characteristics found in advertisements, when evaluating expected product performance. Additionally, marketing

scholars have researched the effects that a celebrity endorser has on consumers. These studies show how the consumer's attitude toward a particular brand and toward purchase intentions vary with the use of an endorser in the advertisements. They have also examined specific traits of the endorser, such as expertise, attractiveness and knowledge of the product, in an effort to determine which celebrities "match-up" with the selected product.

Chapter 3 will present the theoretical framework and hypotheses development. The theoretical framework consists of both the producer's and the consumer's perspectives. The firm/producer is motivated to use an endorser in the advertisment in order to affect the symbolic attributes[1] associated with the endorsed product. A more favorable perception of symbolic attributes is the basis for the firm to raise the price to include a higher mark-up for the product. A consumer perception model will be established to show how consumers form their perceptions based on the beliefs that have been formed as a result of the information search process. A hypothesis will be proposed to determine the attributes used to form the perception of quality for a specific experience good. Then further hypotheses will be used to determine how the properly matched celebrity endorser effects consumer perceptions of quality and product performance. Finally, the credibility and relevance of the indirect information perceived from the ad will be compared with the endorser manipulation. Chapter 4 will discuss the process used to gather the experimental data and illustrate the econometric techniques employed to estimate the quality equation and test the established hypotheses.

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[1] According to Belch and Belch (1993), symbolic attributes are those characteristics of the product that may not be real but are perceived by the consumer, i.e. an efficient light bulb.

After gathering the data from six different celebrity/ product variation treatments, analysis will be done to show the significant differences between treatments and to determine the endorser effect. These results will be presented in Chapter 5 and the relevant conclusions will be discussed in the final Chapter 6.

Finally, the newest trend in the advertising business should be noted. Traditionally, ads used a print medium, radio, television and billboards. In the last ten years, the Internet has been used to market products to the consumer. Still the goal of advertising is to provide information and to persuade the consumer by increasing the perception of product quality and performance. Exactly what form these ads should take on the internet is still in the testing stages. Banner and pop-up ads have been popular choices. Dennison (2002) concludes that these ads have failed to reach the goals sought by advertisers. As noted by Loftus (2002), new techniques such as "shoshkeles", which are ads with animation and sound that move across the web page rather than just pop up, seem to be gaining attention lately.

Interstitials, as noted by Walker (2001), are also a new form of Internet advertising where freestanding windows pop up with a television style commercial. SurroundSessions are another, yet to be fully tested concept of advertising on the Internet. Mohan (2001) notes that SurroundSessions allow an advertiser to display a series of messages to a single user during the same session. A typical session lasts 10 to 11 minutes and comprises 12 to 15 separate pages.

Whether the use of celebrity endorsement would be feasible on the Internet really depends on the consideration of its cost effectiveness. As it is widely reported in the public press, the use of advertisements on the web has not been effective in terms of

generating sales for the companies who have paid greatly for placing either banners or

pop-ups on the popular portals such as Yahoo, AOL, etc. Before it can be shown that

advertisements on the internet can stimulate more sales, it is doubtful that a company

would be willing to spend more to use celebrities for their sales promotion.

Table 1.1 Advertising expenditures by medium in the United States - 2000

<u>Media</u>	<u>Dollar amount (millions)</u>	<u>Percent of total</u>
Television	$64,291	23.9
Newspapers	57,028	21.2
Direct mail	51,379	19.1
Radio	21,251	7.9
Yellow Pages	15,602	5.8
Magazines	13,719	5.1
Internet	6,187	2.3
Business publications	5,380	2.0
Outdoor	2,152	0.8
Miscellaneous	<u>32,011</u>	<u>11.9 </u>
Total	$269,000	100.0

Source: *Marketing News,* July 3, 2000.

Table 1.2 Advertising percentages in selected U.S. industries -2000

Industry	Advertising As Percent of Sales
Leather products	17.5
Dolls and stuffed toys	15.2
Watches and clocks	15.2
Perfume and cosmetics	12.8
Soaps and detergent	12.5
General Hardware	12.0
Books	11.0
Food products	11.0
Household furniture	9.7
Department stores	4.3
Household Appliances	2.3
Motion picture theaters	2.0
Computer equipment	1.5
Automobile dealers	1.3

Source: *Advertising Age,* July 24, 2000

Table 1.3 1998 World-wide advertising expenditure - ten largest companies

Company	Amount (millions)
Proctor & Gamble Co.	$4,747.6
Unilever	3,428.5
General Motors	3,193.5
Ford Motor Co.	2,229.5
Philip Morris	1,980.3
Daimler Chrysler	1,922.2
Nestle SA	1,833.0
Toyota Motor Corp.	1,692.4
Coca-cola Co.	1,327.3
Volkswagen	1,325.8

Source: International Advertising Resource Center
www.bgsu.edu/departments/tcom/faculty/ha/intl#top10
March 24, 2002.

Table 1.4 Annual U.S. advertising expenditure for Proctor & Gamble Co.

Year	Amount (millions)	Annual Rate of Increase (%)
1991	$2,511	
1992	2,693	7.2
1993	2,973	10.4
1994	2,996	0.8
1995	3,284	9.6
1996	3,254	-0.9
1997	3,456	6.2
1998	3,704	7.2
1999	3,536	-4.5
2000	3,667	3.7

Source: International Advertising Resource Center
www.bgsu.edu/departments/tcom/faculty/ha/intl#top10
March 24, 2002.

CHAPTER 2: LITERATURE SEARCH

In order to examine the effect on consumer behavior of the use of a celebrity

endorser in advertisements, there are four areas of the literature that must be examined;

two areas in the economics literature and two others in the marketing literature. From the

economic perspective, I examined (1) the concept of variable quality and how that is used

to differentiate products, and (2) the research that has been done concerning the function

of advertising as providing information to consumers. From the marketing perspective,

two areas refer to: (1) the research concerning the effect that advertising has on

consumers behavior, and (2) the various effects that are generated by celebrity endorsers

in advertising.

2.1. Quality and variable quality

To define variable quality, a definition for quality is warranted. Quality, according

to Wadman (2000), can be defined as the characteristics, properties, and attributes of a

product that influence the consumer's perception of the degree or grade of excellence.

Following this definition, we further assume that the rational consumer will maximize

utility by choosing those products of the highest quality.

In general, consumers will determine differences in the degree of excellence in

the product's ability to satisfy a specific need. This difference will be noted as variations

in quality between competing brands. Thus the variation in the perception of the product

quality is used by the consumer to differentiate products. For instance, suppose a

consumer is searching for a household cleaning solution. He finds two that have similar

ingredients. After utilizing both the direct and indirect information he has gathered, he believes that one of the products will perform better than the other. Thus the perceived variations in quality between the brands are used by the consumer to differentiate the products.

The literature indicates that the concept of variable quality has long been recognized. Smith (1176), Ricardo (1817), Jevons (1871), Wicksell (1901, 1934), Chamberlain (1927), Houthakker (1951-1952), Theil (1951-1952) and Dorfman and Steiner (1954) all made references in their work to variations in the quality of products. More recently, variations in quality were related to the market price. Stone (1956), Adelman and Grillishes (1961) and Rosen (1974) all noted that differences existed in the price of physically similar products that appeared to be differentiated only by the perception of variations in quality by the consumer.

Most recently, Wadman (2000) concludes that consumers' perception of quality reflects consumers' expectations and consumption experience. Since the consumption experience is learned and derived from the consumption of a product or service, it will be uniquely interpreted by each consumer within the framework of his self-image and his expectation of quality. In general, the consumer's expectations of quality are based on certain reactions to stimuli which are received by consumers via various methods, most notably through information supplied by advertising.

Now that it is known that the perceived variation in quality between products is the basis for the consumer to determine product differentiation, we should introduce the different types of product differentiation. According to Choi, et al. (1997), products may be either vertically or horizontally differentiated. Vertical differentiation occurs when

there are physical differences between products with similar prices. Suppose, they note, that two computer systems are sold at the same price. If one has different features than the other (e.g. a faster processor or a larger hard drive) then the products are vertically differentiated. Horizontal differentiation occurs when the difference in two products is based solely on appearance or consumer preference, even though no other physical differences may be present. It is this concept of horizontal differentiation that will be explored in this study.

In sum, we may conclude from the examination of the literature regarding variable quality that perceived quality variations are used by the consumer to differentiate products. Consumer's perception of quality for experience goods depends upon the direct and indirect information received by that consumer primarily through advertising. The next step in the literature search is to examine how economist have studied the role of advertising in providing information to the consumer and how this advertising is used to signal quality variations which consumers use to differentiate the products.

2.2. Economics of information

In the past 30 years the economics of information has been a vital part of the development in modern microeconomics theory. The seminal literature includes, among others, work by Stigler (1961), Nelson (1970, 1974), Spence (1973), Barbie and Karni (1973) and Laband (1986).

Nelson (1970,1974) originally put forth the notion that advertising can be used to signal product quality and supported this argument with empirical evidence. His argument is based on the distinction between search goods and experienced goods. He

found that for experience goods consumers will be more inclined to gather information about the product in order to decide about its quality. Much of the information comes either directly from advertisements or is inferred from these ads. The latter type of information is more pertinent to the current study because it is the type of information that the firm can provide to the consumer through the use of the endorser in the ad. The credibility and relevance of the indirect information is hypothesized here to be related to the endorser. A better matched endorser will make the indirect information more credible and relevant to the consumer.

Darby and Karni (1973) added credence goods as the third class. Ekelund et. al. (1994) pointed out that relatively little attention has been paid to the possible uniqueness of goods with credence qualities. For many credence goods such as brain surgery or marriage counseling, the full cost of realizing a "mistake" might be much higher than the nominal cost to consumer of the service. Therefore, the level of quality assurance required might be significantly higher for credence goods than for search or even experienced goods. This level can only be conveyed through a greater advertising effort to provide such information.

Eckland, et al. (1994) also pointed out that for goods with credence characteristics, the finding of optimal quality pre or post sale is a matter of employing costly resources (like time) and assuming risk. The high cost of search may in fact be attached to credence goods. The authors do not argue that some optimal quality may never be determined by consumers, although pure credence goods like religious services may be recognized as such. Under this analysis the firm's behavior regarding providing

information (i.e. advertising effort) for goods with credence characteristics is somewhat ambiguous.

Milgram and Roberts (1986) were the first to model Nelson's ideas within the context of a signaling game. In their game, nature makes the first move and randomly decides whether a monopolist would produce a high or low quality product. Although the monopolist knows about the true quality of its product, consumers do not. Milgram and Roberts found that in sequential equilibrium, the high quality and the low quality monopolist would pick different pricing and advertising intensities. This enables consumers to directly infer the true quality after viewing a firm's pricing and advertising intesities. Hence, in the Milgram and Roberts model, quality is signalled by both price and advertising expenditures.

Many economists have argued that price advertising can be used to signal higher product quality. Benham (1972) examined the effect that price advertising had in the market for eyeglasses. He noted that eyeglasses which were advertised at high prices were indeed perceived by the consumer to be of higher quality. Schmalensee (1978) developed a model in which a low quality producer could advertise to increase market share. He noted that a low quality producer may advertise as much or more than the high quality firms to "mimick" the high quality firm.

Becker and Murphy (1993) note: "Noninformative advertising is claimed to create wants and to distort tastes. Although we agree that many ads create wants without producing information, we do not agree that they change tastes". In Becker and Murphy's unique work they treat advertising as a good that is used to increase demand for a complementary good. They wrote: "Advertisements give favorable notice to other goods

such as Pepsi-Cola or corn flakes and raise demand for these goods. In consumer theory goods that favorably affect demand for other goods are usually treated as complements to those other goods, not as shifters of the utility function. There is no reason to claim that advertisements change tastes just because they affect demand for other goods."

Presumably, according to Becker and Murphy, the intended influence of any advertisement (especially those using endorsers) on the purchase or the increase in the purchases of the product should be treated as a change in demand rather than a change in consumer tastes or preferences. This is because a change in tastes and preferences tend to take time, while the impact of advertisements is of a short term nature.

Choi, et al. (1997) relate advertising to product differentiation. They note that for horizontally differentiated products the information found in ads enables a consumer to find a product that best matches his or her preferences. In some cases, they further note, "advertising can result iN spurious product differentiation by which consumers are persuaded to think, albeit mistakenly, that there are differences in competing products. Many over-the-counter drugs and household chemicals have essentially the same ingredients but consumers perceive them to be different largely because of advertising." (Choi, et al. 1997, pp 237-238).

While the economic literature to date does relate the role of advertising in providing information to consumers, there is very little in the literature that addresses how, if at all, consumer behavior is specifically influenced and how indirect information influences the consumer's perception of quality that is used to differentiate products.. The intention in this study is to fill the gap by relating quality perception and the resulting consumer buying behavior to the information acquired through viewing ads. The

theoretical foundation is based more on the marketing literature, which provides more insight into this area.

2.3 Marketing literature on information in ads

Lee and Lou (1995/1996) pointed out that, although consumer's perceptions of price, quality and value are considered as vital determinates of shopping behavior and product choice (Jacoby and Olsen 1985), research on these concepts and their linkages has provided few conclusive findings.

For instance, one class of models known as Cognitive Information Models (for example, Bharadwaj, Varadarjan and Fahy, 1993) assume that consumer preferences are not changed by advertising and that consumers decisions are only rational. This implies that advertising will not have an impact on buying intentions or consumer behavior. These models are consistent with the research of economists Nelson (1970,1974) and Becker and Murphy (1993).

On the other hand, there is marketing literature which has developed a group of models known as Persuasive Hierarchy Models that predict the opposite outcome. These models conclude that if advertising is to promote sales, it must inform and then persuade consumers. The underlying pattern of these models is that consumer behavior, in the form of buying intentions, is affected by advertisements.

It is generally recognized, however, that consumers rely on various information "cues" or characteristics of product in their evaluations of product quality (Dick and Jain 1994). In fact a considerable amount of research in consumer behavior has been devoted to examining what information cues consumers used most often when evaluating

products. The research results suggest that consumers most often rely on (1) "name brand" (Jacoby, Szybillo and Busato-Schach, 1997), (2) the price (Dods, et al. 1991), or (3) the country of origin (Chao, 1989a, 1989b) of the product being evaluated.

Zeithami (1988) provides a good definition of the concept of perceived quality. She notes that if quality can be defined broadly as a measure of superiority or excellence then perceived quality can be defined as the consumer's judgment about the product's overall excellence or superiority. This implies that consumers must make judgments based on the information that they have available. Much of this information very often comes from advertising. Since advertisements use celebrity endorsers quite frequently, the extend to which this information effects consumers judgment must be related to the credibility of the endorsers presented in the ad. Thus it is the objective of this thesis to study how endorsers effect the consumer's perception of quality.

2.4. Properly matched endorser effect

The concept of credibility has been and will continue to be of interest to marketing scholars. Endorser credibility has received considerable attention in the academic literature (Aaronnson, Turner and Smith, 1963; Bergin, 1962; Bochner and Insko, 1966; Goldberg and Hartwick, 1990; Stonethall, Phillips and Dholara, 1978). There are several characteristics affecting credibility of endorsers such as trustworthy, knowledgeable, believable, objectivity and expertise that were tested in the various studies (Aaronnson, et al., 1963; Bergin, 1962; Friedman and Friedman, 1979; Kamis 1990).

Here credibility refers to the extent to which the source is perceived as possessing expertise pertinent to the communication topic and can be trusted to give an objective opinion on the subject (Belch and Belch, 1994; Ohamian 1990) for expertise is derived from the knowledge of the subject. Trustworthiness refers to honesty and believability of the source (McMannas and Ward, 1980). These dimensions of source expertise and trustworthiness are important to conceptualizing credibility and have been shown to be influential in persuading consumers (Harmon and Coney, 1982; Moore, Haulknict and Tham, 1988; Sternthal, Phillips and Dholia, 1978; Wu and Schaffer, 1987) and also in influencing attitudes (Craig and McCamm, 1978; MacGinnies and Ward, 1980).

The endorser's credibility certainly can be enhanced by properly matching with the products being endorsed. Indeed there have been a number of studies that have examined whether and under what conditions celebrities make appropriate endorsers for products (Till and Busler, 1998, 2000; Agriwall and Kamakura, 1995; Atkin and Block, 1983; Freiden, 1983, 1984; Caymans, 1989; Caymans, et al., 1989; Ohanian, 1991; Tripp, et al., 1994).

2.5. Summary

The review of the literature in all relevant areas leads to the research question being addressed here. Consumers purchase products that satisfy needs. A rational consumer, ceteris paribus, will purchase goods that maximize satisfaction. The goods that maximize satisfaction are those that perform optimally and are perceived to be of the highest quality. For experience goods, where consumers can not determine quality prior to purchase, information must be obtained to form a perception of the product's quality.

One way to obtain information is through advertising which provides direct and indirect information. The credibility and relevance of the information depends on the endorser who is used in the advertisement.

Thus, this thesis will attempt to show how the use of a properly matched endorser, in an advertisement, will affect the consumer's perception of product quality and performance. In addition, I will attempt to show how a properly matched endorser will provide information that is more credible and more relevant to consumer.

CHAPTER 3: THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The main theme of this thesis is to show the impact that information in advertisements has on the consumer's perception of product quality and product performance and thus the consumer demand. Through the use of a properly matched celebrity endorser in advertisements, the consumer is able to get more indirect information. Furthermore this indirect information becomes more credible and relevant when presented by a favorably viewed endorser, as compared to the information gotten from an ad without an endorser. As a result of this information, the consumer is willing to pay more for the product advertised by the endorser. The theoretical framework of this study consists of two components: one is from the firm or producer's perspective and the other from the consumer's perspective.

The producer uses an endorser in advertisements to raise the mark-up portion of the price. The mark-up portion represents the difference between the price that the producer charges and the marginal cost. The producer would be able to charge a higher price if the consumer believes the indirect information received from the ad is more credible and more relevant when presented by a well-received and properly matched endorser. The result of this ad is that the consumer perceives the product to be different than other similar products. This differentiated product perception gives the firm some market power that allows a higher price to be obtained, as the demand increases and becomes more inelastic (Thomas, Shane and Weigelt 1998).

Whether the advertisement becomes effective in increasing the consumer's willingness to pay more depends upon the consumer's perception of the product's quality and performance. This perception is influenced by the indirect information presented in the ad. A Consumer Perception Model is developed to show how the advertisement plays a role in the perception process. This process links the consumer's lifestyle and the resulting self-image with the search for information about products that satisfy the needs of that lifestyle. It is assumed that consumers search for and prefer products of the highest quality beside considering the price of the product.

Three things should be noted regarding the study, namely the type of product, the information and the function of advertising. The products being studied are experience goods rather than search goods. For search goods, consumers tend to gather enough information to know the quality of the product prior to the purchase, whereas for experience goods the consumer can only know the exact quality of the product after the product is used. It is precisely for the experience goods that producers attempt to influence buyers' perception, thereby buyers' purchase, through advertisements.

Information contained in ads could be both direct and indirect. Direct information is factual including such features as the size, color, ingredients etc. Indirect information, on the other hand, is inferred from the ad by the consumer. To a consumer who is interested in buying an experience good, it is indirect information, rather than direct information, that becomes more relevant to the intent to purchase. This is so because the uncertainty of the quality of the product ties more closely to the indirect information than to the direct information.

For example, consider buying a can of soda versus a bicycle. Soda is a search good while a bicycle is an experience good. The relevant information that determines the purchase of a can of soda is of a direct type, whereas that of bicycles is indirect. A consumer has to use the bicycle for some time before the determination regarding the fit can be made. As such, the credibility and relevance of the indirect information is where the firm can manipulate in their favor by the use of a properly matched endorser.

Information conveyed by advertisements can be either informative or persuasive. Direct information tends to be informative and thus is conveyed to consumers in a rather straightforward manner, whereas indirect information can be manipulated to be more or less of a persuasive nature. For instance, General Motors advertises the top of the line Buick model, the Park Avenue, using two different types of ads. One ad is of an informative nature where the information provided simply states that the car has a large V8 engine, automatic transmission, power windows, power door locks, climate control and leather interior. The other type of ad uses the headline "You've earned it. Now enjoy it. Park Avenue." The copy of the ad uses the words "elegant and luxurious" conjuring up certain images of a lifestyle in order to persuade the potential buyers.

It is hypothesized that endorsers can play an influential role by providing indirect information that can be highly persuasive to the consumer. Through carefully designed questionnaires, this study will test the hypothesis as well.

3.1. Producer's perspective

Suppose the firm is considering the marketing strategy for an experience good, say light bulbs or cleaning solutions. The promotion portion of the marketing strategy could be carried out with or without the use of a properly matched endorser. The firm

would evaluate the endorser effect by comparing the price paid by the consumer without the use of an endorser to the price using an endorser. In general, the price of a product is based on the marginal cost of the last unit produced plus a mark-up for the product. The difference between the market price using ads with an endorser and the price using ads without an endorser is based then on the difference in the mark-up plus the marginal cost of using the endorser. Prices of the product with and without the use of an endorser can be expressed as follows:

$$P = MC + MK \tag{1}$$

$$P_e = MC + MC_e + MK_e \tag{2}$$

where P denotes the price of the product; MC, marginal cost; MK, mark-up; and subscript e, the use of an endorser.

The total cost functions can be defined as follows:

$$TC = C\,(Q)$$

$$TC_e = C\,(Q) + C_e\,(Q)$$

so that

$$?C\,/\,?Q = MC$$

$$?C_e\,/\,?Q = MC_e$$

where MC is increasing and MC_e is a constant.

In order for the firm to maximize profit MR is set equal to MC. Considering the firm who advertises without an endorser

$$MR = MC \tag{3}$$

After mathematical manipulation of marginal revenue in equation (3), this equation can be re-written as:

$$P + P/E_D = MC \tag{4}$$

where E_D is the elasticity of demand without the use of an endorser.

This equation can be expressed as:

$$P = MC + MK \tag{5}$$

where $MK = -P/E_D$. Equation (5) is identical to equation (1).

Similarly, if the firm uses an endorser in the advertisements, then

$$MR_e = MC$$

$$P_e + P_e/E_{De} = MC + MC_e$$

$$P = MC + MC_e + MK_e \tag{6}$$

where E_{De} is the elasticity of demand with the use of an endorser and $MK_e = -P/E_{De}$.
Now equation (6) is the same as equation (2).

By subtracting equation (1) from equation (2) the difference in the prices of the two options can be obtained as

$$P_e - P = MC_e + (MK_e - MK) \tag{7}$$

The difference in the price with the endorser and without, consists of two components, namely the marginal cost of using the endorser, MC_e and the difference between the mark-ups with and without an endorser in the ad.

Substituting the terms for the mark-ups yields

$$P_e - P = MC_e + (-Pe/E_{De} + P/E_D) \tag{8}$$

This means that the difference in the price between the endorsed and the unendorsed product is based on the difference in the elasticities of demand, given the marginal cost of the endorser. Thomas et al (1998) conclude that advertising which

signals quality makes the demand less elastic. Thus, given E_D for the unedorsed product, as E_{De} gets less elastic, the difference increases and P_e rises over P.

If the elasticities are the same then this difference equals

$$P_e - P = MC_e /(1+ 1/E_D) \qquad (9)$$

That is, the more elastic the demands are, the lower the price difference between the two products. This case excludes a product with inelastic demand where the use of an endorser would not be needed, since the inelastic demand means that the product must already be differentiated

This price differential becomes the source of a greater per unit profit that can be manipulated by the use of an endorser. Clearly, the more the producer is able to reduce elasticity through manipulation, the more profitable is the impact on price by the use of the endorser.

Presumably, the mark-up level used by the firm is based on the belief that, for experience goods, the firm can provide sufficient information (especially indirect) to the consumer with the intent to entice the consumer to view the product performance and quality favorably. As this information is provided through the use of advertisements with a properly matched endorser, the influence is expected to become more reinforced. Thus the firm is able to charge a higher price that reflects a higher MK_e and reap the benefit of this effective sales promotion.

The next logical question relates to how, specifically, the endorser affects MK_e. Presumably the management of the firm knows, from past experiences, something about the MK. While prior research (e.g. Till and Busler 1998, 2000) has shown that the

endorser will have positive impacts on consumer's buying intentions, the mechanism of how has yet to be determined. The latter is the focus of the current study.

The marketing literature suggests that the features that differentiate products can be classified into three categories: physical, service and symbolic differences. As an example, consider the purchase of a computer where the buyer is looking at the differences between two options. Physical differences would exist if the computers had different processors operating at different speeds, different amount of memory or different capacity of hard drives. Service differences would exist if the warranty periods varied or if one manufacturer offered at home service versus shipping the unit back to the manufacturer to have it serviced. Symbolic differences would exist if the consumer believed that one brand was of a higher quality than the other. Consumers may believe, for instance, that an IBM is a better quality computer than an E-machines brand even though the two may have all the components exactly the same.

Since both physical and service differences are reflected in the marginal cost of the product, the issue of symbolic differences of the product compared to the alternative products is what the use of an endorser in the ad attempts to address. This implies that the mark-up differential between the products with or without an endorser is a function of the symbolic differences and can be expressed as follows:

$$P/E_D = f(SA) \tag{10}$$

$$Pe/E_{De} = f(SA_e) \tag{11}$$

$$P_e - P = MC_e + f(SAe) - f(SA) \tag{12}$$

where f denotes the functional form; and SA, symbolic attributes.

In general, the symbolic attributes of any product are based on the consumer's perception about how that specific product will satisfy the needs for which it was purchased. Higher quality and better performing products will satisfy consumer needs to a greater extent and are obviously preferred since these products will give the consumer greater utility. Therefore the symbolic attributes are related to the consumer's perception of product quality and performance. This perception depends upon the credibility and the relevance of the information gathered.

Given consumer equilibrium conditions in the theory of consumer behavior:

$$MU = ?P \tag{13}$$

$$MU_e = ?P_e \tag{14}$$

then by substituting equations (13) and (14) into equation (8) the following is determined

$$P_e - P = MC_e + ?(-MU_e/E_{De} + MU/E_D) \tag{15}$$

so that if $MU_e > MU$ then $P_e > P$.

To explain this process, a consumer perception model is developed in the following section to show how consumers determine their perceptions about product quality and performance for experience goods. These perceptions form the consumer's perspective of the symbolic attributes. This allows the producer to set a higher mark-up price, if the producer believes that the endorser is effectively conveying the correct information to the consumer.

3.2. Consumer's perspective

Figure 1, the Consumer Perception Model, illustrates how consumer's perceptions about experience goods are developed. These perceptions are based on a number of

exogenous as well as endogenous factors. The perception begins with the self-image and lifestyle of a consumer who initiates an information search for a need-satisfying experience good. The credibility and relevance of the information determines the consumer's beliefs that eventually formulate the consumer's ultimate perception of the product.
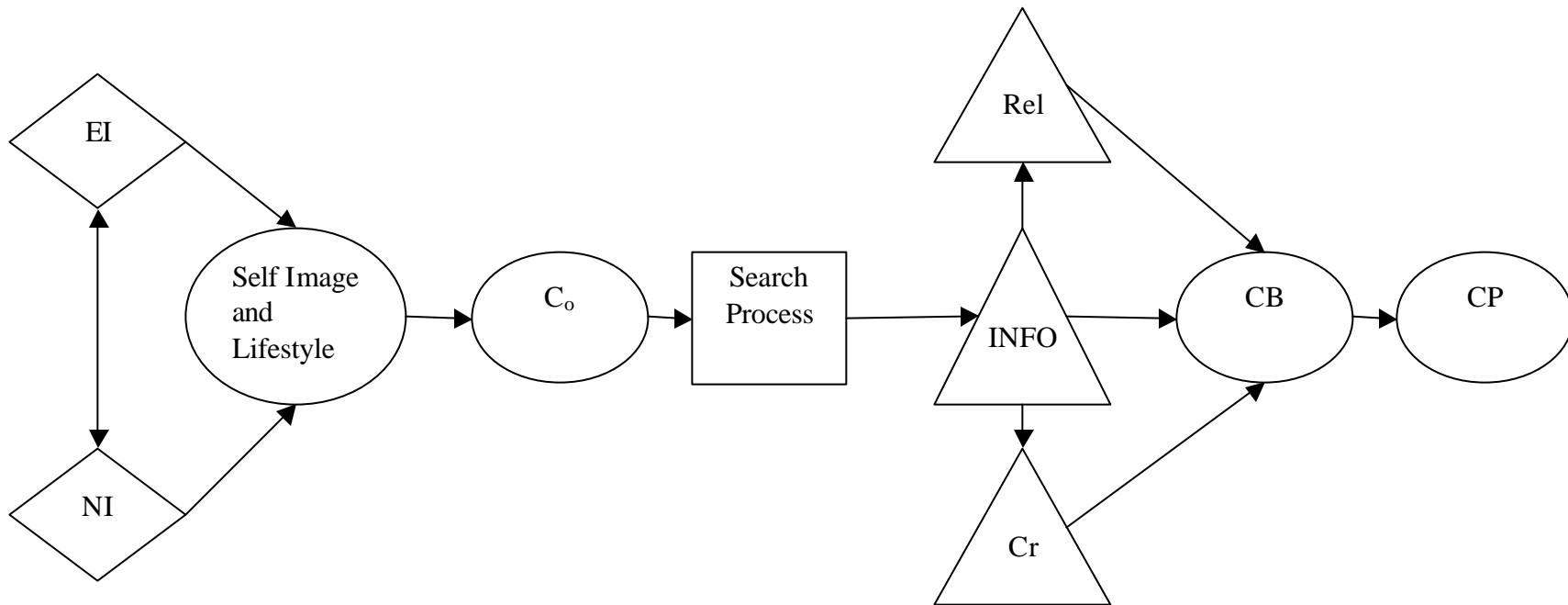
Consumer Perception Model

EI = Exogenous influences	Rel = Relevance
NI = Endogenous influences	Cr = Creditability
C_0 = Initial condition	CB = Consumer's beliefs
INFO = Information	CP = Consumer's perception

In the model (Figure 1) C_o is the consumer's initial condition. This condition is based on a specific self-image and lifestyle in which a consumer sees himself. Hawkins et al. (1998) concludes that there are a number of factors that enable the consumer to develop this self-image. These factors are divided into two groups: exogenous (labeled EI in Figure 1) and endogenous (labeled II in Figure 1) influences.

3.2.1. Exogenous influences (EI)

Exogenous influences include the impact of culture, any subcultures, demographics, social status, reference groups, family and prior activities from firm's efforts to market their products.

Zanpourt al. (1994) discuss how culture has an impact on consumer lifestyles by determining social norms. Based on this determination, the impact of advertised messages will vary as consumers attempt to fit the message to their lifestyle. For instance, tobacco companies have found great success in cultures where smoking is not viewed negatively. In fact in many developing countries the culture results in a view of cigarette smoking which links the habit with a desirable lifestyle.

Demographics also impact lifestyle. Factors such as age, gender, income level, marital status, education level and occupation impact consumer's view of themselves. Fisher (1987) notes that significantly different patterns in consumer behavior develop based on social class. Hollingshead (1958), the US Census Bureau and others have developed an Index of Social Position that classifies consumers based on a number of

demographic factors. Each index divides consumers into categories and notes that consumer buying behavior differs between these categories.

Schaninger and Danko (1995) empirically compared the differences in consumer buying patterns based on the age and marital status of the adult members of the household as well as the presence and age of children. They found significant differences and concluded that lifestyle is somewhat determined by where on the household life cycle the family may be.

The group to which an individual consumer would like to belong also influences lifestyle. The desired group is referred to as a reference group. Hawkins et al. (1998) defines a reference group as "a group whose presumed perspectives or values are being used by an individual as the basis for his or her current behavior." A consumer will have his lifestyle influenced by the reference group chosen.

3.2.2. Endogenous influences (NI)

Endogenous influences that help to determine self-image and lifestyle include perception, learning, memory, attitudes, personality and emotions. MacInnis and Jaworski (1989) note that information processing, especially that which comes from advertising, involves three steps: perception, transformation and storage. Perception occurs after an individual has been 1) exposed to a stimulus, 2) the stimulus gets his attention and 3) the information is interpreted. After the information is perceived it is then transformed into a useful condition and finally stored in memory for future use. Consumers, notes Hawkins et al., make inferences in which a value is assigned to an attribute that is not contained in the direct information in the ad. These inferences

(indirect information) can be based on a number of factors but they could be greatly influenced by the endorser in the ad.

As is generally known, learning is the process by which memory and behavior are changed as a result of information processing. A consumer's lifestyle will be affected by the learning that has occurred. There are a number of different theories in the psychology literature dealing with how the learning process actually occurs.

From a consumer behavior standpoint, learning and memory along with any stimulus provided in an ad will determine how a consumer views a product. This view is known to marketing scholars as product positioning.

Another factor influencing perception is personality. Individuals, over time, develop a specific personality as well as a group of emotional responses. As with learning, there are a number of theories to explain personality, which is defined as an individual's characteristic response tendencies across similar situations.

Catell et al. (1970) is representative of a group of theories that utilize the multi-trait approach. They believe that traits are acquired at an early stage of life through learning or are inherited and that these traits form the basis of an individual's personality. (There are also a number of single trait theories that stress one trait as being particularly relevant.)

Mooradian (1996) developed a single trait personality theory based on an individual's response of extraversion and/or neuroticism which appear to be preferable, theoretically grounded predictors of ad-evoked feelings. Bousch et al (1993) believed the single trait that influences personality is an individual's cynicism and desire to conform. Netemeyer et al (1995) theorized that vanity was the single trait.

Buttle (1989) developed a social learning personality theory that emphasizes the environment as the important determinant of behavior. Other theorists often use a combined approach where behavior is seen as being determined by individual traits as well as environmental influences. Plummer (1985) found that personality differences were due to environmental factors but were strongly influenced by specific internal traits.

Theories that explain the learning process have been developed over the years by a number of researchers. Conditioning, both classical and operant, theory involves frequently associating a stimulus with a specific response, that could possibly be reinforced. Stuart et al (1987) found that this conditioning process can be used to provide learning that strongly influences consumer attitudes.

Iconic Rote learning, on the other hand, occurs when two concepts become associated without conditioning, like associating a headache and aspirin. Vicarious learning or modeling occurs when behaviors are learned by watching others. For instance a child learns that men do not wear dresses without ever really thinking about it. And Reasoning is when an individual uses thinking to restructure and recombine existing information to form new associations and concepts.

Emotions are strong, relatively uncontrolled feelings that effect behavior. There are many different types of emotions that people feel: grief, joy, anger, jealousy, fear, love, hate, etc. The degree to which emotions are felt are also indicative of the self-image.

An attitude is the way an individual thinks, feels and acts toward some aspect of his environment. Attitudes are based on factors that appear to be both learned and instinctive. Katz (1960) developed a class of models known as the multi-attribute attitude

models which conclude that a consumer's attitude about a product is a weighted average

of he consumer's belief of a brand's performance

$$A_b = \sum_{i=1}^{n} w_i\, X_{ib}$$

Where: A_b = Consumer's attitude toward a brand
w_i = Weight a consumer attaches to attribute I
X_{ib} = Consumer's belief about brand b's performance on attribute i

Considering these exogenous and endogenous factors in their entirety, as well as

the resulting self-image and lifestyle, specific needs will arise. Thus we have the

consumer in initial condition C_o.

3.2.3. Consumer at initial condition (C_o)

Consider a consumer who finds that he has a specific need. At C_o his initial

condition is that the need must be satisfied. Assuming the consumer is seeking a good

for the first time, a search process will result, where the rational consumer will prefer

high quality over low quality. Producers will then charge and consumers will be willing

to pay, higher prices for goods perceived to be of higher quality.

Information is gathered in a number of ways in the search process. The literature

indicates many sources may be used. One major source is by gaining information from

producer's advertisements. Some of the information is direct and factual. Other

information is indirect or inferred. This indirect information relates to the perception

about the quality and performance of the product. The consumer's use of the indirect

information is based on the two features of this study, namely credibility (Cr) and

relevance (Rel).

The credibility depends upon who is communicating that information and how likely that information provider is speaking as a knowledgeable expert (Till and Busler, 2000). A properly matched endorser is one who the consumers, *apriori*, perceive to be a knowledgeable expert about at least one of the significant attributes of the product, so that the consumer believes the indirect information is accurate and credible. Then the consumer must decide how relevant the information is to the decision making process. Apparently any information that is of little relevance will be disregarded by the consumer. It should be noted that credibility and relevance do not always go together. Any credible information could be either relevant or irrelevant to the consumer.

The next question concerns how the consumer forms the beliefs and finally perceptions.

3.2.4 Consumer belief (CB) and consumer perception (CP)

A belief may be defined as the conviction that certain things are true. In this context, for a utility maximizing consumer, it is the conviction that the product will perform at least as expected in satisfying the intended need.

It is hypothesized here that a properly matched endorser will provide more credible and relevant information to the consumer prior to the purchase of experience goods. The information will be used by the consumer to form the perception of the overall quality and performance of the product. This perception is the basis for the symbolic attributes which consumers use to differentiate products. Based on this, consumers would be willing to pay higher prices for whatever is perceived as a better and differentiated product.

It will be my intent to show how these endorsers can increase consumer perceptions of product quality and performance thereby increasing the consumer's willing to pay (and the firm's desire to charge) a higher price. Thomas, Shane and Weigelt (1998) hypothesized that the higher price is a result of the information in the advertisement that both increases the demand for the product and makes that demand more inelastic. They did not, however, reach any conclusions regarding why this change in the demand relationship exists.

In markets for experience goods, where consumers are uncertain about product quality prior to the purchase, there is much evidence in the literature to indicate that firms are able to signal quality to consumers through advertising and higher prices. Nelson (1970) argues that firms have much incentive to advertise heavily to signal quality. Milgrom and Roberts (1986) conclude that consumers rationally associate high advertising expenditures with product quality. Bagwell and Riordan (1991) developed a model for durable goods in which firms signal product quality by setting the price higher than the full information price. The full information price represents what a consumer would be willing to pay if he had full and complete information about the product. Bagwell and Riordan also note that once the product has been purchased and used by the consumer, the price eventually falls to the full information price. Thomas et. al (1998) examined the automobile market and reached a similar conclusion that that when consumers are uncertain of product quality prior to purchase, manufacturers should initially price above the full information price and maintain above-average advertising expenditures. Applying those results to this model it can be seen that the use of the high cost endorser would be favorable initially but not necessarily during the entire product

life cycle. (Thus in the long run, after the introductory stage of the product, both the cost and the price would fall).

Studies in the marketing literature similarly find a positive price-quality, rank-order correlation among a variety of experience goods. This conclusion was reached by Tellis and Wernfelt (1987) using data from *Consumer Reports.* Similarly, Miller and Plott (1984) used experimental data to show that consumers infer high quality from high prices.

Therefore, based on the search process and the resulting information gathered, the consumer forms certain beliefs (CB) about the product regarding its quality and performance. This leads to the formation of a certain perception (CP) about how the product will perform relative to other choices.

Based on the consumer perception model, the next section introduces several hypotheses that will be tested in this study.

3.3. Hypothesis development

Consider two new products that are of unknown quality to consumers: light bulbs and cleaning solution. Since these are experience goods, consumers cannot perfectly determine quality upon inspection. However there are attributes of the product has which consumers will seek to use in order to judge overall quality. This leads to the first hypothesis, labeled H(1):

H(1): Perceived quality is highly correlated to the consumer's evaluation of three specific product attributes.

Through pre-testing, it is determined that three attributes can be identified as important to the consumer when purchasing light bulbs and cleaning solutions. Three attributes are chosen because for each product consumers tend to choose one significant attribute combined with one or two more attributes in order to determine quality. Thus, three attributes can be used to explain most of the variation in perceived product quality.

Since the consumer's perception of quality prior to using the product depends upon the credibility and relevance of the indirect information in the advertisements, this leads to the next hypothesis, H(2).

H(2): Endorsers are used to increase the credibility and relevance of indirect information.

One function of advertising is to provide information to the consumers. This information can be direct in nature or indirect information that consumers infer from the ad. These inferences should depend upon how the indirect information is given and who is used in the ad. This hypothesis will be tested by asking the respondent to evaluate both the creditability and relevance of indirect information about product attributes. The results of the evaluation will then be compared in order to show differences based on the use of an endorser in the ad. Because consumers already have an overall impression about the endorser prior to seeing the ad, the credibility and relevance of positive indirect information should be increased due to the fact that information is delivered by the endorser who is associated with certain characteristics that may project relative quality onto the product. Consequently, consumers tend to rate the performance of the product's

attributes higher than if they viewed an ad without the endorser. This leads to the third hypothesis, H(3) as follows:

 H(3): A properly matched endorser is expected to signal higher perceived product quality.

Since advertising could be informative by providing direct information and persuasive by providing indirect information which serves to positively influence the consumer. Thomas et. al (1998) notes that persuasive advertising provides indirect information about the quality of unobservable product attributes, which are common with experience goods.

Once a quality index is determined, the relationship between this index and the price that the consumer is willing to pay can be tested. This leads to the next hypothesis, H(4).

H(4): There is a positive relationship between the price that a consumer is willing to pay and the consumer's perception of product quality.

Although this seems to be intuitively correct and most of the economics and marketing literature seem to suggest that this hypothesis is accepted, there does exist a body of literature, primarily from marketing, that refutes this hypothesis. Gerstner (1985), for instance, found that the relationship is at best very weak and may not exit.

In order for the indirect information about product quality and performance to be perceived as credible and relevant, a proper match must exist between the product and the endorser. Therefore the effect of an endorser (on quality and performance perception)

who doesn't match up with the attributes of the product should be significantly less than that of a properly matched endorser. This too can be tested in H(5).

H(5): An endorser whose attributes do not match the attributes of the product is expected to have a less effect on consumers' quality perception than a properly matched endorser.

Through pre-testing endorsers known for specific attributes can be determined. Thus an endorser can be identified according to who possesses the same attributes that consumers look for in order to judge the quality and performance of the two products to be tested. Also an endorser can be found who possesses attributes that do not match those relating to the product.

McCracken (1989) believes that some celebrity/product endorsements work better than others due to an inherent match or congruency between the celebrity and the endorser. McCraken (1989) cites examples of Bill Cosby for E.F.Hutton, George C. Scott for Renault and John Houseman for McDonald's as examples of well-liked celebrities who were mismatched with their endorsed product and thus failed to achieve positive results. This idea of product/endorser fit or congruence has been labeled the "match-up" hypothesis by Kamins (1990).

This hypothesis will be tested to determine the difference in the consumer's perception of quality based on the endorser used in the ad. It is believed that the matched endorser will improve the quality perception much more than the mismatched endorser.

CHAPTER 4: DATA GATHERING AND ESTIMATION TECHNIQUES

This chapter discusses the methodology that will be used to 1) collect and analyze the data, and 2) develop the econometric estimations and test the hypothesis. A specific experiment is designed to gather data for the study. The experimental data will then be used to develop the hypotheses. Using a nine point semantic scale, each subject will be asked to do the following: (1) to rate the attributes, (2) to rate the quality of the product based on the direct and indirect information found in the ad, (3) to rate their impression of the performance of each attribute of the product, (4) to rate respectively how credible and relevant they believe the information to be, and (5) to offer the price they are willing to pay for the product.

The analysis of the data will determine if differences exist between treatments, with each treatment representing a different endorser/product combination. The data will also be used to develop correlations between the impression of each attribute and the perception of quality. There are six different ads in six different questionnaires (Appendix 4C - 4H): each of the two products paired respectively with 1) a properly matched endorser,2) a mismatched endorser, and 3) no endorser. This represents six different treatments utilizing a 3x2 complete factorial experiment.

However, before data is collected, some pre-testing must be done in order to determine the appropriate products, celebrity endorsers and attributes. Two pre-tests are needed. One will be used to determine which celebrities to use in the experiment and what attributes are associated with each celebrity endorser. This information will be

utilized to match the celebrity's attributes to the product attributes in the ad. The second

pre-test is used to identify the products that exhibit the same attributes associated with the

celebrity endorser determined in the first pre-test.

4.1. Pre-tests

There will be two pre-tests done in order to determine (1) the celebrities to be

used and the attributes identified with each celebrity, and (2) the products to be used for

which the selected attributes are deemed important.

4.1.1. Pre-test 1 on celebrity and attribute determination

Two steps are involved in the first pre-test. First, two focus groups are to select

celebrities that are familiar to them. Secondly, questionnaires will be used to determine

the attributes that are associated with these celebrities and to rate the overall impression

of each celebrity. It is important that the celebrities are viewed favorably by the

respondents.

Specifically, in the first step of the pre-test, two focus groups of 15 subjects each

were used. A focus group is the most widely used form of qualitative questioning in

market research. This involves assembling a group of 10 to 15 people in an informal

setting. A set of open-ended questions are given to the focus group in order to get group

interaction in a brain-storming session. Perrault and McCarthy (2002) note that many

researchers use the focus group interview to provide preliminary information in order to

prepare for quantitative research. The subjects in the current focus groups were

undergraduate students at two large eastern universities. They were asked to identify

celebrities that were well known to them. From the two focus groups a list of seventeen

celebrity endorsers was compiled. Celebrities cited most often include:

Julia Roberts, Tom Hanks, Robin Williams, Tim Allen, Courtney Cox, Mario Andretti,

Cal Ripken, Arnold Schwartzenager, Tiger Woods, Pamela Andersen, Sarah Jessica

Parker, Lance Armstrong, Carl Lewis, Sean Connery, Jennifer Lopez, Mark McGuire,

Pierce Brosnan

A questionnaire, the content of which is presented in Appendix 4A, was then

prepared and distributed to 102 subjects at the same two large eastern universities that

were used to draw the focus groups. These subjects were asked to list four or five

attributes which are characteristics of the seventeen celebrities that were selected from

the original focus group. In addition, the celebrities must be likable and viewed

favorably and positively by the subjects. The subjects were asked to rate each celebrity

on a nine point semantic scale for categories such as strongly dislike versus strongly like,

unfavorable versus favorable and negative versus positive.   Eight celebrities with mean

ratings above 5 are presented in Table 1, each had an attribute that was associated with

them.

The attribute/celebrity pairs were selected based on a criterion that a broad base of

consumers can relate to them. This meant that the celebrity had to be viewed favorably

and that the celebrity had to be associated with an attribute that would easily match an

attribute for a product. According to this criterion, two celebrities were chosen despite

their lower ratings than others.. Arnold Schwartzenagger had a positive image and had

the attribute of strength/power as most often mentioned, while Cal Ripken who also had a

positive image was associated with the attribute of long lasting/enduring. While other celebrities may also have had a favorable image and even had an attribute strongly associated with them, those attributes are difficult to match with products. For instance, Robin Williams and Tim Allen are viewed very favorably by the group and each had the attribute of funny associated with them. But it would be difficult to find a product that is purchased primarily because it is funny.[2] Thus they were eliminated. Similarly Julia Roberts and Courtney Cox were viewed favorably and exhibited the attribute of attractiveness. While there are many products available to consumers that are made to enhance the attractiveness of the user, the product is not necessarily perceived to be attractive universally to consumers as a whole.[3] Therefore the fit was not consistent among broad-based consumers as a whole and they too were eliminated.

4.1.2. Pre-test 2 on product pool selection

Two steps are also involved in the second pre-test. First, two focus groups were to identify the products that have the designated attribute. Secondly, questionnaires were used to rate the importance of each attribute.

Specifically, in the first step, two focus groups of 15 subjects were again used. The groups were asked to identify products that had the attributes of strong/powerful (the attribute matched with Arnold Schwartzenager) or enduring/long lasting (the attribute matched with Cal Ripken) associated with them. A list of 12 experience goods was thus

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[2] It is not entirely impossible to purchase a product because it is funny. For example, one may buy a birthday card because the wording is humorous.
[3] For instance, a very low cut shirt is only attractive to women who do not mind exhibiting their curvy figures.

compiled from the focus groups. These products included: Crazy glue, car tires, acne

medication, light bulbs, computers, batteries, pain killers, cologne, insecticide, contact

lens, cleaning solution and motor oil

As a second step, a total of 60 subjects were selected and given another

questionnaire, the content of which is presented in Appendix 4B. They were asked to list

two or three attributes that are associated with each of the twelve products. They then

were asked to rate, on a nine point semantic scale, the importance of the attribute to the

product. There were four numbers to be determined by the subject; a rating for

unimportant versus extremely important for the four attributes: strong, powerful, long

lasting and enduring. In order to find subtle differences and to re-enforce the validity of

the response two attributes are used for each characteristic. The mean ratings associated

with each of four attributes for all products are presented in Table 2.

4.2. Final results of two pre-tests

The final selection of the products that match the two pairs of attributes

(strong/powerful and long lasting/enduring) is based on the criterion that the rating has to

be only one-sided in order to avoid any confounding. Specifically, the rating has to be in

favor of either strong/powerful or long lasting/enduring but not both. This is done to

ensure that the impact of the celebrity endorsement can be correctly measured in the test

of the hypotheses.

From the pre-tests the best match-ups were determined using the celebrities that

were viewed most favorably. Arnold Schwartzenagger known for the attributes of

strong/powerful matches up with cleaning solutions which the subjects rated the

importance of those attributes as 7.3 and 7.4 respectively. This is a good match because the same subjects rated the attributes of long lasting/enduring for cleaning solutions at a lower 6.3 and 6.4 respectively.

Cal Ripken known for having the attribute of enduring/long lasting matched up with light bulbs. The pre-test survey indicated that subjects rated the importance of these attributes for light bulbs to be 8.5 and 8.0 respectively. Again this is the correct match because the strong/powerful attribute pair for light bulbs received a rating of 6.9 and 7.1 respectively.

As noted, light bulbs were associated with the enduring/long lasting attribute but had a significantly lower rating for strong/powerful. This is probably because the strength of the bulb is determined by the wattage. If a more powerful bulb is desired then consumers will select light bulbs with a higher wattage. But the decision to purchase is based on the perception of longevity of the light bulbs. Cleaning solutions were similarly selected to fit the attribute of strength/powerful. Enduring/long lasting is much less relevant to the consumer because cleaning solutions are used primarily to remove the dirt and/or grease.

Additionally, for each product selected two more attributes were determined. It is believed that consumers purchase a product to satisfy a specific need so that a single attribute becomes most important. However it is not uncommon that consumers may consider two more attributes when making the final purchase decision.

During the second focus group interview people were asked to offer other additional attributes that may be associated with each product of concern. The most often mentioned attributes of cleaning solutions were environmentally friendly and not

harmful/gentle to items being cleaned. These two attributes seem matched with Arnold

Schwartzenagger, who is known to be concerned with environmental issues and a kind

person.

For light bulbs pleasant light and efficiency are the two most often mentioned.

Similarly these attributes seem to match up well with Cal Ripken who is know as a

pleasant person and plays his professional baseball position with such efficiency that he

has won awards for excellence.

4.3. Econometric estimation and hypotheses testing

This section discusses five hypotheses to be tested as follows:

(1) Hypothesis 1- the perceived quality of the product

To obtain a measure of product quality the following equation is estimated:

$$QP_i = \beta_0 + \beta_1 A_1 + \beta_2 A_2 + \beta_3 A_3 + E$$

where QP_i denotes the quality perception for product i, i=1,2; A_j the perception of
attribute j, j= 1,2,3; ß, the parameter; E, the error term.

For each of the selected experience goods, three attributes are identified. On a

nine point semantic scale respondents will be asked (i) to rate each product for each

attribute, and (ii) to rate their perception of the overall quality of the product. It is

hypothesized that all three attributes offer explanatory power to quality perception of the

product.

For the cleaning solution, the three attributes that are critical to the perception of

its quality are (i) the strength or power, (ii) environment friendliness, and (iii) gentleness

to the surface. Light bulbs are sold according to watts which determine how powerful

they are, so the three attributes critical to the perception of quality are (i) long lasting or enduring, (ii) the pleasantness of the light and (iii) efficiency.

(2) Hypothesis 2 - credibility and relevance of information

This hypothesis consists of two sets of testing: one tests the impact of the celebrity endorser on the credibility of the information, and the other, the impact on the relevance of the information. The corresponding null and alternative hypotheses are specified for both tests as follows respectively:

(i) H_0: $Cr_e = Cr_{we}$ (ii) Ho: $R_e = R_{we}$

H_a: $Cr_e > Cr_{we}$ H_a: $R_e > R_{we}$

where Cr denotes the credibility rating; R, the relevance rating; subscript e, with the endorser; subscript we, without the endorser.

On a nine point scale for each ad, the respondents will be asked (a) to evaluate credibility of the information in the ad, and (b) to rate the relevance of the information to the respondent. A one tail test on the mean will be used to determine if a significant difference exists for those who see the ad with an endorser versus those who view the unendorsed ad. A one way analysis of variance will be used to test the hypothesis.

(3) Hypothesis 3 - the endorser effect on the perception of product quality

The null and alternative hypotheses that are used to test the impact of the endorser on the perception of product quality are presented as follows:

H_o: $QP_e = QP_{we}$

H_a: $QP_e > QP_{we}$

Each respondent will be asked to rate the quality of the product based on the perception from viewing the ad. The mean rating, based on the nine point scale, will be compared for those who view the ad with the endorser versus those who view the unendorsed ad. It is expected that the mean quality perception will be significantly higher for those who view the endorser in the ad. An one way ANOVA will be used to test the hypothesis.

(4) Hypothesis 4 - the correlation between price and quality

This hypothesis is to test whether the perception of better quality will give rise to the consumer's willingness to pay a higher price. The estimation equation is specified as follows:

$$P = \beta_0 + \beta_1 QP + E$$

where P denotes the price: β, parameter; and E, the error term

It is expected that there is a strong positive correlation between the price and the perceived quality of the product. The respondents will be asked to select a price they are will to pay based on nine small price ranges. The mid-point of the range will be used as a measure for the price. The mid-point price will then be regressed on the perceived quality. The resulting regression coefficient is expected to be positive

(5) Hypothesis 5 - the effect of the mismatched endorser

This hypothesis compares the impact of a properly versus mismatched endorser. The relevant Null and alternative hypotheses are as follows:

$$H_o: QP_e = QP_{me}$$

$$H_a : QP_e > QP_{me}$$

where subscript e denotes a properly matched endorser; me, mismatched.

The data from the respondents who viewed the ads with the properly matched endorser will be compared to the data for those who viewed the ad with the mismatched endorser. Even though each endorser is viewed positively and each endorser has certain attributes associated with him, if the attributes of the endorser do not match the attributes of the product, the effect on perceived quality will be dampened. A one-way ANOVA will be used to test the hypothesis.

The case of the mismatched endorser is presented by switching the initial properly matched endorser to the wrong product. For instance, matching Arnold Schwartzenegger, who is associated with the attribute strong/powerful, with a product that consumers associate with the attribute long lasting/enduring, is clearly a mismatch. Similarly, matching the long lasting/enduring celebrity Cal Ripken with the cleaning solutions, is also a mismatch.

Table 4.1   Selected Celebrities with Specific Attributes and ratings Above 5

		Rating		
Endorser	Attribute	favorable	like	positive
Julia Roberts	Attractive, sincere	7.11	7.14	6.99
Tom Hanks	Talented	7.39	7.29	7.41
Robin Willims	Funny	7.13	7.25	7.14
Tim Allen	Funny	6.27	5.84	5.79
Counrtney Cox	Attractive	6.08	6.09	6.01
Mario Andretti	Speed, fast	6.75	6.76	6.61
Cal Ripken	Endurance, longevity	5.55	5.57	5.67
Arnold Schwartzeneger	Powerful, strong	6.46	6.39	6.37

Table 4.2   **Mean Importance Rating for Products**

Mean Rating

Product	Strong	Powerful	Long lasting	Enduring
Crazy glue	7.7	7.6	7.8	7.8
Tires	8.1	7.2	8.5	8.2
Acne medication	7.7	7.1	7.1	6.4
Light bulbs	6.9	7.1	8.5	8.0
Computers	6.9	8.4	7.9	7.7
Batteries	7.9	8.3	8.6	8.2
Pain killers	8.0	7.9	8.0	7.6
Cologne	5.1	4.9	7.0	6.4
Insecticide	6.8	7.1	6.9	6.2
Contact lenses	6.8	6.2	7.7	7.5
Cleaning solutions	7.4	7.3	6.4	6.3
Motor oil	6.8	6.9	7.3	7.1

CHAPTER 5: EMPIRICAL RESULTS

A total of 450 questionnaires were distributed to undergraduate students at two large East Coast Universities. This represented 75 questionnaires per treatment for each of the six treatments. Sixteen of the questionnaires were discarded due to incomplete answers. Each subject was given a packet of materials consisting of either four or six pages. Two thirds of the subjects received the six page packet which included questions about the endorser, while the other third received the same questions, excluding the pages where the endorser was referenced.

For those receiving the six page packet, the first page was an introduction informing the subjects that they were participating in a study sponsored by a major producer of consumer goods. Participants were told that the producer was relying heavily on Cal Ripken Jr./ Arnold Schwartzenegger as an endorser for the light bulbs/ cleaning solution and that their input was needed to help the producer form the best approach to market the product.

On the second page the subjects evaluated some attributes of the endorser that matched the attributes of the products. This was done on a nine point semantic scale with two responses required for each attribute. The responses were then averaged. Similarly the subjects were asked about their impression of the endorser, where three responses were averaged.

Next the subjects viewed an advertisement featuring one of the two endorsers and one of the two products. This represented four of the six treatments. Each advertisement

had a headline, brief copy highlighting the attributes of the product, a picture of the celebrity, a picture of the product and a quote from the celebrity indicating the he used the product. Then a number of questions were asked on subsequent pages, regarding the subject's evaluation of the product's performance and the perception of the attributes.

Subjects were then asked how much they were willing to pay for the product given an average price of $.60 for a 100 watt light bulb and $1.59 for a 16 oz container of cleaning solution. This average price was set at a neutral 5 rating on the nine-point scale, and the scale went up or down by $.05 for the light bulb and $.10 for the cleaning solution.

On the last two pages, each subject rated the attributes of the celebrity and the appropriateness of the use of the celebrity as an endorser for the product, as well as the credibility and relevance of the information found in the advertisement. For each question there were two or three nine point semantic responses which were averaged.

For the subjects receiving the four page questionnaire, two pages referring to the endorser were eliminated. There were two treatments, one for each of the products. The advertisements had the same copy and product pictures. However there was no endorser or any quotes from an endorser. The copy presenting the attributes of the products was exactly the same as in the endorsed ads.

5.1 Evaluation of the endorser

While the pre-tests indicated the two chosen endorsers were viewed favorably and had attributes that matched the products, subjects were, nonetheless asked to evaluate the endorsers for the given attributes and for their overall impression of the celebrity. The

results are summarized in Table 5.1 shown below and shown in detail in Appendix 5A. As can be seen, Cal Ripken (mean 7.1) was viewed more favorably than Arnold Swartzenegger (mean 6.0) and this difference was significant at p <.01. As a result, the expectation is that Cal Ripken will have a greater impact on consumer perception than Arnold Schwartzenegger will have. Also Cal Ripken matched-up much better with the three attributes of the light bulb (7.6, 7.4, 7.3 respectively) than Arnold Schwartzenegger did with the three attributes of the cleaning solution (7.8,6.0, 6.4 respectively).

Additionally the subjects were asked to rate the appropriateness of using Cal Ripken with light bulbs and Arnold Schwartzenegger with cleaning solutions. The result was 6.5 for Cal Ripken and 6.0 for Arnold Scwartzenegger. This difference was marginally significant with P= .08. This result is a stronger effect for the Ripken/light bulb pairing than for the Schwartzenegger/cleaning solution pairing.

Table 5.1 View of celebrity endorser

	Arnold Schwartzenegger		Cal Ripken	
	Mean	Standard Dev.	Mean	Standard dev.
Favorable Impression	6.0	1.5	7.1	1.7
Appropriate endorser	6.0	1.9	6.5	1.8
Attribute Match-up				
Billows Light bulb				
Enduring/long lasting	5.7	1.6	7.6	1.4
Pleasant/Kind	5.9	1.9	7.4	1.7
Efficient/Thorough	5.6	1.8	7.3	1.7
Moyer's Cleaning Solution				
Strong/Powerful	7.8	1.6	6.5	1.3
Kind/Gentle	6.0	1.5	6.1	1.3
Caring/Concerned	6.4	1.5	6.2	1.6

5.2 Hypothesis 1 – the perceived quality of the product

Hawkins et al (1998) describes information processing as a "series of activities by which stimuli are perceived, transformed into information and stored." They further explain that information processing can be analyzed by a model consisting of four steps: exposure, attention, interpretation and memory. The first three steps constitute perception.

The subjects of this study were exposed to an ad. The headline and copy of the ad had their attention, since it was viewed in a controlled environment. The next step for the subject was to interpret the information, assign a meaning to it and thereby form a perception. Interpretation and the formation of perception are based on a number of factors. For instance, prior knowledge of similar products will allow the advertised product to be classified in an existing category which will impact perception. Also expectations, emotions, cultural background, consumer inferences and misinterpretation of information all play a role in perception.

The result is that variations in the consumer perception of product quality will be based on a number of uncontrollable factors. This study attempted to measure the variation in quality perception due to the endorser effect on selected product attributes. The hypothesis was that much of the variations in the perception of product quality can be explained by variations in the perception of the attributes for which the product was purchased. The following equation was estimated:

$$QP_i = \beta_0 + \beta_1 A_1 + \beta_2 A_2 + \beta_3 A_3 + E$$

The percentage of the variation in quality perception due to variations in the ratings of the attributes in summarized below in Table 5.2. Table 5.2.1 shows the correlation coefficients The detail is found in Appendix 5B.

Table 5.2 Coefficients from Regression Results: Perceived quality as dependent variable

	Billows light bulbs				Moyers cleaning solution			
	Arnie	Cal	None	Total	Arnie	Cal	None	Total
Constant	.017	.081	.303	.234	1.14**	-.04	.805	.718**
Atrrib 1	.337*	.101	.352*	.270*	.396*	.614*	.545*	.507*
Attrib 2	.195**	.322*	.089	.151*	.281*	.010	.045	.145**
Attrib 3	.472*	.564*	.475*	.530*	.125	.395*	.244**	.219*
Observations	70	75	69	214	72	76	73	221
R^2	.85	.74	.69	.77	.53	.73	.47	.55
F Stat	123.4*	69.0*	51.0*	71.4*	24.9*	65.4*	20.4*	28.2*

Note: * for $P<.01$, ** for $P<.05$, *** for $P< .10$

Table 5.2.1 Correlation Coefficients - Quality perception and three attributes

	Billows light bulbs				Moyers cleaning solution			
	Arnie	Cal	None	Total	Arnie	Cal	None	Total
Atrrib 1	.83	.63	.75	.70	.57	.79	.63	.69
Attrib 2	.77	.78	.57	.79	.63	.61	.50	.55
Attrib 3	.87	.84	.80	.90	.51	.72	.54	.58

While consumer behavior theory tells us that quality perception is determined by a number of factors, the results here indicate that overall 67% of the variation in quality perception can be explained by variations in the perception of three specific attributes. When endorsers were used in the ads the percentage increases to 70% and without an endorser the percentage drops to 58%.

This hypothesis seems to be supported. In five of the six treatments, the majority of the variation in quality perception could be explained by variations in the perception of the performance of the chosen attributes. Since there was evidence of explanatory power, and since there were significant differences based on endorser manipulation, it must mean that the indirect information in the ad is more credible and more relevant to the consumer when the endorser is used in the ad. This leads to the testing of hypothesis 2.

5.3 Hypothesis 2 - credibility and relevance of information

To test this hypothesis, the subjects were asked to rate the credibility and relevance of the information received from the ad on a nine point scale. The means were calculated and then a single factor ANOVA was used to test for significant differences. In Table 5.3 the summary results are presented, with Appendix 5C showing the full ANOVA.

Table 5.3 Credibility and Relevance Measures

	Moyers Cleaning Solution		Billows Light Bulbs	
Variable	**With Arnold**	**With no endorser**	**With Cal**	**With no endorser**

| Credibility | 5.45 | 5.10 (.078) | 5.89 | 5.07 (<.01) |
| Relevance | 5.25 | 6.37 (<.01) | 6.36 | 5.61 (<.01) |

Note: P values in parentheses.

For the pairing of Cal Ripken and the light bulbs, the subjects viewed the information in the ad to be significantly more credible (5.89 v. 5.07, P<.01) and significantly more relevant (6.36 v. 5.61, P<.01). This information supports the hypothesis.

The results were different for the Arnold Scwartzenegger and the cleaning solution pairing. There was only a marginally significant difference in the credibility of the information with the endorser (5.45 v. 5.10, P=.078). The relevance of the information was actually less with the endorser than without. The explanation is probably that Arnold Scwartzenegger is not viewed as favorably as Cal Ripken so the impact on the credibility and relevance is not significantly positive. Since the Ripken/ light bulb results were so strong, it is believed that the endorser chosen for the cleaning solution is not really a good match-up.

Also, although the subjects from the pre-test were drawn from the same general population as the subjects used in the latter test, some variation regarding the impression and attitude toward Arnold Schwartzenegger appears to exist. Apparently, he was not as well known, nor viewed as favorably by the subjects in the later study. This difference will will impact the results of subsequent hypotheses.

5.4 Hypothesis 3 endorser effect on quality perception

It is hypothesized that the quality perception will increase significantly when the information in the ad is presented with the use of a properly matched celebrity endorser. Rated on a scale of one to nine, the mean Quality Perception of Billow's light bulb's ad without the use of an endorser was 6.13, while the mean with Cal Ripken in the ad was 6.8. This difference was significant with p =.011.

Similarly the quality perception for Moyer's cleaning solution was 6.09 without an endorser in the ad and 6.51 with Arnold Schwartzenegger. This difference was significant with P = .065. Details are found in Appendix 5D.

The data supports the hypothesis. The use of a properly matched endorser will significantly increase the consumer's perception of product quality. The results also indicate that the difference becomes more significant if the endorser is viewed more positively and is viewed as being more appropriate. Also, even though the information in the ad was not viewed as being more credible or relevant when Arnold Schwartzenegger was used in the Moyer's cleaning solution ad, the subjects still rated the quality perception higher with the endorser.

5.5 Hypothesis 4 - the correlation between price and quality

To test the hypothesis that there is a positive correlation between price and quality perception, the following equation was estimated:

$$P = \beta_0 + \beta_1 QP + E$$

The expectation was that the correlation would be positive, strong and significant. Table 5.4 below summarizes the results. Details can be found in Appendix 5E. The results indicate that there is a positive and relatively strong correlation between the

product's quality perception and the price that the consumer is willing to pay. The

correlation was stronger with the use of an endorser in the case of the Billows light bulbs

and the correlation was about the same for Moyers cleaning solution with and without the

endorser. This indicates that if a producer can provide sufficient indirect information in

the ads to convince the consumer that the product is of a higher quality, then the

consumer will be willing to pay a higher price for the product. In the Billows light bulb

case the willingness to pay a higher price with the endorser in the ad was significantly

greater than without the use of an endorser.

Table 5.4 Regression Results for Price/Quality correlation

| | Billows light bulbs | | | | Moyers cleaning solution | | | |
	Arnie	Cal	None	Total	Arnie	Cal	None	Total
Constant	1.40**	2.38**	2.37*	1.89	2.10	-.957	.105	-.114
Quality	.637*	.519*	.488*	.570*	.476**	.968*	.780*	.840 *
Correlation	.60	.40	.40	.49	.24	.66	.61	.59
R^2	.36	.16	.16	.24	.06	.43	.37	.35
F Stat	38.6*	14.4*	12.9*	68.7*	4.10**	55.8*	40.9*	119.6*

Note: * for P<.01, ** for P<.05, *** for P< .10

Because the results for the two products were different, the interpretation could be

that consumers are willing to pay more for a higher quality cleaning solution than for a

higher quality light bulb. So, while the relation is positive for both products, the strength

varies depending on the product. Perhaps the subjects viewed a higher quality cleaning

solution as doing a better job cleaning and is worth more to them since the results can be seen immediately. A better quality light bulb, on the other hand, provides the same light but for a different amount of time. Since the light bulb's qualities are more difficult to see upon initial use, the consumer is not willing to pay that much more for the product, thus yielding a weaker relationship.

5.6 Hypothesis 5 - the effect of the mismatched endorser

This hypothesis stated that a properly matched endorser will have a greater impact on the consumer's perception of quality than an endorser who does not match-up well with the product. To test this hypothesis, subjects were asked to rate their perception of quality for Moyers cleaning solution using the mismatched Cal Ripken as the endorser. Other subjects were asked to rate the their perception of quality for Billows light bulbs using the mismatched Arnold Schwartzenegger as endorser. The results are summarized in Table 5.5 below and detailed in Appendix 5F.

Table 5.5 - Quality perception rating with mismatched endorsers

Product	Endorser	Quality raitng
Billows light bulbs	Arnold Schwartzenegger	5.7
Billows light bulbs	Cal Ripken	6.8 (p <01)
Moyers cleaning solution	Arnold Schwartzenegger	6.5
Moyers cleaning solution	Cal Ripken	6.2 (p=.16)

For Billows, the difference between the quality perception rating between the two endorsers was very significant ($p<.01$). For Moyers, the difference was not significant ($p=.16$). This was probably due to Cal Ripken being rated as more favorable and positive than Arnold Schwartzenegger so that even when he was mismatched with the product, the difference became less significant.

If there is a good match between the endorser and the product, the hypothesis will be supported. By properly matching the attributes of the endorser with the attributes of the product, consumers will perceive the product quality to be higher than with a mismatched endorser.

CHAPTER 6: CONCLUSIONS AND FUTURE RESEARCH

Products are differentiated in the marketplace based on physical differences, service differences and/or symbolic differences. If two products are physically the same and sold in the same manner with the same service given, they may still be differentiated symbolically. These differences are based on the perception of the consumers.

6.1 Producer's perspective and conclusions concerning the hypotheses

Producers can influence consumer perceptions by manipulating indirect information, usually provided through advertising. While the indirect information may be presented in a number of ways, by using a positively viewed and well matched celebrity endorser in the ad, this research has shown that consumer perception of symbolic attributes can be positively and significantly influenced. This perception leads to consumers believing that products are differentiated based on quality and will perform better to satisfy the need for which it was purchased, thus making the demand less elastic. This creates a willingness, on the consumers part, to pay higher prices. Although celebrity endorsers are expensive, producers can charge significantly higher prices which will cover the marginal cost of the endorser as well as increase the mark-up, leading to greater profits.

Hypothesis 1, tested the relationship between three specific attributes and the consumer's perception of quality. The results revealed that up to 85% of the variation in the perception of quality can be explained by the consumer's rating of three specific attributes which pre-testing revealed were important to the consumer when purchasing

the products used in this study. Further this percentage was higher when celebrity

endorsers were used.

With this knowledge producers can utilize properly matched endorsers who give

indirect information that will influence the ratings of the attributes. This leads to higher

quality perceptions. The extent to which the quality perception increases is contingent

upon the credibility and relevance of the information.

Hypothesis 2 tested to see the effect the endorser has on the credibility and

relevance of the information. It was found that with a properly matched and positively

viewed endorser the indirect information in the ad is viewed by the consumer to be more

credible and more relevant to the consumer's perception.

Hypothesis 3 directly examined the role of the endorser on the quality perception.

It was found that the consumer's perception of quality significantly increases when a

properly matched and positively viewed endorser is used in the ad to present the indirect

information. This result is consistent with the previous hypotheses.

The relationship between the price a consumer is willing to pay and the

consumer's perception of quality was tested in Hypothesis 4. While the relationship in

each case was positive and significant the strength varied. The explanation of the

variation in the strength of the relationship is discussed in the next section.

The final hypothesis examined the effect of a mismatched endorser. The results

revealed that matching the attributes of the endorser with the attributes of the product will

result in higher quality perceptions. If the endorser's attributes do not match those of the

product there will be a significantly lower quality perception. The result may be

somewhat modified if the endorser is viewed very positively. This was the result with

Cal Ripken whose attributes do not match those of the cleaning solution. However since

he was viewed so positively by the subjects, the quality rating for the mismatched

product was not significantly lower than for the properly matched endorser/product.

6.2 Consumer's perspective

From the standpoint of the consumer there are a number of exogenous and

endogenous factors that contribute to the perception of quality and the consumer's

willingness to pay. The results, however, did indicate that consumers' formation of

quality perceptions can be significantly influenced by the indirect information presented

in the ads which utilize an endorser. This was because consumers generally viewed the

indirect information found in the advertisements to be more credible and more relevant to

their quality perception when this information was presented by a properly matched and

positively viewed endorser.

On the question of willingness to pay more for higher quality, the results were

positive and significant, meaning that consumers generally will pay more for higher

quality. The question is how much more? The answer is effected by many factors

beyond the influence of the endorser. These include factors such as culture, prior

knowledge and experiences, attitudes, motivation, social status, family influence, and

other marketing activities. As a result the strength of the relationship was lower than

anticipated.

Consumers will rate products to be of a higher quality when the product is

endorsed by someone who the consumers believe possesses attributes similar to the

attributes of the product. Consumers, however, will temper this perception if the

endorser is well liked and positively viewed. This explains why endorsers such as Bill Cosby have a positve effect of the perception of a food product. While Bill Cosby does not possess attributes similar to the food product, he is so well liked and so positively viewed that that the consumers perception is positively influenced.

6.3 Final conclusions

The conclusions from this study can be used to explain why basketball shoes endorsed by Michael Jordan, a known expert basketball player, will be priced at a level up to 100% higher than similar shoes sold at the same location. It also explains why name brand products are priced at a large premium above the generic brands which are physically the same. The consumers perceive the endorsed or name brand to be of higher quality and are therefore willing to pay more.

It appears that the selection of an endorser who is viewed positively by consumers and who is known to possess attributes which match up with the attributes of the product, is critical in order for the indirect information to significantly impact the consumer's perception. Mismatched endorsers or endorsers who are not viewed positively will have a much smaller impact on consumers.

On the other hand, an endorser who may not match up perfectly with the product, but who is viewed positively may still have an effect on the consumer, although the effect will probably be smaller than with a properly matched endorser. Well liked endorsers can have positive effects on consumer perceptions even if they don not match up well with the product.

6.4 Future Research

From a theoretical standpoint this study only focuses on how the use of a celebrity endorser affects the consumer's perception of product quality and how this perception differentiates products thereby impacting the consumer's willingness to pay more. It does not take into account the cost of using endorsers. It is likely some celebrities will charge a very high fee and the cost of the advertising with the endorser could be too much to be profitable. There might be a way to model the condition under which the endorser may not be feasible.

From an empirical standpoint, the not so significant impact indicated with the use of Arnold Schwartzenegger in the endorsement of a cleaning solution could be because the subjects used in the pretest and the latter one are not the same. The future research can correct this aspect by using exactly the same subjects in order to get rid of possible external impacts from the tastes of the subjects.

Since the endorsement effect occurs due to the association of the image of the endorser with the product, there is a possibility that finding a properly matched endorser may be very difficult. For instance, a product that is highly technologically complicated like a computer, a computer chip or the engine of a large airplane may be difficult to match with an endorser.

The subjects used in this study were undergraduate college students from two Easter universities. Future research should look at different subject pools to assess the impact of age, gender, income level and living environment, among others. Perhaps more precise results could be found including some additional demographic information and controlling for where the subject lives and with whom.

One final point is that consumer behavior is a topic researched by two streams: one from marketing scholars and one from economists. Surprisingly these two streams have operated largely in isolation of one another. This thesis attempted to use the theoretical model building normally associated with the economic stream, as well as the experimental data gather methods used to observe and predict behavior, normally associated with marketing scholars. The results should be acceptable to both streams of research and will hopefully encourage more interdisciplinary work.

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APPENDIX 4A: CONSUMER RESEARCH STUDY FOR CELEBRITY/ATTRIBUTE SELECTION

BACKGROUND

You are participating in an advertising study sponsored by a major manufacturer. The manufacturer is considering launching a new product, and using a well-known celebrity as an endorser. Before committing millions of dollars, the manufacturer wants to get some feedback to its possible endorser selection.

You will be asked a couple of questions about each possible celebrity endorser. Your careful thought will ensure that the results of this study will be meaningful to the manufacturer.

PLEASE TURN THE PAGE.

For each of the celebrities listed below, write down some attributes or characteristics that you believe go along with the celebrity. Try to write four or five for each one. Then circle the attribute that you feel is most strongly related. Then answer the question that follows about your overall impression of the celebrity - the higher the number, the more positive your impression.

Pamela Andersen

My overall impression of Pamela Andersen is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

Tim Allen

My overall impression of Tim Allen is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

Sarah Jessica Parker

My overall impression of Sarah Jessica Parker is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Lance Armstrong

My overall impression of Lance Armstrong is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Carl Lewis

My overall impression of Carl Lewis is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Sean Connery

My overall impression of Sean Connery is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

Arnold Schwartzeneger

My overall impression of Arnold Schwartzeneger is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

Cal Ripken

My overall impression of Cal Ripken is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

Jennifer Lopez

My overall impression of Jennifer Lopez is:

Strongly dislike   Strongly like
      1   2   3   4   5   6   7   8   9

Unfavorable   Favorable
      1   2   3   4   5   6   7   8   9

Negative   Positive
      1   2   3   4   5   6   7   8   9

Mark McGuire

My overall impression of Mark McGuire is:

Strongly dislike   Strongly like
      1   2   3   4   5   6   7   8   9

Unfavorable   Favorable
      1   2   3   4   5   6   7   8   9

Negative   Positive
      1   2   3   4   5   6   7   8   9

Mario Andretti

My overall impression of Mario Andretti is:

Strongly dislike   Strongly like
      1   2   3   4   5   6   7   8   9

Unfavorable   Favorable
      1   2   3   4   5   6   7   8   9

Negative   Positive
      1   2   3   4   5   6   7   8   9

Courtney Cox

My overall impression of Courtney Cox is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Pierce Brosnan

My overall impression of Pierce Brosnan is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Michael Johnson

My overall impression of Michael Johnson is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Robin Williams

My overall impression of Robin Williams is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Tom Hanks

My overall impression of Tom Hanks is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Julia Roberts

My overall impression of Julia Roberts is:

Strongly dislike   Strongly like

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unfavorable   Favorable

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Negative   Positive

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

APPENDIX 4B: CONSUMER RESEARCH STUDY FOR PRODUCT/ATTRIBUTE SELECTION

BACKGROUND

You are participating in an advertising study sponsored by a major manufacturer. The manufacturer is considering launching a new product, and using a well-known celebrity as an endorser. Before committing millions of dollars, the manufacturer wants to get some feedback to its possible endorser selection.

In order to determine which endorser will properly match-up, it is important to determine the attributes most closely related to the product. For instance, for toothpaste the important attributes may be 1) contains fluoride, 2) prevents cavities, 3) prevents bad breath or 4) whitens teeth.

PLEASE TURN THE PAGE.

Shown below are a number of different products. For each product write two or three attributes that you would associate with this product, similar to the toothpaste example discussed on the first page. Then circle the attribute that you feel is most important.

Crazy Glue

Tires

Acne Medication

Light Bulbs

Computers

Batteries

Shown below are a number of different products. For each product write two or three attributes that you would associate with this product, similar to the toothpaste example discussed on the first page. Then circle the attribute that you feel is most important.

Pain Killers

Cologne

Insecticides

Extended wear contact lenses

Household cleaning products

Synthetic motor oil

For each of the products listed below, four attributes are given. Circle the number that you feel best represents the importance of that attribute to the product.

CRAZY GLUE
Strong
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9

TIRES
Strong
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9

ACNE MEDICATION
Strong
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
    1   2   3   4   5   6   7   8   9

LIGHT BULBS
Strong
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9

COMPUTERS
Strong
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9

BATTERIES
Strong
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
     1   2   3   4   5   6   7   8   9

PAIN KILLERS
Strong
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9

COLOGNE
Strong
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9

INSECTICIDES
Strong
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Powerful
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Long Lasting
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9
Endurance
Unimportant   Extremely Important
                1   2   3   4   5   6   7   8   9

EXTENDED WEAR CONTACT LENSES

Strong

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Powerful

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Long Lasting

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Endurance

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

HOUSEHOLD CLEANING SOLUTIONS

Strong

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Powerful

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Long Lasting

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Endurance

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

SYTHETHIC MOTOR OIL

Strong

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Powerful

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Long Lasting

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Endurance

Unimportant   Extremely Important

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**APPENDIX 4C: BILLOWS LONG LASTING LIGHT BULBS
CONSUMER RESEARCH STUDY**

BACKGROUND

You are participating in a marketing study sponsored by a major producer of cleaning solutions. The producer is beginning to market a long-lasting light bulb called **Billows**. As you will see, **Billows** plans to rely heavily on the use print advertisements. Before committing millions of dollars to the marketing of **Billows**, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Billows** household cleaning solution.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Billows
Lighting the Way

Long Lasting, Energy Efficient
Soothing Natural Light

Get out of the *Dark* and into the Light

Evaluation of Billows Long-Lasting Light Bulbs

Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Billows** - the higher the number, the more positive your evaluation.

Concerning the time the **Billows** bulb will last, I would rate the product as:

Short Lived   Long-lasting
      1   2   3   4   5   6   7   8   9

Not Enduring   Enduring
      1   2   3   4   5   6   7   8   9

Concerning the light from a **Billows** light bulb, I think the light is:

Unpleasant   Pleasant
      1   2   3   4   5   6   7   8   9

Harsh   Soft
      1   2   3   4   5   6   7   8   9

Concerning **Billows** efficiency. I think the light bulb is:

Not Efficient   Efficient
      1   2   3   4   5   6   7   8   9

Wasteful   Thorough
      1   2   3   4   5   6   7   8   9

My feeling about the overall quality of **Billows** is:

Bad   Good
      1   2   3   4   5   6   7   8   9

Low Quality   High Quality
      1   2   3   4   5   6   7   8   9

Unacceptable   Acceptable
      1   2   3   4   5   6   7   8   9

If a standard light bulb sells for $.60 for a100 watt bulb, I would be willing to pay for **Billows:**

1	2	3	4	5	6	7	8	9
$.40	$.45	$.50	$.55	$.60	$.65	$.70	$.75	$.80

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of the Billows ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible								Very credible
1	2	3	4	5	6	7	8	9

Not believable								Believable
1	2	3	4	5	6	7	8	9

False								True
1	2	3	4	5	6	7	8	9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant								Relevant
1	2	3	4	5	6	7	8	9

Not Important								Important
1	2	3	4	5	6	7	8	9

Useless								Meaningful
1	2	3	4	5	6	7	8	9

Overall, I thought the **Billows** long lasting light bulb ad was:

Ineffective								Effective
1	2	3	4	5	6	7	8	9
Uninformative								Informative
1	2	3	4	5	6	7	8	9
Uninteresting								Interesting
1	2	3	4	5	6	7	8	9

Your gender: (circle one):   Male   Female

APPENDIX 4D: CONSUMER RESEARCH STUDY
BILLOWS LONG LASTING LIGHT BULBS
(Light Bulb with Arnold Schwarzenegger)

BACKGROUND

You are participating in a marketing study sponsored by a major producer of light bulbs. The producer is beginning to market a long-lasting light bulb called **Billows**. As you will see, **Billows** plans to rely heavily on the use of actor **Arnold Schwartenegger** as an endorser. Before committing millions of dollars to the marketing of **Billows** long-lasting light bulbs, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Billows** long-lasting light bulbs.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

PLEASE TURN THE PAGE.

Soon you will view the **Billows** long-lasting light bulbs print advertisement featuring actor **Arnold Schwartenegger** who, as you may know, was named Mr. Universe for two successive years and has starred in a number of action movies. Before viewing the ads, the producer wants to know some things about your views on **Arnold Schwartenegger.** Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Arnold Schwartenegger** the higher the number the more positive your evaluation.

I think **Arnold Schwartenegger** is**:**

Not Enduring   Enduring
1   2   3   4   5   6   7   8   9

Short lived   Long-lasting
1   2   3   4   5   6   7   8   9

Unpleasant   Pleasant
1   2   3   4   5   6   7   8   9

Unkind   Kind
1   2   3   4   5   6   7   8   9

Inefficient   Efficient
1   2   3   4   5   6   7   8   9

Wasteful   Thorough
1   2   3   4   5   6   7   8   9

My overall impression of **Arnold Schwartenegger** is:

Strongly dislike   Strongly like
1   2   3   4   5   6   7   8   9

Unfavorable   Favorable
1   2   3   4   5   6   7   8   9

Negative   Positive
1   2   3   4   5   6   7   8   9

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Billows

Long Lasting, Energy Efficient
Soothing Natural Light

**Arnold
Schwartzenegger's**
Favorite long
lasting Bulb.

Get out of the **Dark** and into the Light

Evaluation of Billows Long-Lasting Light Bulbs

Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Billows** - the higher the number, the more positive your evaluation.

Concerning the time that the **Billows** bulb will last, I would rate the product as:

Short Lived   Long-lasting
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Not Enduring   Enduring
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Concerning the light from a **Billows** light bulb, I think the light is:

Unpleasant   Pleasant
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Harsh   Soft
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Concerning **Billows** efficiency. I think the light bulb is:

Not Efficient   Efficient
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Wasteful   Thorough
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

My feeling about the overall quality of **Billows** is:

Bad   Good
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Low Quality   High Quality
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Unacceptable   Acceptable
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

If a standard light bulb sells for $.60 for a100 watt bulb, I would be willing to pay for **Billows:**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| $.40 | $.45 | $.50 | $.55 | $.60 | $.65 | $.70 | $.75 | $.80 |

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of Arnold Schwartenegger

In this section we are interested in your evaluation of **Arnold Schwartenegger** as an endorser for **Billows** long-lasting light bulbs. Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Arnold Schwartenegger** - the higher the number, the more positive the response.

I think **Arnold Schwartenegger** is:

Dishonest								Honest
1	2	3	4	5	6	7	8	9

Undependable								Dependable
1	2	3	4	5	6	7	8	9

Insincere								Sincere
1	2	3	4	5	6	7	8	9

Untrustworthy								Trustworthy
1	2	3	4	5	6	7	8	9

Unreliable								Reliable
1	2	3	4	5	6	7	8	9

Unqualified								Qualified
1	2	3	4	5	6	7	8	9

Not an expert								Expert
1	2	3	4	5	6	7	8	9

Inexperienced								Experienced
1	2	3	4	5	6	7	8	9

Not knowledgeable								Knowledgeable
1	2	3	4	5	6	7	8	9

Unskilled								Skilled
1	2	3	4	5	6	7	8	9

As an endorser for **Billows** I think **Arnold Schwartenegger** is:

Inappropriate								Appropriate
1	2	3	4	5	6	7	8	9

Ineffective								Effective
1	2	3	4	5	6	7	8	9

Evaluation of the Billows ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible   Very credible
        1   2   3   4   5   6   7   8   9

Not believable   Believable
        1   2   3   4   5   6   7   8   9

False   True
        1   2   3   4   5   6   7   8   9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant   Relevant
        1   2   3   4   5   6   7   8   9

Not Important   Important
        1   2   3   4   5   6   7   8   9

Useless   Meaningful
        1   2   3   4   5   6   7   8   9

Overall, I thought the **Billows** long lasting bulb ad was:

Ineffective   Effective
        1   2   3   4   5   6   7   8   9
Uninformative   Informative
        1   2   3   4   5   6   7   8   9
Uninteresting   Interesting
        1   2   3   4   5   6   7   8   9

Your gender: (circle one):   Male   Female

APPENDIX 4E: CONSUMER RESEARCH STUDY
BILLOWS LONG LASTING LIGHT BULBS
(Light Bulb with Cal Ripken)

BACKGROUND

You are participating in a marketing study sponsored by a major producer of light bulbs. The producer is beginning to market a long-lasting light bulb called **Billows**. As you will see, **Billows** plans to rely heavily on the use of baseball star **Cal Ripken Jr**. as an endorser. Before committing millions of dollars to the marketing of **Billows** long-lasting light bulbs, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Billows** long-lasting light bulbs.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

PLEASE TURN THE PAGE.

Soon you will view the **Billows** long-lasting light bulbs print advertisement featuring **Cal Ripken Jr.** who, as you may know, is a star baseball player known as the "ironman' for playing in more consecutive games than any other player in the history of the sport. He has also won Golden Glove awards for his error-free play. Before viewing the ads, the producer wants to know some things about your views on **Cal Ripken Jr.**. Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Cal Ripken Jr.,** the higher the number the more positive your evaluation.

I think **Cal Ripken Jr.** is**:**

Not Enduring								Enduring
1	2	3	4	5	6	7	8	9

Short lived								Long-lasting
1	2	3	4	5	6	7	8	9

Unpleasant								Pleasant
1	2	3	4	5	6	7	8	9

Unkind								Kind
1	2	3	4	5	6	7	8	9

Inefficient								Efficient
1	2	3	4	5	6	7	8	9

Wasteful								Thorough
1	2	3	4	5	6	7	8	9

My overall impression of **Cal Ripken Jr.** is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Billows

Long Lasting, Energy Efficient
Soothing Natural Light

Cal Ripken Jr.'s
Favorite long
lasting Bulb

Get out of the **Dark** and into the Light

Evaluation of Billows Long-Lasting Light Bulbs

Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Billows** - the higher the number, the more positive your evaluation.

Concerning the time that the **Billows** bulb will last, I would rate the product as:

Short Lived   Long-lasting
    1   2   3   4   5   6   7   8   9

Not Enduring   Enduring
    1   2   3   4   5   6   7   8   9

Concerning the light from a **Billows** light bulb, I think the light is:

Unpleasant   Pleasant
    1   2   3   4   5   6   7   8   9

Harsh   Soft
    1   2   3   4   5   6   7   8   9

Concerning **Billows** efficiency. I think the light bulb is:

Not Efficient   Efficient
    1   2   3   4   5   6   7   8   9

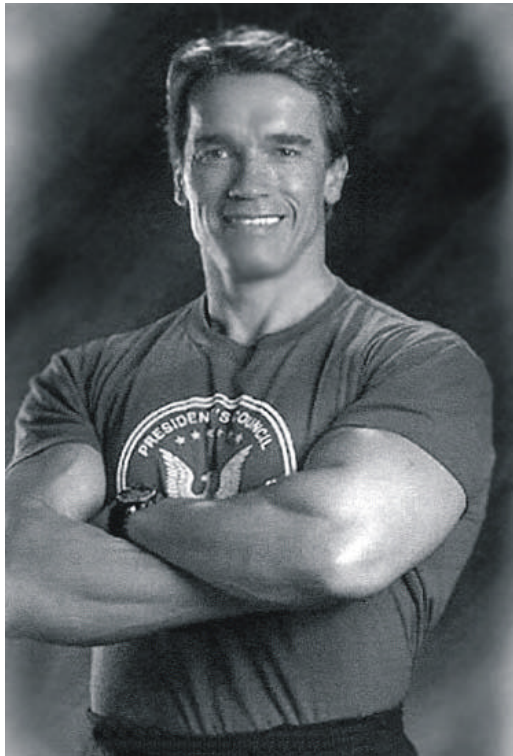Wasteful   Thorough
    1   2   3   4   5   6   7   8   9

My feeling about the overall quality of **Billows** is:

Bad   Good
    1   2   3   4   5   6   7   8   9

Low Quality   High Quality
    1   2   3   4   5   6   7   8   9

Unacceptable   Acceptable
    1   2   3   4   5   6   7   8   9

If a standard light bulb sells for $.60 for a100 watt bulb, I would be willing to pay for **Billows:**

1	2	3	4	5	6	7	8	9
$.40	$.45	$.50	$.55	$.60	$.65	$.70	$.75	$.80

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of Cal Ripken Jr.

In this section we are interested in your evaluation of **Cal Ripken Jr.** as an endorser for **Billows** long-lasting light bulbs. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Cal Ripken Jr. -** the higher the number, the more positive the response.

I think **Cal Ripken Jr.** is:

Dishonest								Honest
1	2	3	4	5	6	7	8	9

Undependable								Dependable
1	2	3	4	5	6	7	8	9

Insincere								Sincere
1	2	3	4	5	6	7	8	9

Untrustworthy								Trustworthy
1	2	3	4	5	6	7	8	9

Unreliable								Reliable
1	2	3	4	5	6	7	8	9

Unqualified								Qualified
1	2	3	4	5	6	7	8	9

Not an expert								Expert
1	2	3	4	5	6	7	8	9

Inexperienced								Experienced
1	2	3	4	5	6	7	8	9

Not knowledgeable								Knowledgeable
1	2	3	4	5	6	7	8	9

Unskilled								Skilled
1	2	3	4	5	6	7	8	9

As an endorser for **Billows** I think **Cal Ripken Jr.** is:

Inappropriate								Appropriate
1	2	3	4	5	6	7	8	9

Ineffective								Effective
1	2	3	4	5	6	7	8	9

Evaluation of the Billows ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible   Very credible
      1   2   3   4   5   6   7   8   9

Not believable   Believable
      1   2   3   4   5   6   7   8   9

False   True
      1   2   3   4   5   6   7   8   9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant   Relevant
      1   2   3   4   5   6   7   8   9

Not Important   Important
      1   2   3   4   5   6   7   8   9

Useless   Meaningful
      1   2   3   4   5   6   7   8   9

Overall, I thought the **Billows** long lasting bulb ad was:

Ineffective   Effective
      1   2   3   4   5   6   7   8   9

Uninformative   Informative
      1   2   3   4   5   6   7   8   9

Uninteresting   Interesting
      1   2   3   4   5   6   7   8   9

Your gender: (circle one):   Male   Female

APPENDIX 4F: CONSUMER RESEARCH STUDY
MOYER'S HOUSEHOLD CLEANING SOLUTION
(Cleaning solution with no endorse)

BACKGROUND

You are participating in a marketing study sponsored by a major producer of cleaning solutions. The producer is beginning to market a cleaning solution called **Moyer's**. As you will see, **Moyer's** plans to rely heavily on the use print advertisements. Before committing millions of dollars to the marketing of **Moyer's**, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Moyer's** household cleaning solution.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Moyer's

Strong Cleaner,
Gentle on Surfaces,
Environmentally Safe

When the cleaning gets tough ... the
tough get Moyer's

Evaluation of Moyer's Household Cleaning Solution

Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Moyer's** - the higher the number, the more positive your evaluation.

Concerning the strength of **Moyer's** I would rate the product as:

Not Strong   Very Strong
1   2   3   4   5   6   7   8   9

Weak   Powerful
1   2   3   4   5   6   7   8   9

Concerning **Moyer's** reaction on household surfaces, I think the product is:

Harsh   Gentle
1   2   3   4   5   6   7   8   9

Harmful   Safe
1   2   3   4   5   6   7   8   9

Concerning **Moyer's** effect on the environment, I think the product is:

Environmentally Dangerous   Environmentally Friendly
1   2   3   4   5   6   7   8   9

Polluting   Non-polluting
1   2   3   4   5   6   7   8   9

My feeling about the overall quality of **Moyer's** is:

Bad   Good
1   2   3   4   5   6   7   8   9

Low Quality   High Quality
1   2   3   4   5   6   7   8   9

Unacceptable   Acceptable
1   2   3   4   5   6   7   8   9

If a standard household cleaner sells for $1.59 for a 16-ounce container, I would be willing to pay for **Moyer's:**

1	2	3	4	5	6	7	8	9
$1.19	$1.29	$1.39	$1.49	$1.59	$1.69	$1.79	$1.89	$1.99

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of the Moyer's ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible								Very credible
1	2	3	4	5	6	7	8	9

Not believable								Believable
1	2	3	4	5	6	7	8	9

False								True
1	2	3	4	5	6	7	8	9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant								Relevant
1	2	3	4	5	6	7	8	9

Not Important								Important
1	2	3	4	5	6	7	8	9

Useless								Meaningful
1	2	3	4	5	6	7	8	9

Overall, I thought the **Moyer's** household cleaning solution ad was:

Ineffective								Effective
1	2	3	4	5	6	7	8	9

Uninformative								Informative
1	2	3	4	5	6	7	8	9

Uninteresting								Interesting
1	2	3	4	5	6	7	8	9

Your gender: (circle one):   Male   Female

APPENDIX 4G: CONSUMER RESEARCH STUDY
MOYER'S HOUSEHOLD CLEANING SOLUTION
(Cleaning solution with Arnold Schwartzenegger)

BACKGROUND

You are participating in a marketing study sponsored by a major producer of cleaning solutions. The producer is beginning to market a cleaning solution called **Moyer's**. As you will see, **Moyer's** plans to rely heavily on the use of actor **Arnold Schwartenegger** as an endorser. Before committing millions of dollars to the marketing of **Moyer's**, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Moyer's** household cleaning solution.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

PLEASE TURN THE PAGE.

Soon you will view the **Moyer's** household cleaning solution print advertisement featuring actor **Arnold Schwartzennegger** who, as you may know, was named Mr. Universe for two successive years and has starred in a number of action movies. Before viewing the ads, the producer wants to know some things about your views on **Arnold Schwartzenneger**. Please answer <u>each of the questions</u> below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Arnold Schwartzeneeger,** the higher the number the more positive your evaluation.

I think **Arnold Scwartzenegger is:**

Not Strong   Very Strong
    1   2   3   4   5   6   7   8   9

Weak   Powerful
    1   2   3   4   5   6   7   8   9

Unkind   Kind
    1   2   3   4   5   6   7   8   9

Tough   Gentle
    1   2   3   4   5   6   7   8   9

Uncaring   Caring
    1   2   3   4   5   6   7   8   9

Unconcerned   Concerned
    1   2   3   4   5   6   7   8   9

My overall impression of **Arnold Schwartzenegger** is:

Strongly dislike   Strongly like
    1   2   3   4   5   6   7   8   9

Unfavorable   Favorable
    1   2   3   4   5   6   7   8   9

Negative   Positive
    1   2   3   4   5   6   7   8   9

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Moyer's

Strong Cleaner,
Gentle on Surfaces,
Environmentally Safe

Arnold
Schwartzenegger

" Cleans Up at Home
and on the Set "

When the cleaning gets tough
... the tough get Moyer's

Evaluation of Moyer's Household Cleaning Solution

Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Moyer's** - the higher the number, the more positive your evaluation.

Concerning the strength of **Moyer's** I would rate the product as:

Not Strong   Very Strong
          1   2   3   4   5   6   7   8   9

Weak   Powerful
          1   2   3   4   5   6   7   8   9

Concerning **Moyer's** reaction on household surfaces, I think the product is:

Harsh   Gentle
          1   2   3   4   5   6   7   8   9

Harmful   Safe
          1   2   3   4   5   6   7   8   9

Concerning **Moyer's** effect on the environment, I think the product is:

Environmentally Dangerous   Environmentally Friendly
          1   2   3   4   5   6   7   8   9

Polluting   Non-polluting
          1   2   3   4   5   6   7   8   9

My feeling about the overall quality of **Moyer's** is:

Bad   Good
          1   2   3   4   5   6   7   8   9

Low Quality   High Quality
          1   2   3   4   5   6   7   8   9

Unacceptable   Acceptable
          1   2   3   4   5   6   7   8   9

If a standard household cleaner sells for $1.59 for a 16-ounce container, I would be willing to pay for **Moyer's:**

1	2	3	4	5	6	7	8	9
$1.19	$1.29	$1.39	$1.49	$1.59	$1.69	$1.79	$1.89	$1.99

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of Arnold Schwartzenegger

In this section we are interested in your evaluation of **Arnold Schwartzenegger** as an endorser for **Moyer's** household cleaning solution. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Arnold Schwartzenegger -** the higher the number, the more positive the response.

I think **Arnold Schwartzenegger** is:

Dishonest   Honest
1   2   3   4   5   6   7   8   9

Undependable   Dependable
1   2   3   4   5   6   7   8   9

Insincere   Sincere
1   2   3   4   5   6   7   8   9

Untrustworthy   Trustworthy
1   2   3   4   5   6   7   8   9

Unreliable   Reliable
1   2   3   4   5   6   7   8   9

Unqualified   Qualified
1   2   3   4   5   6   7   8   9

Not an expert   Expert
1   2   3   4   5   6   7   8   9

Inexperienced   Experienced
1   2   3   4   5   6   7   8   9

Not knowledgeable   Knowledgeable
1   2   3   4   5   6   7   8   9

Unskilled   Skilled
1   2   3   4   5   6   7   8   9

As an endorser for **Moyer's** I think **Arnold Schwartzenegger** is:

Inappropriate   Appropriate
1   2   3   4   5   6   7   8   9

Ineffective   Effective
1   2   3   4   5   6   7   8   9

Evaluation of the Moyer's ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible   Very credible
     1   2   3   4   5   6   7   8   9

Not believable   Believable
     1   2   3   4   5   6   7   8   9

False   True
     1   2   3   4   5   6   7   8   9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant   Relevant
     1   2   3   4   5   6   7   8   9

Not Important   Important
     1   2   3   4   5   6   7   8   9

Useless   Meaningful
     1   2   3   4   5   6   7   8   9

Overall, I thought the **Moyer's** household cleaning solution ad was:

Ineffective   Effective
     1   2   3   4   5   6   7   8   9
Uninformative   Informative
     1   2   3   4   5   6   7   8   9
Uninteresting   Interesting
     1   2   3   4   5   6   7   8   9

Your gender: (circle one):   Male   Female

**APPENDIX 4H: CONSUMER RESEARCH STUDY
MOYER'S HOUSEHOLD CLEANING SOLUTION**
(Cleaning solution with Cal Ripken)

BACKGROUND

You are participating in a marketing study sponsored by a major producer of cleaning solutions. The producer is beginning to market a cleaning solution called **Moyer's**. As you will see, **Moyer's** plans to rely heavily on the use of baseball star **Cal Ripken Jr**. as an endorser. Before committing millions of dollars to the marketing of **Moyer's**, the producer wants input from consumers such as yourself. Your responses will help the manufacturer determine the best advertising and marketing approach for **Moyer's** household cleaning solution.

You will be shown a copy of a print advertisement and asked several questions. Your careful thought will ensure that the results of this study will be meaningful. As you progress though the study, please do not return to, or look back at, any previous material or questions unless specifically directed.

PLEASE TURN THE PAGE.

Soon you will view the **Moyer's** household cleaning solution print advertisement featuring **Cal Ripken Jr.** who, as you may know, is a star baseball player known as the "ironman' for playing in more consecutive games than any other player in the history of the sport. He has also won Golden Glove awards for his error-free play. Before viewing the ads, the producer wants to know some things about your views on **Cal Ripken Jr.**. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Cal Ripken Jr.,** the higher the number the more positive your evaluation.

I think **Cal Ripken Jr.** is**:**

Not Strong								Very Strong
1	2	3	4	5	6	7	8	9

Weak								Powerful
1	2	3	4	5	6	7	8	9

Unkind								Kind
1	2	3	4	5	6	7	8	9

Tough								Gentle
1	2	3	4	5	6	7	8	9

Uncaring								Caring
1	2	3	4	5	6	7	8	9

Unconcerned								Concerned
1	2	3	4	5	6	7	8	9

My overall impression of **Cal Ripken Jr.** is:

Strongly dislike								Strongly like
1	2	3	4	5	6	7	8	9

Unfavorable								Favorable
1	2	3	4	5	6	7	8	9

Negative								Positive
1	2	3	4	5	6	7	8	9

STOP. DO NOT TURN THE PAGE UNTIL TOLD TO DO SO.

Moyer's

Strong Cleaner,
Gentle on Surfaces,
Environmentally Safe

Cal Ripken Jr

" Cleans Up at Home
and in the Clubhouse"

When the cleaning gets tough
…the tough get Moyer's

Evaluation of Moyer's Household Cleaning Solution

Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Moyer's** - the higher the number, the more positive your evaluation.

Concerning the strength of **Moyer's** I would rate the product as:

Not Strong								Very Strong
1	2	3	4	5	6	7	8	9

Weak								Powerful
1	2	3	4	5	6	7	8	9

Concerning **Moyer's** reaction on household surfaces, I think the product is:

Harsh								Gentle
1	2	3	4	5	6	7	8	9

Harmful								Safe
1	2	3	4	5	6	7	8	9

Concerning **Moyer's** effect on the environment, I think the product is:

Environmentally Dangerous						Environmentally Friendly		
1	2	3	4	5	6	7	8	9

Polluting							Non-polluting	
1	2	3	4	5	6	7	8	9

My feeling about the overall quality of **Moyer's** is:

Bad								Good
1	2	3	4	5	6	7	8	9

Low Quality								High Quality
1	2	3	4	5	6	7	8	9

Unacceptable								Acceptable
1	2	3	4	5	6	7	8	9

If a standard household cleaner sells for $1.59 for a 16-ounce container, I would be willing to pay for **Moyer's:**

1	2	3	4	5	6	7	8	9
$1.19	$1.29	$1.39	$1.49	$1.59	$1.69	$1.79	$1.89	$1.99

PLEASE TURN THE PAGE AND COMPLETE THE QUESTIONNAIRE.

Evaluation of Cal Ripken Jr.

In this section we are interested in your evaluation of **Cal Ripken Jr.** as an endorser for **Moyer's** household cleaning solution. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds with your evaluation of **Cal Ripken Jr. -** the higher the number, the more positive the response.

I think **Cal Ripken Jr.** is:

Dishonest   Honest
         1   2   3   4   5   6   7   8   9

Undependable   Dependable
         1   2   3   4   5   6   7   8   9

Insincere   Sincere
         1   2   3   4   5   6   7   8   9

Untrustworthy   Trustworthy
         1   2   3   4   5   6   7   8   9

Unreliable   Reliable
         1   2   3   4   5   6   7   8   9

Unqualified   Qualified
         1   2   3   4   5   6   7   8   9

Not an expert   Expert
         1   2   3   4   5   6   7   8   9

Inexperienced   Experienced
         1   2   3   4   5   6   7   8   9

Not knowledgeable   Knowledgeable
         1   2   3   4   5   6   7   8   9

Unskilled   Skilled
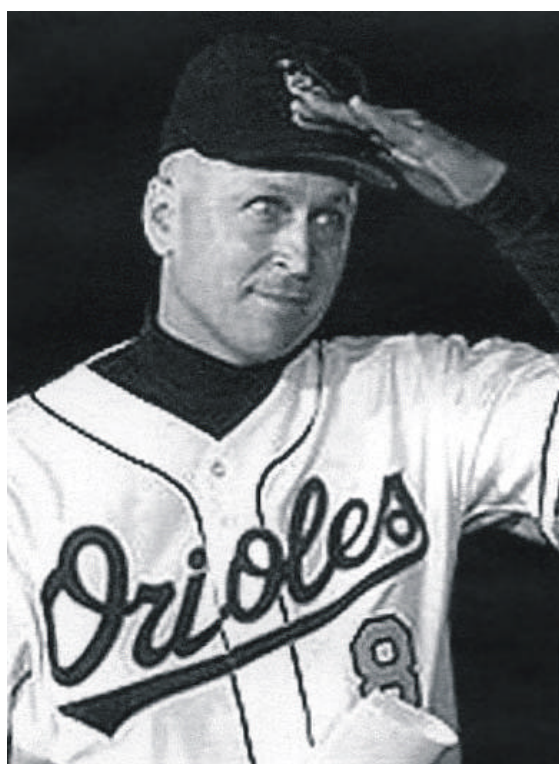   1   2   3   4   5   6   7   8   9

As an endorser for **Moyer's** I think **Cal Ripken Jr.** is:

Inappropriate   Appropriate
         1   2   3   4   5   6   7   8   9

Ineffective   Effective
         1   2   3   4   5   6   7   8   9

Evaluation of the Moyer's ad

You are now being asked to give your opinion about the ad you have just viewed. Please answer each of the questions below to the best of your ability. You should circle the number that bests corresponds to your evaluation of the ad - the higher the number the more positive your evaluation.

Concerning the credibility of the information received from the ad, I think it is:

Not credible   Very credible
        1   2   3   4   5   6   7   8   9

Not believable   Believable
        1   2   3   4   5   6   7   8   9

False   True
        1   2   3   4   5   6   7   8   9

Concerning how relevant the information in the ad would be to my buying decision, I think it is:

Not relevant   Relevant
        1   2   3   4   5   6   7   8   9

Not Important   Important
        1   2   3   4   5   6   7   8   9

Useless   Meaningful
        1   2   3   4   5   6   7   8   9

Overall, I thought the **Moyer's** household cleaning solution ad was:

Ineffective   Effective
        1   2   3   4   5   6   7   8   9
Uninformative   Informative
        1   2   3   4   5   6   7   8   9
Uninteresting   Interesting
        1   2   3   4   5   6   7   8   9

Your gender: (circle one):   Male   Female

APPENDIX 5A: ENDORSER EVALUATIONS

Impression of Endorser - Positive Rating

Cal Ripken	
Mean	7.075055
Standard Error	0.134548
Median	7.333333
Mode	9
Standard Deviation	1.653357
Sample Variance	2.733588
Kurtosis	1.362992
Skewness	-1.02982
Range	8
Minimum	1
Maximum	9
Sum	1068.333
Count	151

Arnold Schwartzenegger	
Mean	6.014184
Standard Error	0.130071
Median	6
Mode	5
Standard Deviation	1.54451
Sample Variance	2.385512
Kurtosis	1.032196
Skewness	-0.61704
Range	8
Minimum	1
Maximum	9
Sum	848
Count	141

Appropriate Endorser Cal Ripken with Billows light bulbs
Arnold Scwartzenegger with Moyers

SUMMARY

Groups	Count	Sum	Average	Variance
cal appro	75	489	6.52	3.455676
arnie appro	71	425.5	5.992958	3.167807

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	10.13112	1	10.13112	3.055464	0.082597	3.906848
Within Groups	477.4665	144	3.315739			
Total	487.5976	145				

APPENDIX 5A: ENDORSER EVALUATIONS (continued)

Arnold Schwartzenegger Attribute Match-up with Moyer's cleaning solution

Strong/Powerful		*Gentle/safe*		*Friendly/nonpollute*	
Mean	7.795775	Mean	5.978873	Mean	6.401408
Standard Error	0.190988	Standard Error	0.175867	Standard Error	0.176205
Median	8	Median	6	Median	6.5
Mode	9	Mode	7	Mode	5
Standard Deviation	1.609298	Standard Deviation	1.481883	Standard Deviation	1.484731
Sample Variance	2.589839	Sample Variance	2.195976	Sample Variance	2.204427
Kurtosis	5.626717	Kurtosis	-0.050121	Kurtosis	-0.018187
Skewness	-2.17155	Skewness	-0.326963	Skewness	-0.213519
Range	8	Range	7.5	Range	7
Minimum	1	Minimum	1.5	Minimum	2
Maximum	9	Maximum	9	Maximum	9
Sum	553.5	Sum	424.5	Sum	454.5
Count	71	Count	71	Count	71

Arnold Schwartzenegger Attribute Match-up with Billows light bulbs

Long lasting/enduring		*Pleasant/soft*		*Efficent/thorough*	
Mean	5.71429	Mean	5.864286	Mean	5.59286
Standard Error	0.19132	Standard Error	0.221495	Standard Error	0.21007
Median	5.75	Median	6.25	Median	5.75
Mode	5	Mode	7	Mode	5
Standard Deviation	1.60066	Standard Deviation	1.853163	Standard Deviation	1.75758
Sample Variance	2.56211	Sample Variance	3.434213	Sample Variance	3.08908
Kurtosis	0.49766	Kurtosis	0.245756	Kurtosis	0.22713
Skewness	-0.6342	Skewness	-0.84796	Skewness	-0.6226
Range	7.5	Range	8	Range	7.5
Minimum	1	Minimum	1	Minimum	1
Maximum	8.5	Maximum	9	Maximum	8.5
Sum	400	Sum	410.5	Sum	391.5
Count	70	Count	70	Count	70

APPENDIX 5A: ENDORSER EVALUATIONS (continued)

Cal Ripken Attribute Match-up with Moyer's cleaning solution

Strong/Powerful		*Gentle/safe*		*Friendly/nonpollute*	
Mean	6.506579	Mean	6.065789	Mean	6.230263
Standard Error	0.152607	Standard Error	0.151699	Standard Error	0.180506
Median	6.5	Median	6	Median	6.5
Mode	7	Mode	5	Mode	5
Standard Deviation	1.330397	Standard Deviation	1.322478	Standard Deviation	1.573617
Sample Variance	1.769956	Sample Variance	1.748947	Sample Variance	2.476272
Kurtosis	2.78925	Kurtosis	-0.115201	Kurtosis	0.702712
Skewness	-0.956598	Skewness	0.080455	Skewness	-0.623226
Range	8	Range	6.5	Range	7.5
Minimum	1	Minimum	2.5	Minimum	1.5
Maximum	9	Maximum	9	Maximum	9
Sum	494.5	Sum	461	Sum	473.5
Count	76	Count	76	Count	76

Cal Ripken Attribute Match-up with Billows light bulbs

Long lasting/Enduring		*Pleasant/soft*		*Efficient/thorough*	
Mean	7.601351	Mean	7.371622	Mean	7.310811
Standard Error	0.166352	Standard Error	0.191947	Standard Error	0.194496
Median	8	Median	8	Median	7.75
Mode	9	Mode	9	Mode	9
Standard Deviation	1.431016	Standard Deviation	1.651195	Standard Deviation	1.673121
Sample Variance	2.047806	Sample Variance	2.726444	Sample Variance	2.799334
Kurtosis	2.60271	Kurtosis	1.044213	Kurtosis	1.509689
Skewness	-1.45289	Skewness	-1.139353	Skewness	-1.303916
Range	7	Range	7	Range	7
Minimum	2	Minimum	2	Minimum	2
Maximum	9	Maximum	9	Maximum	9
Sum	562.5	Sum	545.5	Sum	541
Count	74	Count	74	Count	74

APPENDIX 5B: REGRESSION RESULTS FOR QUALITY PERCEPTION AS DEPENDENT VARIABLE ATTRIBUTES AS INDEPENDENT VARIABLE

Arnold Schwartzenegger with Billows light bulbs

Regression Statistics	
Multiple R	0.92124842
R Square	0.84869865
Adjusted R Squ	0.84182131
Standard Error	0.68910608
Observations	70

ANOVA

	df	SS	MS	F	Significance F
Regression	3	175.8032099	58.60107	123.4052	5.21101E-27
Residual	66	31.34123458	0.474867		
Total	69	207.1444444			

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.01678644	0.325919387	0.051505	0.959079
sum short	0.33684688	0.070503494	4.777733	1.03E-05
sum pleas	0.19525915	0.084721507	2.304718	0.024337
sum effic	0.4716071	0.076284793	6.18219	4.47E-08

Arnold Schwartzenegger with Moyers cleaning solution

Regression Statistics	
Multiple R	0.723385639
R Square	0.523286783
Adjusted R Square	0.502255317
Standard Error	0.67443275
Observations	72

ANOVA

	df	SS	MS	F	Significance F
Regression	3	33.95226773	11.31742	24.88114	5.60531E-11
Residual	68	30.93044832	0.45486		
Total	71	64.88271605			

	Coefficients	Standard Error	t Stat	P-value
Intercept	1.384419082	0.619129508	2.236073	0.028632
sum strong	0.373263184	0.100055338	3.730567	0.000392
sum harm	0.376408732	0.085164118	4.419804	3.64E-05
sum dang	0.059184358	0.094041957	0.62934	0.531235

APPENDIX 5B: REGRESSION RESULTS FOR QUALITY PERCEPTION AS DEPENDENT VARIABLE ATTRIBUTES AS INDEPENDENT VARIABLE (continued)

Cal Ripken with Billows light bulbs

Regression Statistics	
Multiple R	0.862834959
R Square	0.744484166
Adjusted R Square	0.733687722
Standard Error	0.703020057
Observations	75

ANOVA

	df	SS	MS	F	Significance F
Regression	3	102.2424921	34.08083	68.95643	5.41256E-21
Residual	71	35.0908412	0.494237		
Total	74	137.3333333			

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.081184719	0.476935173	0.170222	0.86532
sum short	0.100509069	0.073526239	1.366982	0.175944
sum pleas	0.32156393	0.110290027	2.915621	0.004747
sum effic	0.56364846	0.104647562	5.38616	8.87E-07

Cal Ripken with Moyers cleaning solution

Regression Statistics	
Multiple R	0.855243278
R Square	0.731441065
Adjusted R Square	0.720251109
Standard Error	0.826924033
Observations	76

ANOVA

	df	SS	MS	F	Significance F
Regression	3	134.0921817	44.69739	65.36586	1.63962E-20
Residual	72	49.23384165	0.683803		
Total	75	183.3260234			

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.04131745	0.463542034	-0.089134	0.929223
sum strong	0.61449734	0.083833418	7.329981	2.71E-10
sum harm	0.010159901	0.095445073	0.106448	0.915523
sum danger	0.395492665	0.095908362	4.123652	9.87E-05

APPENDIX 5B: REGRESSION RESULTS FOR QUALITY PERCEPTION AS DEPENDENT VARIABLE ATTRIBUTES AS INDEPENDENT VARIABLE

No endorser with billows light bulbs

Regression Statistics	
Multiple R	0.837834869
R Square	0.701967268
Adjusted R Square	0.688211911
Standard Error	0.98033599
Observations	69

ANOVA

	df	SS	MS	F	Significance F
Regression	3	147.1350522	49.04502	51.03228	4.49595E-17
Residual	65	62.46881252	0.961059		
Total	68	209.6038647			

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.303170163	0.5332154	0.56857	0.571607
sum short	0.352016859	0.103453921	3.402644	0.001147
sum pleas	0.088876499	0.090182454	0.985519	0.328024
sum effic	0.475262485	0.111809124	4.250659	6.95E-05

No endorser with Moyers cleaning solution

Regression Statistics	
Multiple R	0.685794159
R Square	0.470313629
Adjusted R Square	0.447283787
Standard Error	1.226809017
Observations	73

ANOVA

	df	SS	MS	F	Significance F
Regression	3	92.20867354	30.73622	20.42192	1.40481E-09
Residual	69	103.8491651	1.50506		
Total	72	196.0578387			

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.805401046	0.702541167	1.146411	0.255585
sum strong	0.545432856	0.121161477	4.501702	2.67E-05
sum harm	0.045185262	0.131707961	0.343072	0.732588
sum danger	0.244334329	0.109585112	2.229631	0.029029

APPENDIX 5C: ANOVA FOR CREDIBILITY AND RELEVANCE MEASURES

Credibility - Billows light bulbs Cal Ripken v. no endorser

SUMMARY

Groups	Count	Sum	Average	Variance
Cal	75	510	6.8	1.855856
None	69	423	6.130435	3.08241

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	16.11141	1	16.11141	6.594337	0.011264	3.907786
Within Groups	346.9372	142	2.44322			
Total	363.0486	143				

Credibility - Moyers cleaning solution Arnold Schwartzenegger v. no endorser

SUMMARY

Groups	Count	Sum	Average	Variance
cred arnie	71	387.3333	5.455399	0.813459
cred none	73	372	5.09589	2.124937

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	4.651975	1	4.651975	3.146557	0.078231
Within Groups	209.9375	142	1.478433		
Total	214.5895	143			

APPENDIX 5C: ANOVA FOR CREDIBILITY AND RELEVANCE MEASURES
(continued)

Reliability - Billows light bulbs Cal Ripken v. no endorser

SUMMARY

Groups	Count	Sum	Average	Variance
cal	75	477	6.36	1.692973
none	69	387	5.608696	3.107701

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	20.28522	1	20.28522	8.557544	0.004007	3.907786
Within Groups	336.6037	142	2.370448			
Total	356.8889	143				

Reliability - Moyers cleaning solution Arnold Schwartzenegger v. no endorser

Groups	Count	Sum	Average	Variance
rel arnie	71	373	5.253521	3.064968
rel none	73	465.3333	6.374429	2.981312

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	45.22293	1	45.22293	14.96184	0.000167
Within Groups	429.2022	142	3.022551		
Total	474.4252	143			

APPENDIX 5D: PERCEPTION OF QUALITY

Perception of Quality - Billows light bulbs Cal Ripken v. no endorser

SUMMARY

Groups	Count	Sum	Average	Variance
Cal	75	510	6.8	1.855856
None	69	423	6.130435	3.08241

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	16.11141	1	16.11141	6.594337	0.011264
Within Groups	346.9372	142	2.44322		
Total	363.0486	143			

Perception of Quality - Moyers cleaning solution Arnold Schwartzenegger v. none

SUMMARY

Groups	Count	Sum	Average	Variance
Qual none	73	444.6667	6.091324	2.723026
Qual Arnie	72	468.6667	6.509259	0.913841

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	6.331476	1	6.331476	3.46976	0.064552
Within Groups	260.9406	143	1.824759		
Total	267.272	144			

APPENDIX 5E: REGRESSION RESLUTS FOR PRICE VARIABLE QUALITY PERCEPTION AS INDEPENDENT VARIABLE

Billows light bulbs with no endorser

Regression Statistics	
Multiple R	0.401168
R Square	0.160936
Adjusted R Square	0.148413
Standard Error	1.969234
Observations	69

ANOVA

	df	SS	MS	F	Significance F
Regression	1	49.83416	49.83416	12.85087	0.000635076
Residual	67	259.818	3.877881		
Total	68	309.6522			

	Coefficients	Standard Err	t Stat	P-value
Intercept	2.358625	0.866897	2.720768	0.00829
X Variable 1	0.4876	0.136018	3.584812	0.000635

Billows light bulbs with an endorser

Regression Statistics	
Multiple R	0.549286
R Square	0.301716
Adjusted R Square	0.296833
Standard Error	1.537672
Observations	145

ANOVA

	df	SS	MS	F	Significance F
Regression	1	146.0928	146.0928	61.78763	8.42064E-13
Residual	143	338.1141	2.364434		
Total	144	484.2069			

	Coefficients	Standard Err	t Stat	P-value
Intercept	1.637432	0.505587	3.238672	0.001493
Qual bil	0.613391	0.078034	7.860511	8.42E-13

APPENDIX 5E: REGRESSION RESLUTS FOR PRICE VARIABLE QUALITY PERCEPTION AS INDEPENDENT VARIABLE (continued)

Billows light bulb- overall

Regression Statistics	
Multiple R	0.494687
R Square	0.244715
Adjusted R Square	0.241152
Standard Error	1.682643
Observations	214

ANOVA

	df	SS	MS	F	Significance F
Regression	1	194.4775	194.4775	68.68874	1.31108E-14
Residual	212	600.2328	2.831287		
Total	213	794.7103			

	Coefficients	standard Err	t Stat	P-value
Intercept	1.892032	0.443188	4.26914	2.96E-05
Qual bil	0.569899	0.068763	8.287867	1.31E-14

Moyers cleaning solution with no endorser

Regression Statistics	
Multiple R	0.604343
R Square	0.36523
Adjusted R Square	0.35629
Standard Error	1.712228
Observations	73

ANOVA

	df	SS	MS	F	Significance F
Regression	1	119.7654	119.7654	40.85154	1.50168E-08
Residual	71	208.1524	2.931724		
Total	72	327.9178			

	Coefficients	standard Err	t Stat	P-value
Intercept	0.105103	0.76057	0.13819	0.890481
Quality	0.780382	0.122096	6.391521	1.5E-08

APPENDIX 5E: REGRESSION RESLUTS FOR PRICE VARIABLE QUALITY PERCEPTION AS INDEPENDENT VARIABLE (continued)

Moyers cleaning solution with an endorser

Regression Statistics	
Multiple R	0.591377
R Square	0.349727
Adjusted R Square	0.345242
Standard Error	1.748672
Observations	147

ANOVA

	df	SS	MS	F	Significance F
Regression	1	238.4613	238.4613	77.98319	3.11001E-15
Residual	145	443.389	3.057855		
Total	146	681.8503			

	Coefficients	Standard Err	t Stat	P-value
Intercept	-0.25567	0.622115	-0.41097	0.681703
sum qual	0.874814	0.099064	8.830809	3.11E-15

Moyers cleaning solution overall

Regression Statistics	
Multiple R	0.595194
R Square	0.354256
Adjusted R Squa	0.351294
Standard Error	1.733073
Observations	220

ANOVA

	df	SS	MS	F	Significance F
Regression	1	359.2095	359.2095	119.5953	1.78067E-22
Residual	218	654.7723	3.003543		
Total	219	1013.982			

	Coefficients	Standard Err	t Stat	P-value
Intercept	-0.11446	0.481243	-0.23785	0.812219
sum qual	0.840286	0.076837	10.93596	1.78E-22

APPENDIX 5F: ANOVA FOR QUALITY PERCEPTION RATING WITH MISMATCHED ENDORCERS

Billows light bulbs Cal Ripken v. Arnold Schwarzenegger

SUMMARY

Groups	Count	Sum	Average	Variance
Arnie	70	399	5.7	3.002093
Cal	75	510	6.8	1.855856

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	43.81034	1	43.81034	18.1866	3.62E-05
Within Groups	344.4778	143	2.408936		
Total	388.2881	144			

Moyers cleaning solution Arnold Schwartzenegger v. Cal Ripken

SUMMARY

Groups	Count	Sum	Average	Variance
Moyer Cal	76	471.6667	6.20614	2.444347
Moyer Arn	72	468.6667	6.509259	0.913841

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	3.397116	1	3.397116	1.998233	0.159611
Within Groups	248.2087	146	1.70006		
Total	251.6059	147			

VITA

Michael Busler, Ph.D.

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September 18, 1949 Philadelphia, PA US Citizen

EDUCATION

1973	Master of Business Administration; Drexel University, Philadelphia, PA
1972	Bachelor of Science, Commerce and Engineering Sciences; Drexel University, Philadelphia, PA

WORK EXPERIENCE

2001 – Present	Rider University, Lawrenceville, NJ Acting Assistant Professor of Management Sciences
2000- 2001	University of Delaware, Newark, DE Instructor in Marketing
1996- 2000	Cabrini College, Radnor, PA Assistant Professor of Finance and Coordinator of Finance Major
1995- 1996	Drexel University, Philadelphia, PA Instructor of Economics
1990 - 1995	Richard Stockton College, Pomona, NJ Instructor in Business Studies
1986-1990	The Busler Group, Inc., Ventnor, NJ President, Real Estate Development and Home Building
1978 - 1986	Montgomery County Community College, Blue Bell, PA Assistant Professor of Economics (tenured)

PUBLICATIONS

"Matching Products With Endorsers: Attractiveness Versus Expertise", with B. Till, 1998, **_Journal of Consumer Marketing_, _Volume 15, Number 6, pp. 576-586_**

"The Match-up Hypothesis: Physical Attractiveness , Expertise, and the Role of Fit on Brand Attitude, Purchase Intent and Brand Beliefs", with B. Till, 2000, **Journal of Advertising,** Vol 29, Issue 3, Fall 2000, pp.1-13.

"The Flat Rate Tax - A Theoretical Justification**" The Proceedings of Pennsylvania Economic Association**, _Cynthia Benzing editor, May, 1996, p 97-107_

"Celebrity Endorsements: The Match-up Hypothesis Re-examined," _with B. Till,_ **Proceedings of the AMA Winter Educators' Conference**, _(1997), p. 108._

"Growth and Taxes: An Endogenous Model", **The Proceedings of the Pennsylvania Economic Association**, _Patrick Litzinger, editor, June 1997, p 15-18_

"The Effect of the Match-up Hypothesis on Consumer Behavior", _presented_
The **Pennsylvania Economic Association** annual meeting, May 28, 1998