Pricing of Conspicuous Goods:
A Competitive Analysis of Social Effects

Wilfred Amaldoss
Sanjay Jain

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Abstract

Social needs play an important role in the purchase of conspicuous goods. In this paper, we extend traditional economic models to accommodate social needs, such as desire for uniqueness and conformism, and examine their implications for pricing conspicuous goods. In the context of a duopoly, we identify the conditions under which the desire for uniqueness can increase demand among some consumers as the price of a product increases. Second, we show that while the desire for uniqueness leads to higher prices and firm profits, a desire for conformity leads to lower prices and profits. Third, we find that consumers purchase high quality products not because of their desire for uniqueness, but despite it. Finally, marketers of conspicuous goods might find it beneficial not to highlight the functional differences among their products, when the need for uniqueness is high. In a laboratory test, we find support for the claim that demand for a product among consumers who desire uniqueness might increase as its price increases.
1 Introduction

Conspicuous goods differ from many frequently purchased goods in an important way: They satisfy not just material needs, but also social needs such as prestige (e.g., Belk 1988, Grubb and Grathwohl 1967). This difference has important implications for how such goods are marketed. Marketing textbooks caution marketers of prestige goods that they should not price their product “too low,” since they could sell less at a lower price (e.g., Boone and Kurtz 1999, Berkowitz et al. 2000, Perreault and McCarthy 2000). A common practice of marketers of conspicuous goods, such as cars, jewelry, perfumes, and watches, is to highlight the exclusivity of their products. For instance, in a study of 2000 randomly selected magazine ads, Pollay (1984) found that uniqueness appeals were used as a central theme in 10% of magazine ads and as a subordinate theme in 23% of ads. Other firms use exclusive distribution channels to restrict the availability of their products. Christian Dior, for example, sued supermarkets for carrying its products because wide availability could hurt the firm (Marketing Week, July 3, 1997). We also see luxury good manufacturers being advised not to sell their products over the internet since it might dilute their image (Marketing, August 24, 2000). Thus, marketers are motivated to maintain a product’s exclusivity in part because they believe that some consumers might find the product less valuable if it becomes widely available.

Prior research has identified the existence of two competing social needs among consumers: a need for uniqueness and a countervailing need for conformity (Brewer 1991, Fromkin and Snyder 1980). When consumers purchase products to satisfy their need for uniqueness, the value of the product increases as its perceived uniqueness increases. In other words, consumers could value a product less when more consumers own it. We see evidence of such behavior even in the case of products like cookies (Worchel, Lee and Adewole 1975). Recent research suggests that the need for uniqueness is an individual-level trait (Tian et. al 2001, Brewer 1991, and Fromkin and Snyder 1980). An important implication of this body of research is that people could potentially choose to buy a different product merely for the sake of being different from other consumers, rather than to display their wealth or social status.

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1 See also Nagel and Holden (2002, p.92), who say that exclusivity adds to the objective value of a product.

2 The need for uniqueness could be influenced by early childhood socialization that emphasizes creativity and individuality. Factors such as family size, order of birth and number of same-sex sibling also seem to influence the strength of this trait (Chrenka 1983).
Another social need that influences the purchase of conspicuous goods is consumers’ desire to conform. Some consumers might value a product more as the number of other consumers who buy the product increases (Ross, Bierbrauer and Hoffman 1976, Jones 1984). We see evidence of conformism in the purchase of books, toys and garments. The need for conformism has also been identified as an individual trait (McGuire 1968).

The focus of behavioral research, which has examined the role of products as a means of self expression, has been on describing the psychological and social underpinnings of consumer behavior, not firm behavior. The phenomenon of conspicuous consumption has significant strategic implications for firm behavior, and also raises some interesting research questions. For instance, marketers of conspicuous goods believe that demand might actually drop if they price their products lower. However, it is not clear under what conditions, if any, this belief is valid. Another prevailing opinion of managers is that exclusivity might enable a firm to earn higher profits. But it is not obvious how consumer desire for uniqueness affects firm profits. In popular magazines like Vogue we see that many advertisements for conspicuous goods, though visually appealing, do not highlight the functional differences of the focal products. Indeed, in an empirical study of cosmetics, Chao and Shor (1998) found that conspicuous cosmetics are less differentiated. This raises yet another theoretical question: How does functional differentiation of conspicuous goods affect firms’ prices and profits?

**Overview.** In this paper we develop an analytical model which incorporates social influences on consumer behavior, and then examine its implications for firms’ prices, profits and market shares. The model extends the traditional economic model of consumer decision making by accommodating consumer desire for uniqueness as well as conformity (see Brewer 1991, Fromkin and Synder 1980). In our model, two firms are competing to cater to two segments of consumers. One segment desires uniqueness, and therefore its value for a product decreases as the number of people who buy the product grows. We label the consumers in this segment as *snobs* (see also Grossman and Shapiro 1988). The other segment desires conformity, and therefore its value for a product increases as the number of people who buy the product increases. We refer to the consumers in this segment as *conformists*. Our

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3For example, Cox and Bauer (1964) suggest that people with low self esteem comply with others’ suggestion to avoid social disapproval. The innate desire to conform is often used to explain the persistence of social customs. Similar arguments are also advanced to explain participation in trade unions (Naylor and Cripps 1993), and fair wages (Romer 1984). Also, see Frank (1985) for a discussion of the socio-biological bases of intrinsic human needs such as desire for uniqueness and conformity.
theoretical analysis provides some useful insights on conspicuous consumption. First, we find that indeed more snobs may buy a product when its price rises. However, this can only happen when a segment of consumers are (weakly) conformists. Our analysis also provides some support for the notion that increased desire for uniqueness leads to higher prices and firm profits. We find that, in general, snobs buy a higher quality product despite their desire for uniqueness and not because of it. Further, firms producing conspicuous products may sometimes find it beneficial to downplay the functional differences between their products, since highlighting functional differences can lead to increased price competition and a decline in firm profits. In the tradition of the experimental economics literature, we subject our duopoly model to a laboratory test (e.g., Smith 1982, Ghosh and John 2000, Amaldoss et al. 2000, Srivastava et al. 2000). The experimental results provide strong support for a key prediction of the model: more snobs buy a product as its price increases.

**Related Literature.** Our work is related to the marketing literature on the role of products in expressing self (Grubb and Grathwohl 1967, Belk 1988, Snyder 1992, Simonson and Nowlis 2000). The work is also related to economics literature on wealth signaling, where consumers purchase products in order to indicate their wealth or social status. Bernheim (1994), for example, showed that when status is sufficiently important relative to intrinsic utility many individuals conform to a single standard of behavior, despite heterogeneous underlying preferences. Pesendorfer (1995) showed that if fashion designs helped people signal their social status to potential dates then it could lead to fashion cycles. In his model, an innovative fashion design becomes a new signaling device and thereby undermines the value of older and more common design. Bagwell and Bernheim (1996) and Corneo and Jeanne (1997) have argued that conspicuous consumption is a consequence of consumers’ desire to signal their wealth. For example, some people might buy a Ferrari merely because many others cannot afford such an expensive car. Thus in the signaling literature, consumers could use their purchase decisions to signal a latent variable, such as wealth or status, which cannot be directly observed. The behavioral literature, however, argues that social needs such as desire for uniqueness and conformity are traits which need not necessarily be related to income levels or social status (see Tian et. al. 2001 and Bearden et. al 1989). Consistent with this view, we incorporate social influences directly within the utility formulation as consumption externalities. In the signaling literature, however, consumer utility is increased only if a person successfully signals her wealth (or other latent variable). Thus, our model
formulation is very different from the signaling models. Further, in contrast to our model, the wealth signaling framework cannot account for an upward-sloping demand curve for snobs. The intuition for this result is that if more consumers buy a product then its signal value must decrease for snobs. Consequently, the firm needs to decrease price to increase demand, implying a downward sloping demand curve (Corneo and Jeanne 1997).

There is also a body of research in economics which has attempted to incorporate social aspects into formal economic analysis. Liebenstein (1950) drew the attention of economists to the importance of social factors in consumption (see also Veblen 1899). Becker (1991) used conformism to explain why similar restaurants might eventually experience vastly different sales patterns. He showed that in equilibrium the demand curve for conformists could be upward-sloping, though the equilibrium is neither unique nor stable. Another stream of research which studies consumption externality is the research on network goods (see for example, Besen and Farrell 1994, Katz and Shapiro 1994). However, the motivation for consumption externality in this literature is technological, rather than social. Our model is also related to the literature on congestion, where an increase in the number of users has an indirect adverse effect on the utility of consumers (e.g., Naor 1969, Lippman and Stidham 1977, Mendelson and Whang 1990). The primary focus of this stream of research is on designing socially optimal systems to reduce the negative impact of congestion effects. In our model we include a consumer segment which experiences a positive externality and another segment which experiences a negative externality. It is the coexistence of both of these externalities that leads to many of our results which cannot be observed in the network externalities research and congestion effects literature, where only one type of externality is studied.4

**Contribution.** Our research makes some useful contributions to the literature on conspicuous consumption. First, unlike the behavioral literature in marketing, our focus is on developing a formal utility-based model to examine the implications of social influences on consumer demand and firms’ prices and profits. Our work adds to the stream of research that attempts to integrate well-established psychological principles into economic analysis with the goal of improving psychological realism in economic models (see Rabin 2002 for a review). Second, in contrast to the signaling models in economics, we model snobs and conformists using a consumption externality. Third, we investigate how equilibrium prices and

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4Proposition 1 establishes the presence of a stable and unique upward-sloping demand curve for the snobs. In Corollary 1, we show that this result requires the presence of both consumer segments.
profits are sensitive to the degree of conformism and snobbishness that exist in the market. Fourth, we highlight the impact of product differentiation on equilibrium prices and profits. Finally, we provide empirical support for some of the predictions of our duopoly model.

In the next section we describe our model of conspicuous consumption. §3 discusses the empirical investigation. Finally, we conclude the paper in §4.

2 Model

Consider a duopoly where firms are located at the opposite ends of a Hotelling line, with firm 1 positioned at 0 and firm 2 at 1. As discussed earlier, the market is comprised of two types of consumers: snobs and conformists.

**Snobs:** These consumers desire uniqueness and thus their valuation for a product decreases as more people buy the product. They form a fraction \( \beta \) of the consumers in the market. A snob located at \( \theta \) on the Hotelling line derives some (expected) indirect utility from purchasing product 1, which is given by:

\[
U_s(z^e_1, p_1) = \omega_s v_1 - p_1 - \theta t_s - \lambda_s z^e_1,
\]

where \( v_1 \) is the base quality level for firm 1’s product, \( p_1 \) is the price for product 1, and \( z^e_1 \) is the expected total number of buyers for product 1. The term \( \omega_s \) captures the extent to which snobs are sensitive to quality, while \( t_s \) represents the sensitivity of snobs to product characteristics (Grossman and Shapiro 1984). The degree to which the consumers desire uniqueness is captured in \( \lambda_s \geq 0 \). As \( \lambda_s \) increases, snobs value uniqueness more.

Similarly, the indirect utility derived by the consumer from buying product 2 is given by:

\[
U_s(z^e_2, p_2) = \omega_s v_2 - p_2 - (1 - \theta)t_s - \lambda_s z^e_2
\]

Denote the value distribution for snobs by a continuous distribution \( F_s(\cdot) \) with a corresponding pdf \( f_s(\cdot) \). Assume that the market is fully covered. Furthermore, each consumer buys at most one unit of the conspicuous good. This assumption is tenable for conspicuous goods such as cars. Therefore, the number of snobs who will buy product 1 is:

\[
x_1 = \beta F_s(\theta_s(z^e_1))
\]

\(^5\)We assume that snob effect is linear in the total sales for analytical tractability and because it ensures the existence of a unique rational expectations equilibrium. Similar linearity assumptions are made in models of network effects (see, for example, Farrell and Saloner 1992.)
where $\theta_s(z_1^e)$ is the location of the snob who is indifferent between the two products for a given sales expectation $z_1^e$. $\theta_s(z_1^e)$, in turn, is given by:

$$\theta_s(z_1^e) = \frac{t_s + \omega_s(v_1 - v_2) + (p_2 - p_1) + \lambda_s(1 - 2z_1^e)}{2t_s} \tag{4}$$

**Conformists:** The proportion of conformists in the population is $(1 - \beta)$. These consumers value the product more when more consumers buy the product. Thus, the indirect utility derived from product 1 by a conformist located at $\theta$ is given by:

$$U_c(z_1^e, p_1) = \omega_c v_1 - p_1 - \theta t_c + \lambda_c z_1^e \tag{5}$$

where $v_1$ is the base quality level, $p_1$ is the price for product 1, and $z_1^e$ is the expected number of buyers for product 1. The interpretations of $\omega_c$, $t_c$, and $\lambda_c$ are parallel to those discussed for snobs. The terms $\omega_c$ and $t_c$ represent the sensitivity of conformists to the quality and horizontal differentiation of a product, respectively, whereas $\lambda_c \ (\lambda_c \geq 0)$ captures the intensity of desire for conformity. Similarly, the utility of buying product 2 is given by:

$$U_c(z_2^e, p_2) = \omega_c v_2 - p_2 - (1 - \theta)t_c + \lambda_c z_2^e \tag{6}$$

Assume that the value distribution for conformists is given by a continuous distribution $F_c(\cdot)$ with a corresponding pdf $f_c(\cdot)$, and that the full market is covered. Then, the number of conformists who will buy product 1 is given by:

$$y_1 = (1 - \beta)F_c(\theta_c(z_1^e)) \tag{7}$$

where $\theta_c(z_1^e)$ is the location of the conformist who is indifferent between the two products for a given expectation $z_1^e$, and $\theta_c(z_1^e)$ is given by:

$$\theta_c(z_1^e) = \frac{t_c + \omega_c(v_1 - v_2) + (p_2 - p_1) - \lambda_c(1 - 2z_1^e)}{2t_c} \tag{8}$$

Consistent with prior literature, we assume that consumer expectations are rational, implying that they are correct in equilibrium (see for example Becker 1991, Katz and Shapiro 1985, Rajiv, Dutta and Dhar 2002). Therefore, we assume that:

$$z_1 = x_1 + y_1 = z_1^e \tag{9}$$

This parsimonious model captures some important differences between snobs and conformists. They could differ in their sensitivity to vertical differentiation ($\omega_c \neq \omega_s$) and horizontal differentiation ($t_c \neq t_s$). Also, their value distribution could be different ($F_s$ and $F_c$). Thus, this
model allows us to investigate how changes in these characteristics of snobs and conformists might impact their behavior and firm’s strategies.

It is useful to note another important feature of our model. In our model, consumers care about the total sales rather than the identity of the buyers. This formulation captures the spirit of consumer desire for uniqueness and conformity as discussed in the behavioral literature. In some contexts, however, it is possible that consumers care about not only the number of consumers who buy the product, but also the identity of the buyers. For example, some consumers could experience a sharper drop in utility if members outside their group buy the product, rather than members of their own group. Such a formulation is more consistent with the notion of reference groups, which is not the focus of our paper.\(^6\)

Now using (3), (7) and (9), we derive the rational expectations equilibrium. The relevant equation is:

\[
\Omega(z_1) = \beta F_s \left( \frac{t_s + \omega_s(v_1 - v_2) + (p_2 - p_1) + \lambda_s(1 - 2z_1)}{2t_s} \right) \\
+ (1 - \beta) F_c \left( \frac{t_c + \omega_c(v_1 - v_2) + (p_2 - p_1) - \lambda_c(1 - 2z_1)}{2t_c} \right) - z_1 = 0 \quad (10)
\]

Equation 10 implicitly describes the demand \(z_1(p_1, p_2)\) under the rational expectations condition. The following lemma establishes the condition under which there exists a unique rational expectations equilibrium for any price pairs \((p_1, p_2)\)\(^7\).

**Lemma 1** There exists a rational expectations equilibrium for any given pair of prices \((p_1, p_2)\). The equilibrium is unique if and only if:

\[
-\frac{\beta \lambda_s f_s(\theta_s)}{t_s} + \frac{(1 - \beta) \lambda_c f_c(\theta_c)}{t_c} - 1 < 0 \quad (11)
\]

at the equilibrium point where:

\[
\theta_s = \frac{t_s + \omega_s(v_1 - v_2) + (p_2 - p_1) + \lambda_s(1 - 2z_1)}{2t_s} \quad (12)
\]

\[
\theta_c = \frac{t_c + \omega_c(v_1 - v_2) + (p_2 - p_1) - \lambda_c(1 - 2z_1)}{2t_c} \quad (13)
\]

\(^6\)This effect could be represented by a function \(g(x^*_1, y^*_1)\) where \(\frac{\partial g(\cdot)}{\partial x^*_1} < 0, \frac{\partial g(\cdot)}{\partial y^*_1} < 0\), while allowing for the possibility that the effect sizes could be different. Nevertheless, many of the results of our paper continue to hold in this alternate framework.

\(^7\)See also Karni and Levin (1994) for existence proof for a game with only conformism effects.
We focus on interior solutions. Proofs are provided in the Technical Appendix.\textsuperscript{8} Condition (11) suggests that there is a unique rational expectations equilibrium if the net conformism effect, which is \((1 - \beta)\lambda_c f_c/t_c\), is small. It is easy to see that the net conformism effect will become small if the proportion of snobs in the population \((\beta)\) and the horizontal differentiation \((t_c)\) increase. The net conformism effect would also decrease if \(\lambda_c\) and \(f_c(\cdot)\) reduce.\textsuperscript{9} Lemma 1 raises a natural question: What would happen if the net conformism effect were large? In such a case, even a small change in price could induce a bandwagon effect, and we would have multiple Nash equilibria.\textsuperscript{10} In the rest of the paper, we will assume that (11) holds and consequently we have a unique rational expectations equilibrium.

**Effect of Price on Demand**

Now let us examine how prices impact the demand for the two products. We have:

**Proposition 1** If (11) is satisfied, then more snobs buy product 1 as \(p_1\) increases or \(p_2\) decreases when:

\[
\lambda_s > \frac{t_c}{(1 - \beta)f_c} - \lambda_c = \lambda_s^* \tag{14}
\]

However, the total demand and the demand from conformists for product 1 always declines as \(p_1\) increases or \(p_2\) decreases.

This proposition clarifies that, when the snobbish effect is large enough, a product can become more attractive to a segment of the population as its price increases. More specifically, a firm’s own price effect becomes positive and its cross-price effect turns negative for snobs. Note that this unusual demand pattern is confined to snobs. Conformists and the overall market are likely to buy less as price rises.

**Intuition for the Result.** To better appreciate the intuition for this key result, we first consider a market comprised of either only snobs or conformists, and later study the implications of snobs and conformists coexisting in a market.

\textsuperscript{8}The Technical Appendix is available from the authors and can be downloaded from http://www.rhsmith.umd.edu/marketing/faculty/jain/pricing_conspicuous_goods_appendix.pdf.

\textsuperscript{9}For example, if \(f_c(\cdot)\) is uniform, then the conformism effect decreases when the range of the uniform distribution increases.

\textsuperscript{10}If this condition is not satisfied, then it is possible to observe corner solutions in which there are asymmetric solutions even when the firms are completely symmetric a priori. For example, consider the case when the market consists of only conformists, i.e., \(\beta = 0\). Also assume that \(t_c = 1\) and \(f_c\) is uniform (0,1) and prices are the same. In this case, if \(\lambda_c > 1\) then the condition in the Lemma is violated. In such a situation, we can only have asymmetric solutions where one firm has the full market and the other firm has zero sales.
Market comprised of only snobs or conformists. If a market is comprised of either only snobs or conformists, then we would not observe the unusual demand pattern. This is summarized in the following corollary.

**Corollary 1** If $\beta = 0$ or $\beta = 1$ then fewer consumers purchase product 1 as $p_1$ increases or $p_2$ decreases.

The corollary shows that fewer snobs buy as price increases, if the market consists of only snobs. *Thus, it is the presence of both groups in the market which makes it possible for us to observe the phenomenon of more snobs demanding a product when the price increases.*

To obtain a better grasp of the rationale for this result, we first analyze a market comprised of only snobs. Let us see how a unit change in price affects a consumer’s expected utility from buying product 1. We have:

\[
\frac{\partial U}{\partial p_1} = -1 - \lambda_s \frac{\partial x_1^e}{\partial p_1}
\]

(15)

Note that if the consumer expects $\partial x_1^e/\partial p_1$ to be negative, then for a sufficiently large $\lambda_s$ it is possible for the consumer’s utility to increase with price. This outcome, however, implies that as the price increases, the total number of consumers who will buy the product will increase - thus giving rise to an upward-sloping demand curve (i.e., $\frac{\partial x_1}{\partial p_1} > 0$). Such a reasoning could potentially form the basis of naïve intuition. Note, however, that for this intuition to be valid it is necessary for the consumer expect to the demand curve to be downward-sloping (i.e., $\frac{\partial x_1^e}{\partial p_1} < 0$). It is natural indeed to form such an expectation based on everyday observations of the demand pattern of fast moving consumer goods.

Next we examine the implications of the consumer forming a rational expectation. If utility increases with price, then demand is likely to grow with price. But from (15) we can see that if $\partial x_1^e/\partial p > 0$, then consumer utility must be decreasing with price, irrespective of the size of $\lambda_s$. Thus, if consumers expect an upward-sloping demand curve, the realized demand curve will be downward-sloping. Hence, such an expectation is not rational. The only situation which is consistent with the rational expectations condition is that the expected demand curve is downward-sloping and the consumer’s utility is decreasing in price.

A similar argument shows that if the market consists of only conformists and the conformist effect is bounded by (11), then the demand for a product would decrease as its price increases.
Market comprised of both snobs and conformists. Now we examine why the presence of both conformists and snobs is critical for an upward sloping demand curve. First consider a consumer who is a snob. The change in expected utility of such a consumer, when price changes, is given by:

\[
\frac{\partial U_s}{\partial p_1} = -1 - \lambda_s \frac{\partial}{\partial p_1} (x_1^e + y_1^e)
\]

If the consumer expects the total demand curve to be downward-sloping and \(\lambda_s\) is large enough, then the consumer’s expected utility is increasing in price. Consequently, under a rational expectations equilibrium, we could observe an upward-sloping demand curve for the snobs. Note that it is the presence of conformists that makes it possible for us to observe an upward-sloping demand curve for snobs. This is because the presence of conformists allows for the possibility that the total demand might fall when price rises. This drop in demand makes the product attractive to the snobs. Then for a sufficiently large \(\lambda_s\), more snobs are likely to buy the product as price increases.

**Discussion** Proposition 1 clarifies that an upward-sloping demand curve for snobs is likely to be observed only when the market includes a group of consumers who are (weakly) conformists.\(^{11}\) This result is not dependent on either the differences in quality between the two products or the fact that different segments may value quality differently. Rather, it is the direct consequence of social influences on consumer purchase decisions.\(^{12}\) Note that our result contradicts the claim of Liebenstein (1950) who argues that the demand curve for snobs will always be downward-sloping. Corroborating evidence for our results is seen in the study of Chao and Schor (1998). They find that the overall demand curve for conspicuous items like women’s cosmetics decreases with price. However, they find that the demand for cosmetics like lipsticks, mascara, and eyeshadow increases with price for college educated women. To the extent that these women are more likely to desire exclusivity, these results are consistent with our theoretical results. Interestingly, the demand curve for women who have not graduated from college is downward-sloping as we would expect. Finally, they also find that non-conspicuous products like facial cleanser exhibit downward-sloping demand curves.

\(^{11}\)It is useful to note that the result does not require the presence of conformists. In particular, the demand curve for snobs could be upward-sloping even if \(\lambda_c = 0\), i.e., there exists a segment of consumers whose utility is unaffected by the choices of other consumers.

\(^{12}\)Also, the results do not depend on the full coverage assumption, since the arguments used to provide an intuition for the results would apply even if the full market were not covered as in a monopoly setting. Indeed, an analogous result can be obtained in the monopoly case (see Amaldoss and Jain 2004 for a formal proof of the monopoly case).
for all segments. This is also consistent with our results. Later, in the empirical section, we assess the descriptive validity of Proposition 1 in a controlled laboratory setting.

**Effect of Snobbishness and Conformism**

Now we explore how $\lambda_s$ and $\lambda_c$ affect equilibrium prices and profits. For analytical tractability, we assume that $f_s$ and $f_c$ are uniform. Though this assumption guarantees the existence of a unique Nash equilibrium in prices, it is not a necessary condition. We also assume that the marginal costs for both products are the same and equate them to zero. Note that in our model, $f_s$ and $f_c$ could be different, implying that snobs could have a higher mean valuation for the products than conformists and vice-versa. Also, as before, snobs and conformists could differ in their sensitivity to quality and horizontal product differentiation.

With this setup, we proceed to examine how the equilibrium profits and prices are affected by snobbishness and conformity. We have:

**Proposition 2** The equilibrium prices and profits are decreasing in conformity and increasing in snobbishness.

It is commonly believed that exclusive products are likely to be more expensive. Our results establish the conditions under which this common belief might hold. We find that snobbish behavior leads to higher profits. This result provides some justification for the use of marketing strategies which are intended to create an exclusive image for a product. As we discussed earlier, the use of uniqueness appeals in advertising is quite common (Pollay 1984).

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13For example, the price coefficient for lipstick is -0.19 for women with a high school diploma. But for women with a college degree, the price coefficient is +0.117. However, the overall price coefficient is -0.157. Chao and Schor (1998) also find that the correlation between quality and price in this category is zero. Therefore, price could not be a credible signal of quality in this case. Similar results were also observed in the case of mascara and eyeshadow.

14We derived Proposition 1 using the implicit function theorem (which requires local differentiability). The continuity assumptions were useful to prove the uniqueness and existence of rational expectations equilibrium. But as our discussion of the intuition using equation 15 shows, the proof would go through even if $F_s(\cdot)$ were not continuous. Also, it is easy to see that the arguments would hold even if demand were discrete. For example, in the empirical section we consider a discrete version of this model.

15For example, a weaker condition which ensures that the solutions are unique and stable is that $|\partial^2 \Pi_i / \partial p_i^2| > |\partial^2 \Pi_i / \partial p_i \partial p_j|$ and $\partial^2 \Pi_i / \partial p_i^2 < 0$. Intuitively, these conditions require that the profit functions are concave and that own price effects are stronger than cross price effects. Such conditions on the reduced form profit functions hold for a wide variety of models.

16We relax this condition later.
The reason for this result can be understood by noting how conformity and snobbishness change the complexion of competition. Consider the impact of conformity. As the number of consumers who buy product 1 grows, the value of the product increases for the conformists and therefore the relative value of product 2 decreases. This implies that a unit reduction in price by firm 1 affects its total demand in two ways. First, the price reduction makes firm 1’s product relatively more attractive than firm 2’s product, and so the demand for product 1 increases. Second, as the consumers can rationally expect the demand for product 1 to increase, the value of the product for the conformists increases, and therefore they find it even more attractive to buy product 1. Thus, as the degree of conformity increases, firms are lured to cut prices. The ensuing price competition causes the equilibrium prices to drop.

Next consider the case when the degree of snobbishness in the market increases. Now if firm 1 decreases its prices, it expects to get more consumers. However, this increase in demand reduces the value of the product for the snobs, and they are less likely to buy the product. Therefore, as the degree of snobbishness increases, reducing prices becomes less attractive to both the firms. The consequent reduction in price competition helps firms to charge higher prices and make more profits.\(^{17}\)

**Effect of Quality Differences**

Shifting focus to asymmetric firms, we examine the impact of snobbishness and conformism on firms producing products with different levels of quality. Without loss in generality, we assume that the base quality of product 2 is better than that of product 1 \((v_1 < v_2)\). First, we will consider the case when both snobs and followers value quality equally \((\omega_s = \omega_c)\) and the marginal costs of the two products are the same \((c_1 = c_2)\). Later, we will relax these conditions. We have:

**Proposition 3.1** If \(v_1 < v_2\) and \(\omega_s = \omega_c\), then:

\(a\) The firm producing the high quality product charges a higher price and has a larger total market share. Furthermore, as \(\lambda_c\) increases (or \(\lambda_s\) decreases) the higher quality product’s market share increases.

\(^{17}\) Alternatively, we can say that snobbishness reduces price elasticity and thereby leads firms to prefer margins over market share. Conversely, conformism increases price elasticity. Since prices are strategic complements in a competitive setting, snobbishness increases the tendency to “collude” while conformism increases the tendency to “compete.” Thus, snobbishness leads to higher prices and profits while conformism has the opposite effect. We thank an anonymous reviewer for suggesting this intuition.
(b) Among conformists, the high quality product has a larger market share as compared to the low quality product.

(c) Among snobs, if $\lambda_s > \lambda_s^*$ where $\lambda_s^*$ is defined in (14) then the high quality product has a lower market share as compared to the low quality product.

The first part of the result shows that the conformism increases the market share for high quality product and consequently reduces the market share for the lower quality product. In the absence of social effects, the higher quality product would have a higher market share. Thus, conformism exacerbates the impact of quality on market share differences. Conversely, snobbishness decreases the impact of quality on differences in market shares between products. This is because snobbishness motivates the high quality product manufacturer to raise prices rather than go after market share.

The last part of the result shows that if snobbishness is sufficiently large, then a majority of the snobs might buy the low quality product! It is useful to note that in our model, ceteris paribus snobs prefer high quality product to low quality products. In fact, all consumers prefer higher quality products. Thus as a product becomes more attractive due to its improved quality, the snobs (correctly) expect that more consumers will buy the product. Consequently, the high quality product becomes less attractive to snobs. This result shows that snobs may indeed buy a lower quality product to differentiate themselves from others.

It is also important to note that the results do not suggest that snobs have a tendency to buy lower priced products. To better appreciate this point, consider the case where both firms have products of same quality but one firm charges a higher price (possibly due to the fact that it has higher costs). In this case, if $\lambda_s > \lambda_s^*$ then from Proposition 2, we know that snobs have an upward sloping demand curve. Consequently, snobs are more likely to buy the higher priced product due to their snobbishness. Thus, in general when snobbishness is large, snobs prefer the higher priced product. Proposition 3.1 clarifies that, however, if the price differences are purely due to differences in quality and both groups value quality equally then this result does not hold. This is because while high prices tend to make the product attractive to snobs (due to its negative impact on total demand); higher quality tends to decrease attractiveness to snobs (since it leads to an increase in total market demand). Thus, if the price differences are purely due to quality differentials and both groups value quality equally, the quality effect overwhelms the price effect and more snobs purchase the low quality product when the snob effect is large.
Given the counterintuitive nature of this proposition, we explore the conditions under which it might be reversed. Note that Proposition 3.1 assumes that the snobs and conformists value quality equally and that the costs for each firm are the same even though they have different qualities. Therefore, we first examine whether demand side effects, such as differences in consumer valuation for quality, can reverse the result. Then we investigate whether supply side effects, such as differences in manufacturing costs, could potentially change our results.

**Proposition 3.2** If $v_1 < v_2$ and $\omega_s > \omega_c$, then for sufficiently low values of $\lambda_c$ and $\lambda_s$ and high values of $\omega_s$, we find that the high quality firm has a lower market share among the conformists and a higher market share among the snobs.

This proposition shows that if the social effects of consumption are not too strong and snobs have a strong preference for quality, then most of the snobs would prefer to buy the higher quality product at a higher price. On the other hand, the conformists might buy the lower quality product at a lower price. The intuition for this finding is that, if snobs value quality highly, they would be willing to pay such a high price for the product that the product would become unattractive to the conformists who value quality less.

Turning attention to supply side factors, we consider the case where the costs for the two products are different. In particular, we assume that the marginal cost for producing a product of quality $v$ is given by $c(v)$ where $c'(\cdot) \geq 0$. Also, the fixed costs for producing a product of quality $v$ is given by $C(v)$ with $C'(\cdot) \geq 0$. These assumptions reflect the notion that it costs more to produce a higher quality product. We have:

**Proposition 3.3** If $v_1 < v_2$ and $\omega_s = \omega_c = \omega$, then the high quality firm has a smaller market share among snobs and a larger market share among the conformists if $\lambda_s > \lambda^*_s$, as long as $\omega \geq c'(v_1)$. If $\omega < c'(v_1)$ and $\lambda_s > \lambda^*_s$, then the higher quality firm has a higher market share among snobs and a lower market share among the conformists.

Note that in Proposition 3.1 $c'(\cdot) = 0$. The above claim clarifies that the results of Proposition 3.1 would be reversed by cost effects only under the rather strong condition that the marginal costs of quality are higher than the marginal value of quality to the consumer. To the extent that this condition is unlikely to be satisfied, this proposition strengthens the claim of Proposition 3.1.\(^{18}\)

\(^{18}\)To see why this condition is too strong, consider the case when $c'(v_1) > \omega$. It can then be shown that firm 1 can benefit by choosing a lower quality. We formally show this in the Appendix.
It is commonly believed that snobs tend to buy high quality products at high prices. Propositions 3.1, 3.2 and 3.3 provide a useful clarification of the theoretical basis for such a behavior. We are likely to observe such behavior when snobs value quality much more than others. In reality, it is quite likely that \( \omega_s \) is higher than \( \omega_c \) in many contexts. So we might often see snobs buying high quality products at high prices. It is useful to note that our results suggest that snobs purchase high quality products despite snobbishness and not because of it.

Another interesting question is: How does sensitivity to product quality, either among snobs or conformists, affects firms’ profits? As expected, we find that a firm with a quality advantage benefits when consumers become more sensitive to quality. More specifically, if \( v_1 < v_2 \), then as \( \omega_1 \) or \( \omega_2 \) increases the profits of firm 1 decrease and the profits of firm 2 increase. We prove this claim in the appendix.

**Effect of Sensitivity to Horizontal Product Differentiation**

We first study a symmetric case \((v_1 = v_2)\), and then examine an asymmetric case \((v_1 < v_2)\). We have:

**Proposition 4**

a. If \( v_1 = v_2 \), then as \( t_c \) increases the prices and profits of both the firms increase. However, when \( t_s \) increases, prices and profits increase if \( \lambda_s < \lambda_s^* \), where \( \lambda_s^* \) is defined in (14); and prices and profits decrease otherwise.

b. If \( v_1 < v_2 \) and \( \omega_s = \omega_c \) then as \( t_c \) increases the profits of firm 1 increase. But when \( t_s \) increases, the prices and profits of firm 1 decrease if \( \lambda_s > \lambda_s^* \).

The first part of Proposition 4a is intuitive. Note that as \( t_c \) increases, the relative importance of the conformism decreases, since consumers care more about the product fit. Consequently, firms have less of an incentive to reduce prices, leading to reduced price competition. Thus, as \( t_c \) increases, both firms charge higher prices and make higher profits.

Surprisingly, however, this result does not always hold for the case of snobs. As the second part of the Proposition 4a implies, when the snob effect is large enough, an increase in \( t_s \) can actually reduce prices and profits. To understand this result, first note that under the condition specified in the proposition, the demand curve for snobs is upward-sloping. Thus, as price increases, the demand for the product among snobs increases. As \( t_s \) increases, the
relative importance of the snob effect decreases and consumers are less willing to switch to the higher priced product. In other words, $t_s$ attenuates the effect of snobbishness. So an increase in $t_s$ intensifies the price competition if the snobbishness is large enough. Consequently, in such a case both firms charge lower prices and make lower profits.

The parameter $t_i$ can be interpreted as the degree of perceived functional differences between the products (see Iyer and Soberman 2000). Thus, as $t_i$ increases the perceived functional differences between products increase.\(^\text{19}\) Hence, the above proposition implies that while promoting conspicuous goods to snobs, managers should be cautious in stressing functional differences between the products. A more profitable strategy may be to promote the scarcity of their products instead of focusing on product differences vis-à-vis the competition.\(^\text{20}\) This is consistent with the observed advertising for goods ranging from perfumes to luxury cars.

Proposition 4b clarifies that, when firms are asymmetric, the results of Proposition 4a are applicable only to the weaker firm, and not necessarily to the stronger firm. When consumers care more about horizontal product differentiation, it normally softens price competition. This reduction in price competition is more likely to help the firm with a quality disadvantage. Indeed, this is what we observe when $t_c$ increases. As in Proposition 4a, the effect of $t_s$ on the weaker firm’s profits depends on the level of snobbishness.

However, the results of Proposition 4a are not always applicable to the stronger firm. On one hand, an increase in perceived differentiation can mitigate price competition. On the other hand, it reduces the ability of the stronger firm to leverage its quality advantage. Therefore, the effects of the differentiation parameters on the prices and profits of the stronger firm are ambiguous.

**Discussion.** Our model incorporates social effects in a mixed vertical-horizontal differentiation model. We model the social effects on the vertical dimension analogous to the quality variable. Note, however, that unlike quality, which is product centered, our modeling of social effects is consumer-centered in that the impact of this variable is dependent on the actions of other consumers. It is natural then to ask the question: How does consumer desire

\(^\text{19}\)To see this, note that in the absence of price differences and social considerations, as $t$ increases, a consumer’s strength of preference for the product that is closer to his ideal point increases. Therefore, consumers find it more difficult to switch from their preferred product as $t$ increases. In other words, as $t$ increases the degree of perceived functional differences between two products increases.

\(^\text{20}\)It is important to note that uniqueness claims are consumer centered in that they imply or claim that only a few consumers own this product. In contrast, differentiation claims are competition centered in that they show how the product differs from the other product(s) that the competition offers.
for uniqueness and conformism affect the basic non-social foundation of the model?

We find that in the symmetric case, social effects change the prices charged by the firm. In particular, conformism leads to lower prices and snobbishness induces higher prices. Yet, consumer choices remain unaffected by the social effects. However, Proposition 3 shows that when firms are asymmetric in terms of quality, then social effects change not only the prices but also consumer choices and the market share of the firms. In particular, if consumers value quality equally and the cost asymmetries are not too high, then the snob effect tends to decrease the market share of the high quality firm and the conformist effect has the opposite effect. In other words, in such situations, social effects lead some snobs to trade down and buy a lower quality product which they would not have done if social effects were absent. If the snob effect is large enough, then more snobs may buy the lower quality product than the high quality product. This effect can be counteracted if snobs value quality highly or if the marginal costs of quality is too high. Overall, the results in Propositions 2 and 3 show that social effects distort both the prices and the market shares of firms.

Proposition 4 examines how a change in the relative importance of horizontal differentiation affects firms’ prices and profits. We find that in the absence of social effects, stronger horizontal differentiation would benefit the lower quality firm in general by making quality less important to consumers and thereby improving the firm’s competitive position relative to its high quality competitor. However, this result does not hold when the snob effects are large. We find that the presence of large snob effects can reverse the results for the snob segment. In particular, if the snob effect is large, then an increase in the horizontal differentiation in the snob segment leads to a reduction in prices and profits for the weaker firm. Thus, these results again show that the presence of social effects can fundamentally change both firm strategies and consumer choices.

3 Empirical Investigation

The theoretical analysis makes several important predictions. The goal of the empirical analysis, however, is modest. We focus on testing the descriptive power of Proposition 1 which suggests that snobs might buy more as price increases. Note that the behavioral implications of Proposition 1 form the building blocks for the other theoretical propositions as well. In the tradition of experimental economics research, our experiment attempts to simulate the model structure without controlling for the behavioral assumptions about economic agents.
such as the ability to form rational expectations (e.g., Smith 1982, 1988 and 1989; Amaldoss, Meyer, Raju and Rapoport 2000; Srivastava, Chakravarti and Rapoport 2000). Indeed, prior research comparing forecasts of stochastic variables against actual outcomes suggests that people are poor at forming rational expectations (e.g., Schmalansee 1976, Garner 1982, Williams 1987).

3.1 Empirical Model

The theoretical model assumes a continuous value distribution. It is, however, difficult to validate such a model in a laboratory setting with a small sample of subjects. Further, the analytical results do not crucially depend on the continuity assumption, as can be seen in the discussion of the intuition for the results and in footnote 14. Therefore, we use a discrete distribution of valuations, such that the model can be tested using a sample of twenty subjects. As expected, the results using this discrete distribution are similar to those for a continuous distribution.

In keeping with the tradition in experimental economics, we named the two types of buyers Type A and Type B buyers, rather than as snobs and conformists, so that the behavior of subjects will be purely guided by the negative and positive externalities captured in our model. Table 1 presents the distribution of valuations for ten snobs (labeled Type A buyers in our experiment) and ten conformists (Type B buyers in our experiment). We used $\lambda_s = 0.5$ and $\lambda_c = 0.6$. The resulting equilibrium demands for the snobs, the conformists, and the total market are shown in Figure 1. We see that the demand curve for snobs is (weakly) upward-sloping, while it is (weakly) downward sloping for conformists and the total market.

Subjects. Forty business school students were recruited for this study. They were paid a show-up fee of $5 in addition to monetary reward contingent on their performance. On average, subjects earned approximately $15.

Experimental Design. In our experiment there were two sellers, each one selling a different product. Our goal was to trace the changes in demand among snobs and conformists. Therefore, we considered two different price points for Product 1, but kept the price of Product 2 constant at 6 francs. The prices were manipulated within subjects. Ten subjects labeled Type A buyers played the role of snobs, and another set of ten subjects labeled Type
B buyers played the role of conformists. The two groups we ran comprised of twenty subjects each. In Group 1 the price of Product 1 was 5 francs in the first thirty trials and 7 francs in the next thirty trials. The order of prices was reversed in Group 2.

**Procedure.** Subjects played the role of buyers, while the computer played the role of sellers.\(^{21}\) In keeping with the spirit of the complete information theoretical model, subjects were informed of \(\lambda_s, \lambda_c\), and the value distribution.

**Sellers.** Seller 1 sold Product 1 while Seller 2 sold Product 2. The sellers posted their prices and promised to supply the products to all buyers who were willing to pay the posted prices. Buyers could not negotiate the price with the sellers, and the computer played the role of the two sellers.

**Buyers.** Each subject had to decide whether to buy Product 1 or Product 2. Type A buyers were the snobs, whereas Type B buyers were the conformists.

Each Type A buyer had a base value for Product 1 and another base value for Product 2, as discussed in the empirical model (see Table 1). Note that the base values were not the same for all buyers. Further, the base values for Products 1 and 2 were different for the same subject. These base values, however, remained fixed throughout the experiment. Type A buyers valued the product less when more people owned the product. Consequently, the actual value of the product systematically dropped below the base value when more people chose to buy the product.\(^{22}\)

Type B buyers, on the other hand, valued the product more when more people owned the product. Thus, the actual value of the product rose above the base value when more people chose to buy the product.\(^{23}\)

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\(^{21}\)The instructions provided to the subjects can be obtained from the authors as a separate Appendix.

\(^{22}\)For example, consider the purchase decision of Type A buyer #2 whose base value for Product 1 is 21.5 and base value for Product 2 is 18.5 francs (see Table 1). Let the price of Product 1 be 5 francs, and that of Product 2 be 6 francs. If only a total of 11 Type A and Type B buyers purchase Product 1, the actual value of the product will fall to 16.5 francs (that is, \(21.5 - 0.5 \times 11 = 16\)). Consequently, the net gain from purchasing Product 1 is 11 francs (actual value-price = 16 - 5 = 11). On the other hand, as a total of 9 (that is, \(20 - 11 = 9\)) Type A and Type B buyers are purchasing Product 2, the actual value of that product is 15.5 francs for this particular buyer (that is, \(18.5 - 0.5 \times 9 = 14\)). Therefore, on purchasing Product 2 this buyer would gain 8 francs (actual value-price = 14 - 6 = 8). In this case, it is profitable for the buyer to purchase Product 1. Note that the actual value of a product changes with the total number of people purchasing that product.

\(^{23}\)For example, consider the purchase decision of Type B buyer #9 whose base value for Product 1 is 18.4 and base value for Product 2 is 21.6 francs (see Table 1). Let the price of Product 1 be 5 francs, and that of Product 2 be 6 francs. If only a total of 11 Type A and Type B buyers purchase Product 1, the actual value of the product will rise to 28 francs (that is, \(18.4 + 0.6 \times 11 = 25\)). Consequently, the net gain from purchasing Product 1 is 20 francs (actual value-price = 25 - 5 = 20). On the other hand, as a total of 9 (that is, \(20 - 11 = 9\)) Type A and Type B buyers are purchasing Product 2, the actual value of that product is 27
At the commencement of each trial, subjects were endowed with 7 francs so that they had sufficient funds to pay for the product if they wanted to buy it. They were also informed of their valuations for the two products, the distribution of valuations and the price of the products. The type of a subject, the total number of subjects, and the base valuations remained fixed across all trials.

In every trial, each subject had to decide whether to buy Product 1 or Product 2. After all the buyers made their decisions, the computer counted the total number of subjects who purchased Product 1 and Product 2. Then based on the total number of subjects who bought these products, the actual values of the products for each subject were assessed. The payoff to a subject who bought a product was: endowment + actual value of the product - price paid. At the end of every trial, each subject was informed of the number of Type A and Type B buyers who purchased the product, and the payoff for the trial.

To familiarize subjects with the structure of the game, they were required to play in three practice trials. Thereafter, they played sixty actual trials. After thirty actual trials of the game, the price of Product 1 was changed. At the end of the experiment, the subjects the cumulative earnings of the subjects, which were in an experimental currency called Francs, were converted to US dollars, and paid accordingly. Then they were debriefed and dismissed.

3.1.1 Results.

We observe in this study, as predicted by the equilibrium solution, an upward-sloping demand curve for Type A buyers (snobs) and a downward-sloping demand curve for Type B buyers (conformists). However, we note individual-level differences in the actions of our subjects.

Mean Demand. Table 2 presents the mean observed demand for each of the two groups along with the corresponding theoretical predictions. The average number of Type A buyers who bought Product 1 increased from 3.93 to 5.53 units as the price rose from 5 to 7 francs. This change in demand for Product 1 is significant ($F_{(1,118)} = 36.74, p < 0.0001$). On examining the behavior within each group, we obtain similar results. In Group 1, the average demand for Product 1 shifted from 4.07 to 5.63 units among Type A buyers ($F_{(1,58)} = 14.95, p < 0.001$). In Group 2, the corresponding demand increased from 3.8 to 5.43 units ($F_{(1,58)} = 22.72, p < 0.001$).
According to theory, fewer conformists should buy Product 1 if the price increases. Across the two groups, the mean demand significantly dropped from 7.6 to 2.92 units as the price changed from 5 to 7 francs ($F_{(1,118)} = 265.02, p < 0.0001$). The fall in demand is significant in each of the two groups. In Group 1 the mean demand slipped from 8.77 to 3.4 units ($F_{(1,58)} = 218.71, p < 0.001$), and correspondingly in Group 2 the mean demand fell from 6.43 to 2.43 units ($F_{(1,58)} = 168.25, p < 0.001$).

In equilibrium, the overall demand should fall as price increases. The observed demand pattern is consistent with this prediction ($F_{(1,118)} = 90.04, p < 0.0001$). We obtain similar results in each of the two groups (Group 1: $F_{(1,58)} = 91.61, p < 0.0001$; Group 2: $F_{(1,58)} = 42.44, p < 0.0001$).

If the price is 7 francs, more snobs should buy Product 1. Empirical evidence supports this prediction. On average Type A buyers bought 5.53 units, whereas conformists purchased only 2.92 units ($t = 8.7, p < 0.0001$). If the price is 5 francs, then more conformists should purchase Product 1. At the low price, conformists bought 7.6 units on average, while snobs purchased 3.93 units ($t = 11.11, p < 0.0001$). The results are similar when we examine the demand pattern within each group.

**Distribution of Demand.** The rational expectations equilibrium makes point predictions about the demand for Product 1 among snobs and conformists. The actual demand, however, varies over the several trials of the experiment. Fig. 2 shows the frequency distribution of demand over the sixty trials across the two groups. In equilibrium, three snobs should buy the product if the price is 5 francs. We notice that the actual demand for Product 1 ranges from 1 to 7, with mean $= 3.93$, median $= 4$, and mode $= 3$. But if the price increases to 7 francs, theory predicts that seven snobs should buy the product. The observed demand ranges from 2 to 8, with mean $= 5.53$, median $= 6$, and mode $= 6$.

According to the model, nine conformists should buy Product 1 when the price is 5 francs. Fig. 8 shows that the actual demand ranges from 2 to 10 units, with mean $= 7.6$, median $= 7.5$, and mode $= 6$. If the price rises to 7 francs, then theory predicts that the demand should fall to 1 unit. The actual demand ranged from 0 to 6 units, with mean $= 2.91$, median $= 3$, and mode $= 2$. We find that the quantity demanded by subjects varies widely over the several trials of the game, though the mean demands are qualitatively consistent with equilibrium predictions.
Trends in Demand. Fig. 3 presents the running average for blocks of five trials. We find that both snobs and conformists evince a significant trend in demand when the price is low ($p < 0.01$), but not at the high price ($p > 0.2$). Thus, the evidence for learning over the several replications of the experiment is mixed.

Variation by Valuation. According to theory, each player should play a pure strategy. Fig. 4 presents the number of trials in which the different Type A and Type B buyers purchased the product. This graph presents the results collapsed over the two groups. It shows that individuals do not always play the same pure strategy. Yet the overall demand pattern is directionally consistent with the model prediction.

Hence, the empirical analysis lends support for the predictions of Proposition 1.

4 Conclusion

This paper was motivated by a desire to understand the role of competition in the pricing of conspicuous goods. Toward this goal, we developed a model of duopoly that captures the spirit of consumer desire for uniqueness and conformism. The theoretical and empirical analysis addresses a few questions about conspicuous consumption.

1. What is the effect of consumer desire for uniqueness or conformity on the demand pattern for conspicuous goods? We show that in a market comprised of snobs and conformists, demand among snobs could increase as the price of a product increases. However, the demand among conformists, as well as the total market demand would decrease as price rises. The intuition for this result is that snobs prefer a higher priced product if they expect the overall demand to be lower at the higher price, and such an expectation will be rational only if the conformists have a downward-sloping demand curve. Hence, in a market comprised of either only snobs or conformists the demand curve is downward-sloping. It is useful to note that our result does not rely on signaling either product quality or wealth of consumers.\textsuperscript{25}

\textsuperscript{24}The ANOVA results when price is 5 francs are as follows: Snobs – $F(5,20) = 4.54, p < 0.01$; Conformists – $F(5,20) = 6.28, p < 0.01$

\textsuperscript{25}In fact, an explanation based on signaling status cannot account for an upward-sloping demand curve for snobs (see Corneo and Jeanne 1997).
Consistent with our findings, Chao and Shor (1998) report that the demand for women’s cosmetics grows as price increases in a sub-segment of the market though the overall demand curve has a downward slope. Moving beyond this correlational support, we see in the laboratory study that more snobs buy a product as its price increases. Thus, our findings offer a potential explanation for the upward-sloping demand curve seen in marketing textbooks (e.g., Boone and Kurtz 1999, Berkovitz et al. 2000, Perreault and McCarthy 2000).

2. **How does consumer desire for uniqueness or conformity affect firms prices and profits?**
   In a duopoly, the desire for uniqueness leads to higher prices and profits. The intuition for this result is as follows. As the price of a product falls it attracts more buyers, and thereby makes the product less appealing to the snobs. Thus, firms are less inclined to cut prices as snobbishness increases. The resulting softening in price competition increases firm profits. In contrast, conformism encourages price competition and thus reduces firm profits.

3. **Do consumers buy high quality products because of their desire for uniqueness?** It is commonly believed that snobs buy high quality products at high prices. In contrast to this perception, we find that when snobbishness is sufficiently large snobs might actually buy a lower quality product. However, if snobbishness is low and snobs have a strong preference for quality, then we might observe them buying high quality products. Hence snobs purchase high quality products *despite* snobbishness and not *because* of it.

4. **What should the communication focus be for marketing conspicuous products?** Contrary to some of our intuitions, we find that increased perceived functional differentiation of conspicuous products might actually reduce equilibrium prices and profits. Therefore, it might be profitable for managers to focus their communication efforts on highlighting the exclusivity of their products rather than the functional differences. Indeed, this is consistent with the advertising for luxury products seen in magazines such as *Vogue*.

**Limitations and directions for future research.** In developing the theoretical model we made several assumptions and future research can examine the implications of relaxing these assumptions. For example, the theoretical model is a single-period game. As producers
of conspicuous goods typically make multiple pricing decisions over a long time horizon, it would be useful to investigate how social effects affect firms’ pricing policies over time. For example, increased sales in earlier periods is likely to decrease the demand in the later periods if there is any snobbishness in the market. Conversely, conformism could increase demand in later periods. Future research can use a framework as in Cabral and Villas-Boas (2002) to examine such a dynamic game. Next, our theoretical analysis focused on one marketing mix variable, namely price. In practice, product design, advertising and promotion play an important role in marketing conspicuous products. Extending the model to accommodate these additional marketing mix variables is another avenue for future research.

From a behavioral standpoint, the model relies on some strong assumptions. The rational expectations assumption implies that subjects should reach the equilibrium in the very first trial of the game! In our data, we find trends in the demand pattern of our subjects, implying that subjects possibly learned to conform to the equilibrium solution. This raises another question: What type of adaptive learning dynamics could potentially lead to equilibrium behavior predicted by the rational expectations framework? For example, it is not clear what class of adaptive learning mechanism (such as belief learning or reinforcement learning) could lead consumers to behave according to the theoretical predictions (see Roth and Erev 1995, Camerer and Ho 1999, Amaldoss and Jain 2002, 2004 for a discussion of learning in games). Future research can examine this issue. Another fruitful avenue of research is to test the model predictions using field data on consumption of conspicuous goods.

26We conjecture that in the dynamic analysis, consistent with the results from our static game analysis, snobbishness will increase firm’s profits and conformism will have the opposite effect. It is however useful to note that the result will not hold if we consider a monopoly as the monopoly effect for the case of conformism is positive (see Amaldoss and Jain 2004). The strategic effect, however, is negative and outweighs the positive monopoly effect. Cabral and Villas-Boas (2002) refer to this phenomenon as the Bertrand supertrap.
References


Table 1: Value Distribution for the Empirical Model

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<th>Type</th>
<th>Product 1</th>
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<th>$S_A^2$</th>
<th>$S_A^3$</th>
<th>$S_A^4$</th>
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<td>19.8</td>
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<td>20.8</td>
<td>21.2</td>
<td>22</td>
</tr>
<tr>
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Note: $S_j^i$ refers to Subject $j$ of Type $i$.

Table 2: Mean Demand

<table>
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<th>Type B Buyers (Conformists)</th>
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<td>Prediction</td>
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<td>Group 2</td>
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<td>7</td>
<td>5.63</td>
<td>5.43</td>
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</table>
Figure 1
Empirical Model
Demand as a function of Price

Figure 2
Distribution of Demand of Snobs
Distribution of Demand of Conformists

Figure 3
Trends in Demand of Snobs
Trends in Demand of Conformists
Figure 4

Variation in Purchase of Product 1 among Snobs

Variation in Purchase of Product 1 among Conformists